

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of notices of requirement by Waka Kotahi NZ Transport Agency (Waka Kotahi) to Kāpiti Coast District Council and Horowhenua District Council for designations to construct, operate, maintain and improve a new state highway and shared use path and associated infrastructure, between Taylors Road (to the north of Ōtaki) and State Highway 1 north of Levin

SECTION 198D REPORT OF HELEN ANDERSON – PLANNING

**KĀPITI COAST DISTRICT COUNCIL AND
HOROWHENUA DISTRICT COUNCIL**

28 April 2023

A. OUTLINE OF REPORT

- 1 This report addresses the requirements of section 198D of the Resource Management Act 1991 (“**RMA**”) as relevant to the notices of requirement lodged with the Kāpiti Coast District Council (“**KCDC**”) and Horowhenua District Council (“**HDC**”) for the Ōtaki to North of Levin Highway Project (the “**Ō2NL Project**” or “**the Project**”) (together and separately as appropriate, the “**NoR**”). Accompanied by reports prepared by other technical and subject-matter experts, this report addresses section 171 issues to the extent they are relevant to the NoR, proposed conditions if the Environment Court is minded to confirm the NoRs, and includes a summary of the submissions received.
- 2 The NoR have been given by Waka Kotahi NZ Transport Agency (“**Waka Kotahi**” or “**Requiring Authority**”) for designations to construct, operate, maintain and improve the Ō2NL Project, which is a new state highway and shared use path and associated infrastructure between Taylors Road (to the north of Ōtaki) and State Highway 1 north of Levin.
- 3 In addition, Waka Kotahi has applied for resource consents (“**Applications**”) for the Ō2NL Project to Manawatū-Whanganui Regional Council (“**Horizons**”) and Greater Wellington Regional Council (“**GWRC**”). A separate section 87F report has been prepared addressing the Applications. Matters relating to the Applications are outside the scope of my report.
- 4 This report has been prepared in accordance with section 198D of the RMA which sets out the matters the report must cover. This report includes:
 - a) An introduction;
 - b) A description of the NoR sought;
 - c) A site description;
 - d) The notification and consultation process;
 - e) An assessment of the NoR having particular regard to Section 171(1) matters being:
 - i. Any relevant provisions of –

1. A national policy statement;
 2. A New Zealand coastal policy statement;
 3. A regional policy statement;
 4. A plan or proposed plan.
- ii. Whether adequate consideration has been given to alternative sites, routes or methods of undertaking the work;
 - iii. Whether the work and designation are reasonably necessary for achieving the objectives of the requiring authority for which the designation is sought;
 - iv. Any other matter.
- f) Summary of submissions received;
- g) Recommended conditions.
- 5 In preparing this report, I have relied on the expert advice (appended to this section 198D report) of the following technical advisors:
- (a) Bryn Hickson-Rowden – Terrestrial and Freshwater Ecology (**Appendix 1**)
 - (b) Julia Williams – Landscape and Visual (**Appendix 2**)
 - (c) Siiri Wilkening – Noise and Vibration (**Appendix 3**)
 - (d) Michala Lander – Social Impact (**Appendix 4**)
 - (e) Justine Bennett – Stormwater and Water Quality (**Appendix 5**)
 - (f) John Mc Arthur – Hydrology/ Flooding Natural Hazards (**Appendix 6**)
 - (g) Mike Cullen – Economics (**Appendix 7**)
 - (h) David Dunlop – Transport for KCDC (**Appendix 8**)
 - (i) Tim Kelly – Transport for HDC (**Appendix 9**)
 - (j) Graeme McIndoe – Urban Design (**Appendix 10**)

(k) Sarah Newall – Contaminated Land (**Appendix 11**)

(l) Peter Stacey – Air Quality (**Appendix 12**)

6 In relation to technical areas where there is overlap with regional council matters and where separate section 87F expert reports have also been prepared (for example, terrestrial and aquatic ecology, landscape and visual, hydrology/flooding and stormwater/water quality), I have also read these reports, but I have not relied on nor specifically made reference to these regional council technical reports in my section 198D report. These regional council reports have been specifically reviewed by Mr Mark St Clair in his section 87F report. However, where a joint section 87F and section 198D report has been prepared (for example, for air quality and contaminated land) I have relied on that report for my assessment.

7 While this report is pursuant to section 198D of the 1991 Resource Management Act (“**RMA**”), I have (in accordance with section 42A(1A) and (1B) of the RMA) attempted to minimise the repetition of information included in the NoR and where I have considered it appropriate, adopt that information.

B. QUALIFICATIONS / EXPERIENCE

8 My name is Helen Margaret Anderson.

9 I am currently a Technical Director – Planning, at GHD. Prior to joining GHD, I was a Principal Planner at Jacobs, from June 2016 to December 2019, and prior to joining Jacobs, I worked for AECOM New Zealand Limited (formerly URS New Zealand Limited) as a planning consultant for over sixteen years. Prior to joining AECOM, I worked for Auckland City Council for over six years (from 1993 to 2000) as a planner in the Hobson Eastern Bays Area Office and then for City Environments, Auckland City Council’s regulatory unit.

10 I hold a Bachelor of Planning and Master of Planning (with Honours) from the University of Auckland. I am a full member of the New Zealand Planning Institute and I have more than 29 years’ experience in resource management planning, both in local government and as a planning consultant.

11 I have been engaged by HDC and KCDC to provide planning expertise on the NoR. I first became involved with the NoR’s in July 2021 by way of a request from HDC and KCDC.

12 I am familiar with the general location and characteristics of the Project's geographical setting. I undertook a site visit of the proposed route on the 3rd August 2021 with representatives of Waka Kotahi and with other HDC, KCDC, Horizons and Greater Wellington technical experts.

C. CODE OF CONDUCT

13 I confirm that I have read and agree to comply with the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023. I confirm that I have stated the reasons for my opinions I express in this report, considered all the material facts that I am aware of that might alter or detract from those opinions, and that the report and the issues I have addressed are within my area of expertise.

14 Statements expressed in this report are made within the scope of my expertise, except where I rely on the technical advice I have referred to in paragraph 5 of this report.

15 I have all the information necessary to assess the application within the scope of my expertise and am not aware of any gaps in the information or my knowledge.

D. EXECUTIVE SUMMARY

16 The key conclusions of my report are:

- a) The NoR prepared by Waka Kotahi for the Project are comprehensive.
- b) I consider that the Requiring Authority has adequately considered alternative sites, routes and methods of undertaking the work, as set out in Part E of the AEE and assessed in section M of this report.
- c) Following review of the NoR by Council's technical experts, there are a number of issues that have been identified that I consider require further assessment or relate to areas of further work that need to be addressed by the Requiring Authority. I expect that these will be addressed through expert conferencing and an update will be provided to the Court and parties at the appropriate time. In summary these are:

Actual or Potential Effect	Key Issues Identified by Council's Technical Experts
Noise and vibration	Consider the establishment of a landscape bund adjacent to the Tara-Ika Urban Growth Area to provide additional noise reduction to the future residential area of Tara-Ika.
Air quality	Include additional requirements in the CAQMP (including monitoring plans) and include triggers to assess the performance of mitigation measures to implement additional mitigation and to rectify nuisance effects.
Terrestrial and Freshwater Ecology	<p>Additional information and rationale are required regarding the bat survey methodology used.</p> <p>Amendments need to be made to a number of regional consent conditions to strengthen the effects management measures in relevant management plans to ensure the proposed biodiversity outcomes are met.</p>
Contaminated Land	<p>A clearer and more robust process is required to address the management of contaminated land to inform possible future consenting requirements.</p> <p>That amendments need to be made to proposed regional condition REW4 to clearly set out the process for addressing contaminated land, including reviewing the PSI once site access is available, and to also include REW4 in the designation conditions.</p>

Actual or Potential Effect	Key Issues Identified by Council's Technical Experts
Hydrology/Flooding Natural Hazard	<p>There is insufficient information to assess flooding effects. The following information is required:</p> <ul style="list-style-type: none"> • Model a 0.5%AEP design storm event. • Review Table F.4 against KCDC's requirement of no increase in flood level. • Provide velocity mapping of the modelled area outside the designation. • Provide additional information relating to change in flood velocity. • Provide additional information to quantify the duration of flood inundation for the modelled area outside of the designation for both the 10% and 1% AEP events.
Water Quality	<p>The assessment and mitigation measures do not currently appear to adequately address the management of an elevated level of risk during peak earthworks and due to a potential peaking of exposed open areas.</p> <p>New and/or amended existing conditions and management plans (eg. Operations and Maintenance Plan) need to be provided to strengthen monitoring, management and reporting in relation to water quality and erosion and sediment control during construction and operation.</p>

Actual or Potential Effect	Key Issues Identified by Council's Technical Experts
Transport and Traffic	<p>There is a lack of integration of the Ō2NL alignment as it passes through the Tara-Ika development area, and a lack of cross connection and provision of the East-West Arterial as shown in PC4 Structure Plan 013.</p> <p>The location and design of the Taylors Road Interchange connection to Ōtaki and PP20 is considered to be substandard, does not comply with best practice and will result in poor legibility.</p>
Economic	<p>The economic effects of severance between Tara-Ika and Levin East due to the location of Ō2NL and lack of recognition of the East-West Arterial cross connection.</p>
Social Impact	<p>The need for a recreation assessment of horse riding in the region to confirm the location of equestrian facilities and any effects of the Project on them, and whether inclusion of a bridleway is practicable for the Project.</p> <p>Undertake a sense of place assessment to understand impact on family connections to the history and heritage of the area.</p> <p>Provide an assessment of the impact of the Project on fears and aspirations of the community.</p> <p>Social effects and severance issues arising from the disconnect between PC4 and the Project.</p>

Actual or Potential Effect	Key Issues Identified by Council's Technical Experts
Urban Design	<p>The failure to integrate transportation and land use at Tara-Ika, which is not consistent with the project's CEDF urban design principles.</p> <p>The lack of East-West connectivity at Tara-Ika will lead to avoidable increased vehicle dependency and use, and to consequent adverse health, social and environmental effects.</p> <p>Cross-connections at Tara-Ika should be integrated with the design and construction of Ō2NL.</p>
Landscape and Visual	<p>The lack of provision in conditions for the Councils to have a role in certifying the CEDF and the ability to certify / comment on design review audits.</p> <p>The lack of provision in conditions for Councils to certify natural character planting or having a role in monitoring planting areas until they meet specified performance targets.</p> <p>Limited confidence, based on the information provided, that existing levels of natural character will be maintained across the catchments post construction if landowner approval for planting within private properties cannot be obtained, and planting is confined to the designation areas only.</p>
Tangata whenua and cultural values	The need to provide conditions which adequately and appropriately address cultural

Actual or Potential Effect	Key Issues Identified by Council's Technical Experts
	effects as set out in submissions by tangata whenua, and provide additional information to show how residual cultural effects have been appropriately mitigated.

- d) Informed by the Council's technical specialist reviews, and considering the NoR against the relevant National Policy Statements, as required by section 171(1)(a)(i), I consider that the Project is consistent with the NPS on Urban Development 2020 (updated May 2022) in part, and the NPS on Highly Productive Land 2022.
- e) In relation to the NPS-UD, I do not consider that the Project, where it will interface with the Tara-Ika growth area, is consistent with the NPS-UD.
- f) Informed by the Council's technical specialist reviews, and considering the NoR against the relevant Regional Policy Statements (GWRC RPS 2013 and Horizons One Plan RPS (Part 1)), I consider that the Project may not be consistent with the following objectives and policies:

GWRC RPS 2013

- i. Objective 22, Policies 30, 54 and 57 – In relation to the Taylors Road Interchange

- g) Informed by Council's technical specialists reviews, and considering the NoR against the Kāpiti Coast District Plan and Horowhenua District Plan, I consider that for the most part, the NoR is consistent with the relevant HDC and KCDC District Plan objectives and policies, with the following exceptions:

Kāpiti Coast District Plan

- i. Natural Hazards – Objective DO-O5, Policies NH -P2, NH-P3, NH-P4 and NH-FLOOD-P12 – In relation to understanding flooding effects. I consider that there is currently insufficient information in relation to

flooding effects to understand whether the Project is consistent with these provisions.

- ii. Infrastructure, Access and Transport - Objective DO-013, Objective DO-014, Policies INF-PNU-P16, INF-GEN-P1, INF-GEN-P2, INF-GEN-P3, INF-GEN-P4, INF-GEN-P9, INF-MENU-P18, TR-P1, TR-P3, TR-P4, TR-P6, TR-P7 – In relation to the Taylors Road Interchange.

Horowhenua District Plan

- i. Natural Hazards – Objective 8.1.1 and Objective 8.2.1, Policies 8.1.4, 8.1.5, 8.1.6, 8.1.7, 8.1.8, 8.1.9, 8.1.13, 8.2.2, 8.2.3 – There is currently insufficient information in relation to flooding effects to understand whether the Project is consistent with these provisions.
 - ii. HDP PC4 (Tara-Ika) - Objective 6A.1, Objective 6A.2, Objective 6A.3, Policies 6A.1.1, 6A.1.2, 6A.1.3, 6A.1.10, 6A.2.2, 6A.2.3, 6A.3.1, 6A.3.2 – In relation to the Tara-Ika urban growth area (PC4 and Structure Plan 013). I consider that the Project fails to integrate transport and land use due to the lack of east-west connectivity, which will create severance between the existing Levin east urban area and Tara-Ika town centre, will lead to increased vehicle dependency and lead to consequent adverse health, social and environmental effects, and will not, in this location, contribute to a well-functioning urban environment or contribute to the outcomes sought by these provisions.
- h) In general I consider that the proposed designation conditions are appropriate, however as highlighted by Council’s technical specialists, there are a number of conditions where either the approach proposed is not supported, or additional conditions are required to avoid, remedy or mitigate effects. While I have signalled some suggested amendments to the draft designation conditions contained in **Appendix 13**, this is not complete given there are some matters that still require further clarification or information from the Requiring Authority, which will be addressed during the next stages of this process (eg. through expert conferencing and mediation).
- i) While a number of issues have been identified in the section 198D reports for the District Councils that require further consideration, I do not consider that

there is anything identified in those reports that raises concerns relating to notification or the ability for submitters to understand the potential effects of the Project.

E. INTRODUCTION

- 17 On the 2nd November 2022, Waka Kotahi issued the NoR to HDC and KCDC for the Ō2NL Project. The Ō2NL Project is the northern most section of the Wellington Northern Corridor, connecting to the Peka Peka to Ōtaki expressway. Once Ō2NL is completed, a minimum 4-lane expressway from the central Wellington CBD to north of Levin will be provided.
- 18 The NoR was accompanied by a request for the NoR to proceed directly to the Environment Court for determination, which was granted by HDC and KCDC on the 20th January 2023.
- 19 Concurrent Applications to the Manawatu Whanganui Regional Council and Greater Wellington Regional Council have been lodged for the Ō2NL Project for a suite of resource consents required for the construction, operation and maintenance of the new State Highway.
- 20 The Requiring Authority also requested that the Applications proceed directly to the Environment Court for determination, which was granted by Horizons and GWRC on the 20th January 2023.
- 21 This report provides an analysis of the NoR in relation to the relevant section 171 RMA matters, with a view to informing and assisting the Environment Court as part of the direct referral process. My assessment and recommendations are based on the information provided by the Requiring Authority, my review of submissions and my reliance on the section 198D technical reports accompanying my report. For the benefit of submitters, I record that my assessment and recommendations are not binding on the Environment Court.
- 22 Specifically, I have considered the following documents provided by the Requiring Authority:

- a) The NoR and Assessment of Environmental Effects (“**AEE**”) dated 1 November 2022¹:
- b) Response to request for further information under section 92 of the RMA, received by HDC and KCDC on 17th January 2023.
- c) Letter received from the Requiring Authority dated 21 March 2023 updating a number of conditions in response to discussions with Council, iwi partners and the Department of Conservation. The condition updates are now considered as the baseline condition set.

23 A more detailed description of the history of NoR, the proposed activities and the site is provided in sections F, I, and J of this report.

24 The recommendations made, and conclusions reached in this report, may be revisited following mediation, expert witness conferencing, and following the review of the evidence of the Requiring Authority and any submitters who join the direct referral as parties later in the process.

F. APPLICATION FOR NOTICES OF REQUIREMENT

25 The Ō2NL Project is the northern most section of the Wellington Northern Corridor, and is proposed to provide the final section of that corridor, being a 4-lane expressway which connects to the Peka Peka to Ōtaki expressway. The Peka Peka to Ōtaki expressway opened in late December 2022.

26 The Ō2NL Project will become the new SH1. It will replace the existing SH1 and that part of the existing SH57 along Arapaepae Road. Once the Ō2NL Project has been constructed and opened, it is likely 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 land uses in the district, including access to the new highway. These existing sections of road will also provide an alternative strategic route for resilience.

¹ Comprising Volume I: Forms; Volume II: Notices of Requirement for a Designation and Application for Resource Consents: Supporting Information and Assessment of Effects on the Environment; Volume III: Drawing Set; Volume IV: Technical Assessments; Volume V: Cultural Impact Assessments

Description of Notices of Requirement Sought

- 27 The Requiring Authority has given notice to HDC and KCDC of requirements for a designation to enable the construction, operation, maintenance and improvement of new state highway.
- 28 The NoR sought consist of the following:
- a) The NoR to KCDC applies to an area of land within the Kāpiti Coast District of approximately 101.92 hectares, located generally between the northern boundary of the Kāpiti Coast District immediately to the east of existing SH1 and the northern extent of the Peka Peka to Ōtaki Expressway (PP2Ō) near Taylors Road on SH1.
 - b) The NoR to HDC applies to an area of land within the Horowhenua District of approximately 516.517 hectares, located generally between Heatherlea East Road and the boundary of the Kāpiti Coast District to the east of existing SH1.
- 29 Waka Kotahi is not seeking to waive the requirement to submit outline plans under section 176A RMA, except for site establishment works, where a waiver is sought under section 176A(2). Site establishment works consist of activities required to be undertaken prior to the commencement of bulk earthworks.²
- 30 The Ō2NL Project also traverses land that is subject to an existing designation for 'railway purposes' in the Horowhenua District Plan (designation reference D1). KiwiRail Holdings Limited (KiwiRail) is the requiring authority responsible for this designation. Where the Ō2NL Project designation is over the existing KiwiRail designation, written consent under section 177(1)(a) will need to be obtained from KiwiRail before construction activities that traverse the designation can commence. Where any works for Ō2NL Project need to be undertaken outside of the designation corridor, on any areas of land subject to the existing KiwiRail designation, written consent under section 176(1)(b) from KiwiRail will similarly need to be obtained.
- 31 Waka Kotahi have advised that they will seek this written consent from KiwiRail following the completion of detailed design and prior to the commencement of construction activities that affect the land subject to the North Island Main Trunk Line ("**NIMT**").

² Volume II, Assessment of Environmental Effects, Section 14.3 Establishment works.

G. FURTHER INFORMATION AND INFORMATION GAPS

32 Further information was requested under section 92(1) of the RMA with regard to the NoR on 9th December 2022. A copy of the request is included in **Appendix 14**. The further information sought related to clarification of matters related to traffic and transport, landscape and visual, economics, urban design, terrestrial and freshwater ecology, noise and vibration, water quality, hydrology and flooding, contaminated land and planning matters.

33 HDC and KCDC received a detailed response to these matters on the 22nd December 2022. A copy of the Waka Kotahi's response is included in **Appendix 15** ("the **Section 92 Response**").

H. NOTIFICATION AND SUBMISSIONS

34 The NoR and the Applications were publicly notified on the 24th January 2023. The submission period was open for 25 working days, closing on the 28th February 2023. A total of 89 submissions were received across the NoR and the Applications.

35 No late submissions were received.

36 Of the 89 submissions received, the general position recorded in the submissions with respect to the NoR are set out in the table below:

	Horowhenua DC NoR	Kāpiti Coast DC NoR
Support	33	32
Oppose	28	23
Neutral	10	10
Not Specified	18	24
TOTAL	89	89

37 A full list of submitters is provided at **Appendix 16**. I note that submission number #80 is a collective submission from ten (10) individual hapu of Ngati Raukawa ki te Tonga.

In addition, submissions #81 and #83 - #90 are individual submissions from 9 of the 10 hapu. As such, there is no submission #82 for the purposes of calculating the total number of submissions. The submissions have been summarised at **Appendix 17**. I record that this summary of the submissions is a combination of Regional and District Council matters. However, in my report, I deal only with the District Council matters. Mr Mark St Clair addresses the Regional Council matters in his section 87F RMA Report.

- 38 At the time of preparing this section 198D report, 46 submitters wish to be heard in relation to their submission, 21 submitters do not wish to be heard. 22 submitters did not specify whether they wished to be heard or not.
- 39 At the time of preparing this section 198D report, I am not aware of the Requiring Authority having made any formal amendments to the Project to address matters raised in submissions.
- 40 I have addressed the matters raised in submissions generally throughout my report where those concerns are relevant to the consideration of effects on the environment of allowing the NoR as set out in section 171 RMA. Technical advisors for HDC and KCDC have also reviewed the relevant submissions, as required, and noted these in their assessments.
- 41 The key themes raised in submissions in support of the NoR are:
- a) Enhanced road transport links between Wellington and Manawatu;
 - b) Will deliver economic benefits, job creation and enable economic growth for the region;
 - c) Significant transport safety, resilience and journey time benefits;
 - d) Benefit of reduce traffic on SH57 and environmental benefits to adjacent communities;
 - e) Several hapu submitters³ have indicated support for the Ō2NL Project but signalled that they wished to be involved in the development of conditions, as the draft conditions lodged with the NoR do not reflect the outcomes sought by Ngati Raukawa ki te Tonga iwi.

³ 10 Hapu of Ngāti Raukawa ki te Tonga - Submission Nos. 80 to 90

42 The key themes raised in submissions in opposition or neutral/not specified are:

- a) Effects on property access;
- b) Impacts on rural views for existing residents;
- c) Effects on the Ashleigh homestead;
- d) Effects on Manukau village small village character and rural lifestyles;
- e) Dust effects during construction, including contamination of roof sourced drinking water, and bore water contamination;
- f) Stormwater management during construction and operation, safety issues with stormwater ponds;
- g) Increased flooding north of Manukau;
- h) Operational noise and light spill effects;
- i) Lack of consultation;
- j) Loss of productive land/ grazing paddocks;
- k) Noise and vibration effects during construction and operation;
- l) Improve the rail service before building the new expressway;
- m) Construction and operational effects (dust, noise) on exiting commercial operations (eg. Free range egg business at 217 Kimberly Rd/345 Arapaepae South Rd);
- n) Traffic effects during construction and operation on Tararua Road;
- o) Control of noxious weeds and pests;
- p) Lack of provision on the proposed shared use path (“**SUP**”) for equestrian activities. Consistent with M2PP and PP20 submitters consider that there should be a multi-use path that allows horse riding;
- q) Cultural values are not adequately addressed and proposed conditions for tangata whenua values do not appropriately outcomes sought by tangata whenua.

I. SITE DESCRIPTION

Location – Existing Environment

- 43 The Requiring Authority has provided a detailed description of the existing environment in the AEE, including the site location, physical characteristics, site geology, landscape characteristics, flora and fauna of the proposed route and surrounding area⁴.
- 44 Figure 1 below shows the location of the Ō2NL Project.

⁴ AEE Volume II, Part B, Section 8: natural and physical environment and Section 9: Human environment



Figure 1: Location and extent of the Ō2NL Project

J. PROPOSED ACTIVITY

45 A thorough description of the proposal is set out in the AEE⁵.

46 In summary, the Requiring Authority is proposing to construct an approximately 24 kilometre long new four-lane median divided state highway (two lanes in each

⁵ Volume II, Assessment of Environmental Effects, Part C: Description of the Project

direction) and a shared use path (SUP) between Taylors Road, and the Peka Peka to Ōtaki expressway (PP2Ō), (to the north of Ōtaki) and SH1 north of Levin.

47 The Ō2NL Project comprises the following key features:

- a) A grade separated diamond interchange at Tararua Road, providing access into Levin;
- b) Two dual lane roundabouts located where Ō2NL crosses the existing Arapaepae Road/State Highway 57 (SH57) and where it connects with the current SH1 at Heatherlea East Road, north of Levin;
- c) Four lane bridges over the Waiauti, Waikawa and Kuku Streams, the Ohau River and the North Island Main Trunk (NIMT) rail line north of Levin;
- d) A half interchange with southbound ramps near Taylors Road and the new PP2Ō expressway to provide access from the current SH1 for traffic heading south from Manakau or heading north from Wellington, as well as providing an alternate access to Ōtaki;
- e) Local road underpasses at South Manakau Road and Sorensens Road to retain local connections;
- f) Local road overpasses to provide continued local road connectivity at Manakau Heights Drive, North Manakau Road, Kuku East Road, Muhunoa East Road, Tararua Road (as part of the interchange), and Queen Street East;
- g) New local roads at Kuku East Road and Manakau Heights Road to provide access to properties located to the east of the Ō2NL Project;
- h) Local road reconnections connecting:
 - McLeavey Road to Arapaepae South Road on the west side of the Ō2NL Project;
 - Arapaepae South Road, Kimberley Road and Tararua Road on the east side of the Ō2NL Project;
 - Waihou Road to McDonald Road to Arapaepae Road/SH57;
 - Koputaroa Road to Heatherlea East Road and providing access to the new northern roundabout;

- i) The relocation, and improvement, of the Tararua Road and current SH1 intersection, including the introduction of traffic signals and a crossing of the NIMT;
- j) Road lighting at intersections on the new state highway, that is, where traffic can enter or exit the highway;
- k) Signs, including gantries, as required;
- l) Median and edge barriers that are typically wire rope safety barriers with alternative barrier types used in some locations, such as bridges; stormwater treatment wetlands and ponds, stormwater swales, drains and sediment traps;
- m) Culverts to reconnect streams crossed by the Ō2NL Project and stream diversions to recreate and reconnect streams;
- n) A separated (typically) three-metre-wide SUP, for walking and cycling along the entire length of the new highway that will link into shared path facilities that are part of the PP2Ō expressway;
- o) Spoil sites at various locations along the length of the Project; and
- p) Five sites for the supply of bulk fill/earth material located near Waikawa Stream, the Ohau River and south of Heatherlea East Road.

K. STATUTORY CONSIDERATIONS - SECTION 198D RMA

48 Section 198D RMA provides that if a territorial authority grants a request for direct referral under section 198B, it must prepare a report on the application. The report must:

- (a) *Address issues that are set out in section 171 or 191⁶ to the extent that they are relevant to the requirement; and*
- (b) *Suggest conditions that it considers should be imposed if the Environment Court confirms the requirement (with or without modifications); and*
- (c) *Provide a summary of submissions received.*

⁶ Section 191 RMA is only relevant when considering a requirement made under section 189 by a heritage protection authority to a territorial authority, and is therefore not relevant to the Ō2NL Project NoR.

Section 171

- 49 Section 171(1) RMA requires that the territorial authority must, subject to Part 2, consider the effects on the environment of allowing the requirement, having particular regard to any relevant provisions of a national policy statements, regional policy statements or proposed regional policy statements and plans or proposed plans.
- 50 Section 171(1B) RMA states that the effects 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.
- 51 The section 171(1) RMA matters that I consider to be of relevance to the NoR include:
- (a) **Relevant National Policy Statements (NPS)**⁷ - The National Policy Statements relevant to the Ō2NL Project are the NPS for Freshwater Management 2020 (amended February 2023), the NPS on Urban Development 2020 (updated May 2022), and the NPS on Highly Productive Land 2022. I concur with the statement in the NoR that the NPS for Renewable Electricity Generation 2011 and the NPS on Electricity Transmission 2008 are not relevant to the NoR⁸. I discuss the relevant NPS in paragraphs 52 - 62 of this report.
 - (b) **New Zealand Coastal Policy Statement**⁹ - I concur with the statement in the application that the New Zealand Coastal Policy Statement is not relevant to the NoR¹⁰.
 - (c) **Relevant Regional Policy Statements (RPS)**¹¹ - The Horizons Regional Policy Statement¹² and the Greater Wellington Regional Policy Statement 2013 are relevant to the NoR. I discuss these RPS in paragraphs 63 - 65 of this report.

⁷ Section 171(1)(a)(i) RMA

⁸ Volume II, Assessment of Environmental Effects, Section 63.4, pg.325

⁹ Section 171(1)(a)(ii) RMA

¹⁰ The Ō2NL Project is not located within the coastal environment and does not directly impact the coastal environment, therefore the NZCPS is not considered relevant to this Project. Refer AEE Volume II, Section 63.4, pg.325

¹¹ Section 171(1)(a)(ii) RMA

¹² Horizons Regional Policy Statement is contained in Part 1 of the Horizons One Plan

- (d) **Plan or Proposed Plan**¹³ - The Plans relevant to the Ō2NL Project are the following: Horizons One Plan, Greater Wellington Proposed Natural Resources Plan, Kāpiti Coast District Plan and Horowhenua District Plan. The relevant objectives, policies and rules of the Horizons One Plan and Proposed Natural Resources Plan for the Wellington Region have been assessed in detail by Mr Mark St Clair in his section 87F report, and therefore I rely on Mr St Clair's assessment and adopt as part of my report. The relevant objectives and policies of the HDC and KCDC District Plans are considered in paragraphs 66 to 67 of this report.

NPS for Freshwater Management

- 52 The NPS Freshwater Management ("**NPSFM**") addresses, as a matter of national significance, the management of fresh water through a framework that considers and recognises Te Mana o te Wai as an integral part of freshwater management.
- 53 The Requiring Authority has set out an assessment of the relevant provisions of the NPSFM as to the potential effects of the Project¹⁴.
- 54 The relevant objectives and policies of the NPSFM have been assessed by Mr Mark St Clair in his section 87F report. I rely on Mr St Clair's assessment and adopt it as part of my report.

NPS on Urban Development 2020

- 55 The National Policy Statement for Urban Development 2020 ("**NPS UD**") requires councils to plan and provide for growth. KCDC is a Tier 1 urban environment and HDC is a Tier 3 urban environment. The NPS UD gives direction to ensure capacity is provided for residential and business development.
- 56 The AEE discusses Objectives 1, 4 and 8 of the NPS-UD. Objective 1 directs that New Zealand has well-functioning urban environments that enable all people and communities to provide for their social, economic and cultural well-being and for their health and safety now and into the future.

¹³ Section 171(1)(a)(iv) RMA

¹⁴ Volume II Assessment of Environmental Effects, Part I, Section 63.1

57 In general, I agree with the assessment contained in section 63.2 of the AEE, and consider that the wider Ō2NL Project is consistent with the NPS-UD for the following reasons:

- a) The majority of the strategic, transport and more localised planning strategies and plans relevant to the Project identify and reinforce the need for the Project to occur to assist in improving transport network safety and resilience, reducing congestion, facilitating coordinated urban growth, and contributing to efficient freight and public transport provision.
- b) The Project will contribute to growth in the Kāpiti Coast District through providing enhancing the resilience and connectivity of the state highway network.
- c) The functioning of the Levin town centre will be enhanced, and people's health and safety improved, by the reduction in congestion produced by inter-regional traffic (including heavy vehicles) in the town centre once the Project is operational.
- d) The SUP will provide an active transport spine along the entire route to which all adjacent communities have the potential to connect to in the future.
- e) Key urban amenity effects, particularly noise and visual matters, will be mitigated to levels that will ensure a well-functioning urban environment now and in the future.
- f) Through the iwi partnership approach, the development of the Ō2NL Project is underpinned by and responds to cultural values and in doing so, takes into account the principles of the Te Tiriti o Waitangi/Treaty of Waitangi.

58 However, in relation to the Tara-Ika urban growth area, I do not consider that the Ō2NL Project is consistent with the NPS-UD, and I do not agree with the following statements made in section 63.2 of the AEE (Volume II):

The Project will contribute to growth in the Horowhenua District through enablement of full capacity urban development of the Tara-Ika Growth Area east of Levin (and other areas identified for urban growth by HDC) by providing additional capacity on both the local and strategic roading network.

The design of the Project provides appropriate connections with the existing and future local roading network in Levin and retains the connectivity of the existing local roading network at key points.

59 Based on the advice of Mr McIndoe (the Councils' Urban Design expert), Mr Cullen (the Councils' Economic expert) and Mr Kelly (HDC's Transport expert), the current proposed design arrangement of the Ō2NL Project fails to integrate transport and land use through lack of east-west connectivity, will create severance between the existing Levin east urban area and Tara-Ika town centre, will lead to increased vehicle dependency and consequent adverse health, social and environmental effects, and in this location will not contribute to a well functioning urban environment or contribute to the outcomes sought by the NPS-UD.

National Policy Statement on Highly Productive Land 2022

60 The National Policy Statement on Highly Productive Land ("**NPS-HPL**") came into force on 17 October 2022. The sole objective (2.1) of the NPS HPL is that:

'Highly productive land is protected for use in land-based primary production, both now and for future generations.'

61 The NPS-HPL is applicable to the Project and the AEE assesses the Project against the relevant matters contained in the NPS-HPL at section 63.3. As set out in Technical Assessment N – Productive Land, a minimum of 229.5ha and a maximum of 358.7ha of highly productive land will be affected by the Project.

62 Overall, I agree with the assessment provided at section 63.3 that the Project is not contrary to the NPS HPL.

Regional Policy Statements

63 There are two Regional Policy Statements that are relevant to the Project - the Horizons One Plan Regional Policy Statement (Part 1) and the Greater Wellington Regional Policy Statement 2013 ("**GWRC RPS**").

64 Mr Mark St Clair in his section 87F report has undertaken an assessment of each of these RPS as they relate to the Applications (eg. Horizons One Plan RPS: Te Ao Maori, infrastructure, land, water, indigenous biodiversity (natural character), air, and natural hazards and GWRC RPS: air quality, infrastructure, fresh water, indigenous ecosystems, natural hazards, resource management with tangata whenua soils and

minerals). I have reviewed Mr St Clair’s assessment and agree with and adopt the findings in his assessment.

65 There are however a number of objectives and policies that are relevant to the Project that Mr St Clair has not addressed because they relate to district matters, such as historic heritage, landscape and regional form and function. I have therefore focussed my review on these matters, and where my view differs to that of the Requiring Authority, I have noted this in the tables below.

Horizons One Plan RPS (Part 1)

Provision	Comment
Chapter 6: Indigenous Biological Diversity, Landscape and Historic Heritage	
<p>Landscapes and Natural Character Objective 6-2 (Outstanding natural features and landscapes, and natural character)</p> <p>Policy 6-6 (Regionally outstanding natural features and landscapes) Policy 6-7 (Assessing outstanding natural features and landscapes)</p>	<p>I agree with the assessment provided in section 65.2.5 of the AEE and consider the Project is consistent with Objective 6-2 and Policies 6-6 and 6-7.</p> <p>As there are no outstanding natural features (ONFs) and landscapes (ONLs) directly affected by or in proximity to the proposed designation, the components of Objective 6-2 that address ONFs and ONLs are not relevant. Policies 6-6 and 6-7 are also therefore not relevant.</p>
<p>Historic Heritage Objective 6-3 (Historic Heritage)</p> <p>Policy 6-11 (Historic Heritage)</p>	<p>I agree with the assessment provided in section 65.2.3 of the AEE, and consider the Project is consistent with Objective 6.3 and Policy 6-11.</p> <p>There are no listed historic places or areas on the New Zealand Heritage List or New Zealand Archaeological Association recorded archaeological sites within the proposed designations.</p> <p>The Project will not directly affect the ‘Ashleigh’ homestead, which is considered to have medium heritage values, and measures are proposed to mitigate the indirect effects of the project on the heritage values of the Ashleigh site.</p> <p>The potential for works to disturb unidentified archaeological sites will be managed by an Archaeological Authority and accidental discovery protocol.</p>

Greater Wellington Regional Policy Statement

Provision	Comment
<p>Chapter 3.5 Historic Heritage Objective 15</p> <p>Policy 46</p>	<p>I agree with the assessment provided in section 66.4 of the AEE.</p> <p>There are no items of historic heritage directly affected by the Project.</p>
<p>Chapter 3.7 Landscape Objective 18</p> <p>Policy 27</p>	<p>I agree with the assessment provided in section 66.6 of the AEE.</p> <p>Objective 18 relates to special amenity landscapes.</p> <p>No Policies are identified in the assessment in section 66.6. Policy 27 is relevant to the region's special amenity landscapes. Pukehou Hill is identify as a special amenity landscape in the KCDC District Plan however the Project does not encroach into this identified feature.</p>
<p>Chapter 3.9 Regional Form, design and function Objective 22</p> <p>Policy 30, Policy 54, Policy 57</p>	<p>There is no assessment made of the Project against the Objectives and Policies of Chapter 3.9 Regional form, design and function.</p> <p>Objective 22 states <i>'a compact well designed and sustainable regional form that has an integrated, safe and responsive transport network, and:</i></p> <p>.....</p> <p><i>(i) integrated land use and transportation;</i></p> <p><i>(j) improved east-west transportation linkages;</i></p> <p><i>(k) efficiently use existing infrastructure (including transport network infrastructure);</i></p> <p><i>Policy 33: Supporting a compact, well designed and sustainable regional form – with reference to the Regional Land Transport Strategy as the method of implementation.</i></p> <p><i>Policy 54: Achieving the region's urban design principles - consideration</i></p> <p><i>Policy 57: Integrating land use and transportation -consideration</i></p> <p>In relation to the Taylors Road interchange, I consider that the Project may not be consistent with these Objective and Policies, based on the assessment by Mr David Dunlop (Appendix 8) and as discussed in Section L of my report.</p>

Horizons One Plan – Regional Plan – Part 2 (2014) and Proposed Natural Resources Plan for the Wellington Region (Appeals Version - Final 2022)

66 The relevant objectives, policies and rules of the Horizons One Plan and Proposed Natural Resources Plan for the Wellington Region have been assessed by Mr Mark St Clair in his section 87F report. I have reviewed Mr St Clair’s assessment and agree with and adopt the findings in his assessment.

HDC and KCDC District Plans – Objectives and Policies

67 The HDC and KCDC District Plans contain a number of objectives and policies, many of which the Project gives effect to. Generally, I agree with the assessment undertaken by the Requiring Authority in Part I, Section 68 of the AEE. However, there are some areas where relevant objectives and policies have not been identified and also where I do not agree with the assessment provided, and I have identified these and the reasons why in the tables below.

Horowhenua District Plan Objectives and Policies

Provision	Comment
Tangata Whenua	
Objective 1.1.1, Objective 1.2.1, Objective 1.3.1 Policy 1.2.3, Policy 1.2.4, Policy 1.2.5, Policy 1.3.3, Policy 1.3.5	<p>I agree with the assessment provided in section 68.1 of the AEE and consider the Project is consistent with these provisions.</p> <p>Objective 1.1.1 seeks to provide Tangata Whenua with opportunities to actively participate in resource management processes. Objective 1.2.1 seeks to recognise the relationship of the Tangata Whenua of the Horowhenua and their culture and traditions. Objective 1.3.1 seeks to protect areas and sites of cultural significance.</p> <p>Tangata Whenua have been involved as project partners in considering the route options, route alignment, assessment process and assessment of effects.</p> <p>I note however that a number of submissions have been received from tangata whenua, including the Project Iwi partners raising issues in relation to cultural effects and the proposed conditions. I understand that the requiring authority is working with these submitters to further refine the conditions to address the matters raised. It may be that further information is forthcoming in respect of the Iwi Project Partners and submitters views as to these effects and how they are to be addressed during the hearing process.</p>

Archaeology, heritage and wāhi tapu	
Objective 1.3.1, Objective 13.2.1 Policy 1.3.3, Policy 1.3.5, Policy 2.1.9, Policy 13.2.5	<p>I agree with the assessment provided in section 68.2 of the AEE and consider the Project is consistent with these provisions.</p> <p>There are no identified historic heritage features in the HDC section of the Project that is directly affected by the Project.</p> <p>The Prouse 'Ashleigh' homestead (fronting Queen St) is not listed in the District Plan as a heritage building, but it is a pre-1900 structure and has been assessed as being of regional significance. It is located approximately 65m east of the proposed designation boundary and measures (such as vibration monitoring, dust inspection and washdown) are proposed to minimise any effects on this building.</p> <p>Accidental discovery protocols will be observed during construction works.</p>
Rural Productivity and soils	
Objective 2.2.1 Policy 2.2.5, Policy 2.2.7, Policy 2.2.9 and Policy 2.2.3, Policy 2.2.4, Policy 2.2.6	<p>I agree with the assessment provided in section 68.3 of the AEE and consider the Project is consistent with these provisions. I also consider that the Project is consistent with Policies 2.2.3, 2.2.4 and 2.2.6, which were not identified in the assessment.</p> <p>I also consider that the project is consistent with the provisions of the NPS-HPL 2022 which reflects a more recent policy direction in relation to highly productive soils.</p> <p>These provisions seek to safeguard the life supporting capacity of soils to provide for a wide range of primary activities and provide a resource for future generations.</p> <p>The policies focus on minimising fragmentation of versatile rural land and minimising development and where possible avoiding development which has the potential to inhibit use of versatile soils for primary production. While highly productive soils will be lost to the Project (between approximately 298ha) this is a small percentage (0.68%) given there is approximately 43,766ha of highly productive land in Horowhenua.</p> <p>I consider that the Project is consistent with these policies through minimising the Project footprint as far as practicable.</p>
Rural character and amenity	
Objective 2.4.1 Policy 2.4.13, Policy 2.4.17, Policy 2.4.18	<p>I agree with the assessment provided in section 68.4 of the AEE and consider the Project is consistent with these provisions.</p> <p>The focus of Policy 2.4.17 is to maintain and enhance the unique character and amenity values of the District, focusing on maintaining overall day time and night time noise conditions that are compatible with the rural environment.</p> <p>Construction noise will be managed through a CNVMP and appropriate mitigation is proposed to minimise noise at sensitive receptors once the Project is operating.</p>

	Construction traffic will be appropriately managed through a Construction Traffic Management Plan consistent with Policy 2.4.18.
Ecology and biodiversity	
Objective 3.2.1 Policy 3.1.6, Policy 3.2.2, Policy 3.2.3	<p>I agree with the assessment provided in section 68.5 of the AEE and consider the Project is consistent with these provisions.</p> <p>The Project avoids areas of significant indigenous vegetation and significant habitats of indigenous fauna within the Horowhenua District. A comprehensive ecological mitigation package is proposed and offset/compensation package which is to be implemented, and I consider that natural character will be maintained once the proposed measures to rehabilitate and restore the natural characteristics and qualities have been fully implemented.</p> <p>I note however the issue raised by Ms Julia Williams (Council's Landscape expert) with the proposal to extend natural character riparian restoration planting beyond the designation and into the wider stream and wetland landscape context on private property, and that should landowner approval not be obtained, the existing levels of natural will be reduced in all catchments by one level of magnitude.</p>
Landscapes and natural character	
Objective 3.1.1, Objective 3.3.1 Policy 3.1.3, Policy 3.1.6, Policy 3.1.7, Policy 3.3.3, Policy 3.3.4, Policy 3.3.5, Policy 2.1.2	<p>I agree with the assessment provided in section 68.6 of the AEE and consider the Project is consistent with these provisions.</p> <p>The Project has avoided outstanding natural features and landscapes from inappropriate use and development. The CEDF is intended to bring together the proposed landscape and natural character mitigation measures.</p> <p>The CEMP and operational stormwater treatment will manage construction and operational effects to protect natural character of lakes (eg. Lake Horowhenua), rivers and other water bodies.</p>
Natural hazards	
Objective 8.1.1, Objective 8.2.1 Policy 8.1.4, Policy 8.1.5, Policy 8.1.6, Policy 8.1.7, Policy 8.1.8, Policy 8.1.9, Policy 8.1.13, Policy 8.2.2, Policy 8.2.3	<p>Relying on the advice received from Mr John McArthur (Council's Flood expert (refer report at Appendix 6)) I do not agree with the assessment provided in section 68.7 of the AEE and do not consider the Project is currently consistent with these provisions in relation to flooding.</p> <p>As assessed by Mr McArthur, there is insufficient information provided to support statements included in Technical Assessment F, particularly in relation to whether or not changes to flooding characteristics are less than minor.</p> <p>These objectives and policies identify that development should not significantly worsen the risk of occurrence or the severity of natural hazards (in particular flooding) and that these effects should be avoided or mitigated.</p>

	Based on the advice of Mr McArthur I consider that the provision of further information is required to determine whether the Project is consistent with these objectives and policies.
Contaminated land	
Objective 9.2.1 Policy 9.2.3, Policy 9.2.4, Policy 9.2.5	<p>In general, I agree with the assessment provided in section 68.8 of the AEE and consider the Project is consistent with these provisions, noting that a PSI has been prepared.</p> <p>However, the PSI that has been prepared is not considered by Ms Sarah Newall (the Council's' Contaminated Land Expert) to be adequate as it does not provide a complete and accurate account of potentially contaminating current and historical land use activities over the Ō2NL Project area.</p> <p>However, I consider that the Project is consistent with this objective and policies, because Waka Kotahi will be seeking consents under the NES-CS as required, and proposed conditions (with amendment as identified by Sarah Newall (refer Appendix 11), will adequately address the identification, investigation and management of contaminated land.</p>
Land Transport	
Objective 10.1.1, Objective 10.2.1, Objective 10.3.1 Policy 10.1.3, Policy 10.1.4, Policy 10.1.7, Policy 10.1.8, Policy 10.1.13, Policy 10.2.2, Policy 10.3.12	<p>In general, I agree with the assessment provided in section 68.9 of the AEE and consider the Project is consistent with these provisions.</p> <p>The Project is important regional transport infrastructure and will have significant positive benefits in relation to improving resilience, safety, travel times.</p> <p>Policy 10.1.3 seeks that all new roads provide safe and convenient access for the community. For the most part this will be achieved for the majority of the Ō2NL Project corridor, with the exception of the Tara-Ika growth area, which I discuss below in relation to the objectives and policies relating to PC4 Tara-Ika.</p> <p>Policy 10.1.4 seeks to encourage development of pedestrian and cycle paths. The Project is generally consistent with this policy as a SUP is proposed as part of the Project.</p> <p>Policy 10.1.13 seeks to ensure that State Highways are a safe and efficient network. The Project is consistent with this policy.</p>
Network utilities	
Objective 12.1.1 Policy 12.1.2, Policy 12.1.3, Policy 12.1.5, Policy 12.1.6, Policy 12.1.8	I agree with the assessment provided in section 68.10 of the AEE and consider the Project is consistent with these provisions.
Public access to waterbodies	
Objective 4.2.1	I agree with the assessment provided in section 68.12 of the AEE and consider the Project is consistent with this objective.

Cross boundary issues	
Objective 14.1.1 Policy 14.1.2	I agree with the assessment provided in section 68.13 of the AEE and consider the Project is consistent with this objective and policy.
HDP PC4 (Tara-Ika)	
Objective 6A.1, Objective 6A.2, Objective 6A.3 Policy 6A.1.1, Policy 6A.1.2, Policy 6A.1.10, Policy 6A.2.2, Policy 6A.3.1, Policy 6A.3.2	<p>I do not agree with the assessment provided in section 68.14 of the AEE and do not consider the Project is currently consistent with these provisions.</p> <p>Policies 6A.1.1 and 6A.1.2 direct that all infrastructure and development provide the primary features shown on the Structure Plan 013. That Structure Plan specifically identifies the East-West Arterial (EWA) as a primary structure plan feature that needs to be provided.</p> <p>The assessment at section 68.14 states that PC4 is subject to appeal, therefore PC4 cannot be given full weight in the statutory assessment. It is my understanding that large parts of PC4 are not subject to appeal, including the policies referenced above and core aspects of the Structure Plan.</p> <p>The AEE also states at section 3.3.3 that <i>'As the East West Arterial will cross over Ō2NL it will require bridging, which will require RMA approvals. It is expected that the RMA approvals will be sought in the near future'</i>. I am not aware of any planned applications for approval of the EWA.</p> <p>At section 18.5 of the AEE it is noted that <i>'Further, from discussions with HDC it is understood that RMA approvals for the construction of an arterial road (known as the East-West Arterial) in the Tara-Ika Growth Area will be sought in the near future. This proposed East-West Arterial crosses the land required for the Ō2NL Project NoR and so approvals to allow its construction will be required from Waka Kotahi either under s176(1)(b) or s177(1)(a) of the RMA. As noted above, I am not aware of any planned applications for approval at the present time.</i></p> <p>I agree that the EWA will require bridging due to the presence of Ō2NL (if approved and once constructed) and approval from Waka Kotahi would be required if any person other than Waka Kotahi wished to consent or designate the EWA, however there have been no decisions made to my knowledge on when, or how, or by whom approvals for the EWA might be sought.</p> <p>Regardless of any approval process, and based on the advice of Mr McIndoe (the Councils' Urban Design expert), Mr Cullen (the Councils' Economic expert), Mr Kelly (HDC's Transport expert), and Ms Michala Lander (the Councils' Social Impact expert) the current proposed design arrangement of the Ō2NL Project fails to integrate transport and land use through lack of east-west connectivity, will create severance between the existing Levin east urban area and Tara-Ika town centre, will lead to increased vehicle dependency and consequent adverse</p>

	<p>health, social and environmental effects, and in this location will not contribute to a well-functioning urban environment or contribute to the outcomes sought by these provisions.</p> <p>As noted above I also do not consider that the Project is consistent with objectives and policies of the NPS-UD.</p> <p>I do however note my understanding that discussions regarding the EWA cross connection are ongoing between Waka Kotahi and HDC.</p>
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Kāpiti Coast District Plan Objectives and Policies

Provision	Comment
Tangata Whenua	
Objective DO-01, Objective DO-07 Policy ECO-P5	<p>I agree with the assessment provided in section 68.1 of the AEE and consider the Project is consistent with these provisions.</p> <p>Objective DO-01 seeks to work in partnership with tangata whenua. Tangata Whenua have been involved as project partners in considering the route options, route alignment, assessment process and assessment of effects.</p> <p>I note however that a number of submissions have been received from tangata whenua, including the Project Iwi partners, raising issues in relation to cultural effects and the proposed conditions. I understand that the requiring authority is working with these submitters to further refine the conditions to address the matters raised. It may be that further information is forthcoming in respect of the Iwi Project Partners and submitters views as to these effects and how they are to be addressed during the hearing process.</p>
Archaeology, historical heritage and wāhi tapu	
Objective DO-01, Objective DO-07 Policy ECO-P5, Policy SASM-P1, Policy HH-P7	<p>I agree with the assessment provided in section 68.2 of the AEE and consider the Project is consistent with these provisions.</p> <p>There is no identified historic heritage in the KCDC section that is directly affected by the Project. Accidental discovery protocols will be observed during construction works.</p>
Rural Productivity and soils	
Objective DO-06 RPROZ-P10, RPROZ-P11	<p>I agree with the assessment provided in section 68.3 of the AEE and consider the Project is consistent with these provisions. I also consider that the project is consistent with the provisions of the NPS-HPL 2022 which reflects a more recent policy direction in relation to highly productive soils.</p> <p>These provisions seek to safeguard soils, minimize fragmentation of versatile rural land and minimise development and where possible avoid development which has the potential to inhibit use of versatile soils for primary production. The Project has achieved this through minimising the Project footprint as far as practicable.</p>

Provision	Comment
Character and amenity values	
<p>Objective DO-011</p> <p>Policy RPROZ-P2, Policy EW-P1, Policy Noise- P3</p>	<p>I agree with the assessment provided in section 68.4 of the AEE and consider the Project is consistent with these provisions.</p> <p>The focus of this objective and policies is to maintain and enhance the unique character and amenity values of the District.</p> <p>Policy EW-P1: Earthworks seeks to avoid or mitigate erosion and off-site silt and sediment runoff to waterbodies. A CEMP will used to manage construction effects, including earthworks.</p> <p>Construction Noise will be managed through a CNVMP and appropriate mitigation is proposed to minimize noise at sensitive receptors once the Project is operating.</p>
Ecology and biodiversity	
<p>Objective DO-02</p> <p>Policy NE-P1, Policy NE-P3, Policy ECO-P2, Policy ECO-P3, Policy ECO-P4</p>	<p>I agree with the assessment provided in section 68.5 of the AEE and consider the Project is consistent with these provisions.</p> <p>A comprehensive ecological mitigation package is proposed and offset/compensation package which is to be implemented, and I consider that natural character will be maintained once the proposed measures to rehabilitate and restore the natural characteristics and qualities have been fully implemented.</p> <p>I note however the issue raised by Ms Julia Williams (Council's Landscape expert) with the proposal to extend natural character riparian restoration planting beyond the designation and into the wider stream and wetland landscape context on private property, and that should landowner approval not be obtained, the existing levels of natural will be reduced in all catchments by one level of magnitude.</p>
Landscapes, Features and Landforms	
<p>Objective DO-09</p> <p>Policy NE-P1, Policy NFL-P2</p>	<p>I agree with the assessment provided in section 68.6 of the AEE and consider the Project is consistent with these provisions.</p> <p>The Project has avoided outstanding natural features and landscapes from inappropriate use and development.</p> <p>The CEDF is intended to bring together the proposed landscape and natural character mitigation measures.</p>
Natural hazards	
<p>Objective DO-05</p> <p>Policy NH -P2, Policy NH-P3, Policy NH-P4, Policy NH-FLOOD-P12</p>	<p>Relying on the advice received from Mr John McArthur (Council's Flood expert (refer report at Appendix 6)) I do not agree with the assessment provided in section 68.7 of the AEE and do not consider the Project is currently consistent with these provisions in relation to flooding.</p> <p>As assessed by Mr McArthur there is insufficient information provided to support statements included in Technical Assessment F, particularly in relation to whether or not changes to flooding characteristics are less than minor.</p> <p>These objectives and policies identify safety and resilience of people and communities by avoiding increased exposure to risk from natural</p>

Provision	Comment
	<p>hazards. Flooding is identified due to the low-lying nature of the District.</p> <p>Based on the advice of Mr McArthur I consider that the provision of further information is required to determine whether the Project is consistent with these objectives and policies.</p>
Contaminated land	
<p>Objective DO-O10</p> <p>Policy CL-P1, Policy CL-P3</p>	<p>There is no assessment provided against this objective or policies in relation to contaminated land.</p> <p>At section 68.8 the assessment states: <i>'As no land directly affected by the Project that is potentially contaminated has been identified in the Kapiti Coast District, the contaminated land provisions of the KCDP are not relevant'</i>.</p> <p>In my view an assessment should have been undertaken against this objective and policies because the PSI that has been prepared is not considered by Ms Sarah Newall (the Councils' Contaminated Land Expert) to be adequate as it does not provide a complete and accurate account of potentially contaminating current and historical land use activities over the Ō2NL Project area.</p> <p>Objective DO-O10 states <i>'prevent or mitigate adverse environmental effects, including risks to human health and the environment, arising from past, present or future activities involving contaminated land'</i>.</p> <p>This objective is relevant to the Project and therefore it should have been assessed. However I consider that the Project is consistent with this objective and policies, because Waka Kotahi will be seeking consents under the NES-CS as required, and proposed conditions (with amendment as identified by Sarah Newall (refer Appendix 11), will adequately address the identification, investigation and management of contaminated land.</p>
Infrastructure, access and transport	
<p>Objective DO-013, Objective DO-014</p> <p>Policy INF-PNU-P16, Policy INF-GEN-P1, Policy INF-GEN-P2, Policy INF-GEN-P3, Policy INF-GEN-P4, Policy INF-GEN-P9, Policy INF-MENU-P18, Policy TR-P4</p> <p>and also TR-P3, TR-P1, TR-P6, TR-P7</p>	<p>In general I agree with the assessment provided in section 68.9 of the AEE and consider the Project is consistent with these provisions.</p> <p>I note that the assessment did not consider that the following policies, which I also consider are relevant:</p> <p>TR-P1: Integrated Transport and Urban Form TR-P3: An Efficient and Economic Transport Network TR-P6: Safety TR-P7: Cycling, Walking and Bridleway Links and Safety</p> <p>The Project is important regional transport infrastructure and will have significant positive benefits in relation to improving resilience, safety, travel times.</p> <p>However, in relation to the Taylors Road interchange, I consider that the Project may not be consistent with these Objective and Policies,</p>

Provision	Comment
	based on the assessment by Mr David Dunlop (Appendix 8) and as discussed in Section L of my report.
Network utilities	
Objective DO-013 Policy INF-GEN-P1	I agree with the assessment provided in section 68.10 of the AEE and consider the Project is consistent with these provisions.
Economic Vitality	
Objective DO-015, Objective DO-017	I agree with the assessment provided in section 68.11 of the AEE and consider the Project is consistent with these provisions. The Project will generate positive economic effects.
Urban Form and Development	
Policy UFD-P10: Cycleway, Walkway and Bridleway Network	<p>There is no assessment provided against this policy in relation to the cycleway, walkway and bridleway network.</p> <p>Policy UFD-P10 states: <i>‘Council will ensure the continued development and maintenance of a public cycleway, walkway and bridleway network as part of the wider open space network in co-operation with relevant stakeholders, linking residential areas with open space, schools, commercial and community facilities, public transport nodes and important natural areas’.</i></p> <p>This policy recognises that the Council, in conjunction with interested community groups, individuals and landowners, has developed an indicative cycleway, walkway and bridleway (CWB) network.</p> <p>I consider that the Project is consistent with this policy in part, as a SUP will be provided for the entire length of the Ō2NL Project.</p> <p>I note however that 19 submissions that request the SUP be converted into a multiuse pathway to accommodate a bridleway as it has not been included as part of or separate to the SUP. Ms Michala Lander (Council’s Social Impact expert) considers that safety of equestrian riders should be considered as part of the Project, and that a recreation assessment of horse riding in the region be undertaken by Waka Kotahi, to confirm the location of equestrian facilities and any effects of the Project on them, and whether inclusion of a bridleway is practicable for the Project. Based on Ms Lander’s advice I am of the view that this assessment should be undertaken.</p>

L. ACTUAL AND POTENTIAL EFFECTS ON THE ENVIRONMENT

68 In the following paragraphs I consider the AEE and the technical expert reports in concluding my overall assessment of the actual and potential effects, including

positive effects, on the environment of allowing the NoR, having regard to the relevant provisions of the above statutory documents identified in section K of this report.

69 These potential effects are:

- (a) Positive effects
- (b) Noise and vibration effects;
- (c) Effects of air quality;
- (d) Stormwater and water quality effects;
- (e) Terrestrial and aquatic ecology effects;
- (f) Hydrology/flooding natural hazard effects;
- (g) Contaminated land effects;
- (h) Landscape and visual effects;
- (i) Urban design effects;
- (j) Economic effects;
- (k) Social impact effects;
- (l) Transport and traffic effects;
- (m) Effects on tangata whenua and cultural values; and

Positive Effects

70 The Requiring Authority has addressed positive effects of the NoR in the AEE.¹⁵ The most significant positive effects of the Ō2NL Project are considered to be the transport related, including:

- a) A safer, more efficient transport network;
- b) Improved network resilience;
- c) Improved connectivity and travel time benefits, modal choice and recreational benefits through the provision of the shared use path;
- d) Reduced delays on the state highway network and for side roads that access the existing state highways;
- e) Supporting regional economic activities and productivity including reductions in travel time for trips between Ōtaki and Levin, and more widely in relation to journey across the region;

¹⁵ Volume II AEE, Part G: Assessment of Effects on the Environment

- f) Positive impacts of construction related expenditure, with operation of the project helping to stimulate population and economic growth in the medium to long term, and enhancing the performance of the Levin town centre.

71 Under section 171(1B) of the RMA, 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'*.

72 The Project proposes a comprehensive offset and compensation package to address residual effects on terrestrial and wetland ecology which will result in an overall terrestrial and wetland biodiversity gain. Permanent freshwater ecology habitat loss will be offset where they are not able to be managed at the site of impact by undertaking riparian fencing and revegetation at other locations in affected catchments. This will result in no net loss in freshwater ecology function across the Project.

73 I concur with the Requiring Authority's assessment of positive effects of the Project discussed in the AEE Part G, for the reasons I have set out above.

Noise and vibration effects

74 The AEE¹⁶ and the Noise and Vibration Technical Assessment¹⁷ considers the construction and operational noise and vibration effects of the Project. The technical assessment and Waka Kotahi *"District Councils Response to combined request for information under section 92 Final"* dated 22 December 2022 (specifically the noise and vibration section, Responses 155 to 161) has been reviewed by Siiri Wilkening (Marshall Day Acoustics) on behalf of HDC and KCDC (**Appendix 3**), and my assessment is informed by Ms Wilkening's section 198D report.

75 The receiving environment for the Ō2NL Project predominantly rural communities from North Levin, Levin East, Ohau East, Manakau, and North Ōtaki, and it is noted that in some areas the existing environment is influenced by local and distant traffic noise (including from SH1 and State Highway 57), while in other areas at certain times of the day, there may be few man-made sounds, with generally little noise from

¹⁶ Volume II – Assessment of Effects on the Environment, section 42, pages 218 - 232

¹⁷ Volume IV – Technical Assessment B: Noise and Vibration

farming activities in the rural area and therefore the ambient noise levels are generally low.

- 76 The AEE describes the assessment methodology used to assess potential adverse effects of operational and construction road noise and road traffic vibration and then goes on to evaluate potential mitigation measures with reference to NZS 6803: 1999 Acoustics – Construction noise and NZS 6806¹⁸ to assess road traffic noise and vibration effects and the WHO Guidelines in relation to assessing long-term health effects¹⁹.
- 77 Ms Wilkening considers that the overall assessment undertaken of the construction noise and vibration is high level with little specifics given in terms of mitigation options that may be adopted, because no contractor has been engaged. However, Ms Wilkening considers that the indicative noise levels predicted are likely to be in the correct range to draw on for the assessment of effects.
- 78 Ms Wilkening considers that the assessment of traffic noise is extensive and appropriate for a project of this nature.
- 79 In assessing the noise and vibration effects from construction and operation of the Project, Ms Wilkening’s assessment notes²⁰:
- a) Construction noise and vibration is proposed to be managed through a well understood and tested process of Construction Noise and Vibration Management Plan (CNVMP) and Schedules.
 - b) Traffic vibration is not an issue with new well-constructed roads, and additional assessment or conditions is not required.
 - c) The outcomes of the operational noise assessment appear reasonable and as expected. The proposed mitigation to address operational traffic noise, being high performing low noise road surface (EPA7 50mm) and some low height barriers, appropriately manages the actual and potential noise effects from the operation of the new highway.

¹⁸ New Zealand Standard NZS 6806:2020 Acoustics – Road-traffic noise – new and altered roads (“NZS 6806”)

¹⁹ World Health Organisation ‘Environmental Noise Guidelines for the European Region (2018)’ (“WHO Guidelines”)

²⁰ Section 198D report, Ms S Wilkening, para 16

- d) Overall, traffic noise levels are predicted to reduce slightly to noticeably for a large population adjacent to the existing SH1 but will increase significantly for Protected premises and facilities (PPFs) that are currently remote from manmade noise sources. Ms Wilkening concurs with Mr Michael Smith, the noise and vibration expert for the Requiring Authority, that this is to be expected for a project like this where a new road is constructed in a rural area, however the residual effects are overall acceptable provided the mitigation proposed is implemented.
- e) Amendments to conditions are recommended²¹.

80 Ms Wilkening has reviewed the proposed construction and operational noise and vibration conditions and has suggested amendments as follows:

- a) Amendments to the conditions to ensure the CNVMP process proposed to manage construction noise and vibration will be robust (Conditions DNV1 to 4).
- b) The timeframe to install the low road noise surface specified in DRN1 be amended to 12 months from the opening of the Project, and other minor amendments to this condition.
- c) Amendment to DRN4(b) to require a shorter timeframe (3 months) to undertake a post construction review.
- d) Inclusion of a new condition requiring maintenance of structural noise mitigation measures (barriers and road surface).
- e) A requirement to provide an acoustic landscape bund adjacent to the Tara-Ika Urban Growth Area in order to provide additional noise level reduction to the future residential area of Tara-Ika.

81 24 submissions have raised concerns in relation to noise and vibration effects resulting from construction and operation of the Ō2NL Project²². Ms Wilkening has reviewed these submissions and considers that the construction noise limits proposed will appropriately allow for construction to occur while allowing rest and sleep periods

²¹ Section 198D report, Ms S Wilkening, paras 59 to 65

²² Submission No.s 1, 2, 3, 8, 9, 10, 11, 20, 22, 23, 25, 29, 36, 40, 47, 48, 49, 53, 60, 68, 71, 72, 77, 79

for neighbouring residents. Ms Wilkening also considers that the CNVMP process will appropriately manage the construction noise and vibration effects.

82 Ms Wilkening also considers that the proposed mitigation (through the use of low noise road surface and limited barriers) will adequately address concerns raised by submitters relating to operational road traffic noise and provide a good level of certainty in terms of outcome.

83 However Ms Wilkening considers that there would be an acoustic benefit (ie. additional noise reduction) to future residents in the Tara-Ika Urban Growth Area resulting from the installation of a landscape bund along the interface with Tara-Ika and the Ō2NL Project²³. Currently the Ō2NL Project does not propose a landscape bund in this location. The landscaping bund and its location would need to be assessed by other however, as there may also be other impacts to consider (for example in relation to visual amenity, urban design and cultural effects).

84 It is my view that, with the amendments to conditions recommended by Ms Wilkening, the actual and potential noise and vibration effects during the construction and operation of the Project can be suitably managed. Therefore, I consider the Project is acceptable in regard to effects associated with noise and vibration.

Air Quality Effects

85 There is the potential for effects on air quality from the construction and operation of the Project, primarily in the form of dust generated as a result of bulk earthworks. The Requiring Authority has addressed these issues in the AEE²⁴ and Technical Assessment C²⁵. A number of submitters have raised concerns regarding the generation of dust generation during construction and the potential effects on domestic roof water supply²⁶.

86 Mr Peter Stacey has assessed the potential effects of discharges to air arising from the Ō2NL Project on behalf of both the Regional and District Councils²⁷ (**Appendix 12**). While discharge permits from the Regional Councils for the discharge of contaminants to air are being sought, the effects on air quality are relevant to the

²³ Section 198D report, Ms S Wilkening, para 84

²⁴ Volume II Assessment of Environmental Effects, Section 43, pages 232-237

²⁵ Volume IV, Final Technical Assessment C – Air Quality

²⁶ Submission No.s 1, 2, 8, 9, 10, 11, 22, 23, 25, 29, 36, 40, 47, 48, 49, 52, 60, 66, 70, 73

²⁷ Combined s.87F and s.198D report, Mr Peter Stacey – Air Quality

consideration of the NoR in relation to the section 171 RMA matters and the actual and potential effect of allowing the activities for which designations are sought.

87 Mr Stacey considers that the primary potential air discharge from the construction of the Project will be dust and the nuisance dust emissions generated from the large scale earthworks, and I concur with this conclusion²⁸.

88 Mr Stacey's assessment of air quality effects notes:

- a) The Applicant has appropriately characterised the existing environment for the purposes of informing the air quality assessment²⁹.
- b) In relation to existing air quality, the Applicant has taken a conservative approach (ie. overestimation) in estimating ambient concentrations, which provides a conservative baseline against which to assess the change in air quality.
- c) The Applicant has appropriately captured within the assessment all the sensitive receptors within 200m of the designation. Consideration of potential receptors beyond 200m is not required because the effects beyond this distance are unlikely, as dust will settle out of the air within this distance and proposed mitigation as detailed in the Construction Air Quality Management Plan ("CAQMP") will reduce dust discharges.
- d) For the approximately 130 properties within 50m of the proposed designation boundary, dust nuisance effects during construction (even with the currently proposed mitigation measures) are likely to still be more than minor, and these residents are likely to notice increased dust levels and potentially be annoyed³⁰.
- e) District Council planning objectives and policies will be met if compliance with conditions can be achieved (eg. Proposed regional condition RAQ1(a) 'that discharges to air from works authorised by these resource consents must not cause noxious, dangerous, offensive or objectionable effects at any point beyond the boundary of the Project Area'). However, Mr Stacey notes that this

²⁸ Combined s.87F and s.198D report, Mr Peter Stacey, para 45

²⁹ Combined s.87F and s.198D report, Mr Peter Stacey, para 31

³⁰ Combined s.87F and s.198D report, Mr Peter Stacey, para 46(f)

type of condition can be difficult for regulatory authorities to enforce, as it is generally triggered after some form of effect has already occurred³¹.

- f) The change in air quality associated with air pollutants related to vehicle emissions will reduce in existing populated areas adjacent to existing SH1 (such as Ohau and Levin) due to a reduction in traffic volumes. For areas within 200m of the Ō2NL Project, there is predicted to be a relatively small increase in the ambient concentration of air pollutants but this is predicted to be below the relevant human health air quality assessment criteria and well below levels that could cause adverse effects.

89 Mr Stacey considers that the methodology adopted in the Air Quality Assessment and measures recommended by Mr Andrew Curtis, the Requiring Authority's Air Quality expert, to control construction dust emissions are largely consistent with industry best practice.

90 However Mr Stacey does not agree with Mr Curtis in relation to frequency of dust monitoring during construction. Mr Stacey consider that continuous dust monitoring should be undertaken, and not just in response to complaints/concerns received from residents.

91 Mr Stacey considers that there should be consent conditions which require measures to identify and respond to instances where dust has created some sort of nuisance effect, i.e. triggers to instigate the cleaning of properties impacted by dust. This will address one of the key issues raised by submitters in relation to dust affecting domestic roof water collection systems.

92 In Mr Stacey's opinion, the implementation of a Construction Air Quality Management Plan ("CAQMP") will reduce the potential for dust emissions to cause noxious, dangerous, offensive or objectionable effects on the majority of sensitive receptors (ie. those more than 50m from the designation boundary), however for those properties within 50m of the proposed designation boundary, specific remedial measures such as house cleaning, need to be employed. Mr Stacey considers that it is appropriate to include a specific consent condition specifying that these remedial measures to be undertaken.

³¹ Combined s.87F and s.198D report, Mr Peter Stacey, para 83

- 93 Mr Stacey also considers that the conditions should better identify triggers for identifying that dust is not being adequately controlled in order to trigger additional dust mitigation/contingency measures³².
- 94 Mr Stacey concurs with Mr Curtis that construction effects can in principle be managed via a CAQMP. However, as a draft CAQMP has not been provided with the application, Mr Stacey is unable to determine whether it is possible for effects to be managed to an appropriate level. Therefore Mr Stacey considers that the conditions should be strengthened to provide for an appropriate level control of air quality effect(s) across all phases of the Ō2NL Project.
- 95 Mr Stacey recommends that the following additional triggers be developed and included as stand-alone consent conditions³³:
- a) A requirement to undertake dust monitoring at high-risk locations (ie. receptor locations within 50 m of dwelling or crops sensitive to dust).
 - b) The use of dust monitoring triggers used to instigate investigations and implement contingency measures.
 - c) A requirement to upgrade roof-collected drinking water systems for properties within 200 m of the Project Area.
 - d) Develop a procedure to undertake regular visual dust inspections and identify triggers for the implementation of appropriate remediation activities, such as regular house cleaning, laundry services etc.
- 96 Mr Stacey has relied on the technical advice of Mr Lambie when considering the effects of dust on plants.³⁴ Mr Lambie is of the view that there are no areas which are particularly sensitive to dust deposition, and that provided dust is managed below nuisance thresholds, the effect is likely to be minor.
- 97 Mr Stacey has also relied on the technical advice of Ms Sarah Newall when considering the effects resulting from contaminated land disturbance³⁵. Should contaminated land need to be disturbed, the Requiring Authority will need to apply for

³² Combined s.87F and s.198D report, Mr Peter Stacey, para 111

³³ Combined s.87F and s.198D report, Mr Peter Stacey, para 84

³⁴ Combined s.87F and s.198D report, Mr Peter Stacey, para 71

³⁵ Combined s.87F and s.198D report, Mr Peter Stacey, para 72

consent under the NESCS, and appropriate controls will be imposed under these consents to manage dust containing contaminated material.

- 98 Concerns raised by submitters relate to dust deposition contaminating roof collected water supply, dust causing nuisance, amenity or health effects, and pollution from vehicles once the project is operational.
- 99 Relying on Mr Stacey's assessment, I consider that subject to the recommended amendments to the proposed regional consent conditions, submitter concerns will be adequately addressed and the effects of dust during construction will be able to be appropriately managed, and effects will be less than minor.

Water quality effects

- 100 The Requiring Authority has addressed water quality effects in the AEE³⁶ and in a number of Technical reports being: Technical Assessment H: Water Quality and Technical Assessment K: Freshwater Ecology³⁷, and the Design and Appendix 4 Design and Construction Report³⁸.
- 101 While the responsibility under the RMA to manage the quality and quantity of surface water and groundwater falls substantially to the Regional Councils, the District Councils have a role to play in the management of activities on water and the surface of water, and ensuring the important values of waterways, being a natural and physical resource of the district, are effectively protected.
- 102 Ms Justine Bennet has assessed the potential water quality effects arising from the Ō2NL Project on behalf of HDC and KCDC (**Appendix 5**). Ms Bennett's report is therefore focussed on the consideration of effects on water quality with regard to land use effects on water bodies, the measures proposed to control and mitigate effects from land disturbance, consideration of the Project in relation to the NPS Freshwater Management and relevant objectives and policies of the District Plans.
- 103 Overall, Ms Bennett considers that the water quality assessment completed to support the NoR is satisfactory, and the erosion and sediment controls proposed generally represent industry good practice.

³⁶ Volume II, AEE, Section 48: Surface Water Quality, pages 267-269

³⁷ Volume IV, Final Technical Assessment H – Surface Water Quality

³⁸ Volume II, AEE, Appendix 4: Design and Construction Report dated July 2022 including Appendix 4.3 ESC Technical Assessment, of that report.

- 104 Ms Bennett supports the use of a treatment train approach for erosion and sediment control but considers that additional controls should be provided to better protect sensitive areas such as in proximity to sensitive aquatic environments along the Waiauti, Waikawa, Kuku and the Ohau watercourses or locations for higher risk activities such as fuel or chemical storage or concrete batching plants. These should be included in the overarching Erosion and Sediment Control Plan and detailed in the SSES CPs.
- 105 One area of uncertainty that Ms Bennett identifies is in relation to peak earthworks management. Ms Bennett considers that further detail is required with regard to how open and susceptible earthworks areas will be managed during peak earthworks, what additional levels of control are to be provided to protect more sensitive receiving environments and how the erosion and sediment control approach will evolve, adapt and change in relation to performance, effects on the receiving environment or unforeseen circumstances.
- 106 Ms Bennett also notes that there are no proposed designation conditions that address water quality matters and considers that designation conditions are required to address water quality impacts relating to land disturbance.
- 107 Ms Bennett also notes that ‘establishment works’ are excluded from the definition of ‘construction activities’, and therefore establishment works are not bound by the requirements of proposed condition RES1. In Ms Bennett’s view, because establishment works can involve removal of vegetation, creation of haul roads and set up of construction yards, all of which require land disturbance, establishment works should be subject to appropriate erosion and sediment control management and review, similar to that proposed to be required for construction activities (as per condition RES1).
- 108 Ms Bennett recommends that a range of matters be addressed either as new conditions in both regional council and designation conditions, amendments to proposed conditions or updates to management plans as follows:
- a) Include an adaptive management approach for erosion and sediment control.
 - b) Provide a condition requiring site specific erosion and sediment control plans and control devices to be in place to accommodate “Establishment Works” as well as “Construction Works” to enable land disturbance associated with haul

roads, site establishment, veg clearance and stripping to be included and managed appropriately.

- c) Amend RFE4 to clarify monitoring requirements for event-based monitoring and align timing of reporting with RES9.
- d) Include a minimum baseline monitoring period (eg. 2-3 years) prior to construction.
- e) Include a condition requiring Council certification (eg. engineering sign-off) of the design and Operation and Maintenance Plan.
- f) Include management of contaminants resulting from spills on the expressway, and litter management in the Operation and Maintenance Plan.

109 I consider that subject to additional clarification on the matters identified above and amendments to proposed conditions, water quality effects, particularly in relation to land disturbance and ongoing stormwater treatment and management will be able to be appropriately managed, and effects will be less than minor.

Terrestrial and Freshwater Ecology effects

110 An assessment of the terrestrial and freshwater ecology effects of the Ō2NL Project is contained in the AEE³⁹ and Technical Assessment J: Terrestrial Ecology, and Technical Assessment K: Freshwater Ecology⁴⁰.

111 Mr Bryn Hickson Rowden has assessed the potential effects on terrestrial and freshwater ecology arising from the Ō2NL Project on behalf of HDC and KCDC (**Appendix 1**).

112 Mr Rowden considers that the main areas of terrestrial and freshwater and ecological value, where the effects on ecology cannot be avoided, remedied or mitigated, are detailed thoroughly in the Ecological Reports, with the exception of the long-tailed bat methodology. Mr Rowden considers that the proposed offsetting package will adequately manage effects.

³⁹ Volume II Assessment of Environmental Effects, Section 50: Terrestrial Ecology, pages 272-279 and section 51: Freshwater Ecology, pages 280-285

⁴⁰ Volume IV, Final Technical Assessment J – Terrestrial Ecology and Final Technical Assessment K – Freshwater Ecology

113 Mr Rowden considers that there are a number of gaps in the proposed conditions relating to the regional consents that require amendment to ensure proposed ecological outcomes are achieved.

114 In relation to terrestrial ecology:

a) Mr Rowden considers that, generally, Technical Assessment J: Terrestrial Ecology encompasses a thorough assessment of terrestrial ecological effects and the methodology applied (EIANZ guidelines) is appropriate (aside from the long-tailed bat methodology as noted in c) below).

b) The proposed biodiversity offsets are appropriate and suitable.

c) One methodological query remains outstanding regarding long-tailed bat surveys. Mr Rowden does not consider the response provided by Waka Kotahi in the section 92 Further Information response is sufficient. Mr Rowden notes the following:

- i. Generally, the methodology for potential indigenous bat values is considered appropriate (following Department of Conservation protocols). However only a single Automatic Bat Monitor (ABM) deployment was undertaken.
- ii. The rationale for undertaking a single ABM deployment during the bat active period was not addressed in the assessment. It is noted that the accepted methodology for long-tail bat detection is in spring/early summer and late summer/autumn.
- iii. The response from Waka Kotahi regarding the single deployment did not adequately address the rationale for diverting from accepted methodology. Waka Kotahi's response noted that the rationale for not completing a second detection deployment was as a result of not detecting any bats in spring/early summer. Waka Kotahi's initial assessment specifically notes that the absence of records does not preclude an assessment for bats being undertaken.
- iv. The conclusion that the potential roosting habitats that exist within the project area are not currently used by indigenous bats (paragraph 121, Technical Assessment J) is not supported by the methodology. As the methodology for establishing the value of indigenous bats with the Project is incomplete, the potential effects on bats or the management of them is therefore not completely established.

- v. A second ABM deployment in late summer/autumn should be undertaken to ensure (in line with best practice) that roosting habitats are not currently used by indigenous bats. However, Mr Rowden notes that discovery of long tailed bats and roost use within the designation may not alter the level of effects predicted because there is an effects management process that should be employed to avoid bat harm regardless of ABM detection results.

115 In relation to freshwater ecology:

- a) Mr Rowden considers that Technical Assessment K: Freshwater Ecology presents a thorough assessment of freshwater ecological values and likely effects and the report appropriately addresses the freshwater management regime.
- b) Methods utilised to undertake the assessment of freshwater ecology (EIANZ guidelines) is appropriate.
- c) Mr Rowden notes that the ecological assessment of effects for sediment release relies on catchment modelling from Technical Assessment H (Water Quality) and therefore defects are contingent on the accuracy of that modelling.
- d) Also in relation to sediment release, Mr Rowden notes that any change to flood modelling and the outputs may have implications on the ecological effect level.

116 Mr Rowden has suggested that a number of amendments be made to the regional consent conditions, to strengthen the effects management measures in relevant management plans to ensure the proposed biodiversity outcomes are met. Mr Rowden has suggested amendments to regional conditions RTE1, RTE2, RTE5, RTE6, RTE7, RFE1, RFE2, REM4, REM6 and REM12. I understand Mr Rowden has discussed his recommendations with the Regional Council terrestrial and freshwater experts and his recommendations are consistent with their assessments.

117 Mr Rowden also notes that a number of submissions contain reference to both terrestrial and ecological matters. The majority of matters raised in submissions that relate specifically to ecological impacts can, in Mr Rowden's opinion, be addressed by conditions and the relevant management plans, or have been adequately addressed in the Technical Assessments J and K of the AEE.

118 I consider that subject to additional clarification on the long-tail bat monitoring and amendments to proposed conditions, terrestrial and freshwater ecology effects will be able to be appropriately managed, and effects will be less than minor.

Hydrology/flooding natural hazard effects

119 An assessment of the hydrology and flooding effects of the Ō2NL Project is contained in the AEE⁴¹ and Technical Assessment F⁴². Mr John McArthur has assessed the potential effects of the Ō2NL Project in respect of hydrology/flooding natural hazards on behalf of HDC and KCDC (**Appendix 6**).

120 Mr McArthur considers that he does not have sufficient information to assess the NoR.

121 The key findings of Mr McArthur's review are:

- a) The flood impact of the Ō2NL Project on existing 0.5% AEP design storm conditions needs to be considered in order to address HDC Policy requirements⁴³.
- b) The less than minor effects proposed beyond the designation included in Table F.4 are considered excessive. In line with KCDC's precautionary and risk-based approach, these should be reduced to $\leq 0.01\text{m}$ which reflects the computational accuracy expected in the type of model used for the Ō2NL Project.
- c) There is insufficient information provided to support statements included in Technical Assessment F, particularly in relation to whether or not changes to flooding characteristics are less than minor.

122 Mr McArthur considers that the following information is required:

- a) Model a 0.5% AEP (1 in 200 year) design storm event to confirm whether or not adverse flooding effects occur as a result of the Ō2NL Project.
- b) Review Table F.4 against KCDC's requirement of no increase in flood level.

⁴¹ Volume II Assessment of Environmental Effects, section 47, pages 262-266

⁴² Volume IV, Final Technical Assessment F – Hydrology and Flooding

⁴³ HDC District Plan, Chapter 8: Natural Hazards, Policies 8.1.4, 8.1.5 and 8.1.13

- c) Provide velocity difference mapping of the modelled area outside the designation.
- d) Provide additional information to support the statement by Waka Kotahi that a change in velocity ≤ 0.5 m/s will have a less than minor effect relative to the existing environment.
- e) Further information is required to quantify the duration of flood inundation in the modelled area outside of the designations for both the 10% and 1% AEP events.

123 At this time, given the further information that is required, I am unable to make any conclusion as to the nature and extent of the effects of the Ō2NL Project on hydrology/flooding natural hazards and whether the effects are able to be avoided, remedied or mitigated.

Contaminated land effects

124 An assessment of contaminated land effects is contained in the AEE⁴⁴ and Technical Assessment I⁴⁵. Ms Sarah Newall has assessed the potential effects of site contamination arising from the Ō2NL Project on behalf of both the Regional and District Councils (joint section 87F and section 198D report) (**Appendix 11**).

125 The Requiring Authority is not, as part of the current process, seeking consents under the Resource Management (National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NES-CS), however the AEE and Technical Assessment I set out the approach proposed by the Requiring Authority to address site contamination matters beyond the current NoR and consenting phase. Waka Kotahi propose to seek these approvals later, as required, once further investigations have been completed.

126 Ms Newall considers that this is a reasonable approach to deal with site contamination matters.

127 Ms Newall has therefore assessed the adequacy and completeness of the conclusions and recommendations in the Technical Assessment completed in relation to identification of potentially contaminated land.

⁴⁴ Volume II Assessment of Environmental Effects, Section 49, pages 270-272

⁴⁵ Volume IV, Final Technical Assessment I – Contaminated Land

128 Ms Newall's opinion is that the Preliminary Site Investigation (PSI) that has been completed (and included as Appendix I.1 of Technical Assessment I) is not adequate, for the following reasons:

- a) The information reviewed and investigation work completed to date is unlikely to provide a complete and accurate account of potentially contaminating current and historical land use activities over the Ō2NL Project area because:
 - (i) regional council SLUR/SAHS databases will not be complete,
 - (ii) the aerial imagery reviewed has gaps of several decades, and
 - (iii) a full site walkover was not completed.

- b) Only thirty-five 'potential HAIL sites' (five outside, but in the vicinity or adjacent to the proposed designation, and thirty within the proposed designation) have been identified in the PSI, which raises a question as to whether all potential HAIL sites within the project area have been identified and therefore whether the PSI achieves the purpose of the CLMG1⁴⁶.

129 In Ms Newall's opinion the PSI is incomplete, therefore the scope of proposed regional condition REW4, which specifically lists sites requiring further investigation (DSI) based on the findings of the PSI (9 sites are currently listed), may also be incomplete and therefore there is a risk that there could be HAIL sites that are not identified, investigated, or appropriately consented for the Ō2NL Project.

130 An unexpected discovery protocol is proposed to investigate areas of contamination may be encountered during the Project, however Ms Newall considers that while having an unexpected discovery protocol is standard practice for large-scale earthworks projects such as Ō2NL, it is not a substitute for identifying HAIL sites through site investigations.

131 Ms Newall considers that further work is required to achieve greater certainty about the presence and location of HAIL sites within the Ō2NL Project corridor. The PSI should be updated following additional work, including asbestos surveys, and a full site walkover.

132 Ms Newall has proposed amendments to regional consent condition REW4, to clearly set out the process for addressing contaminated land. Ms Newall considers that as

⁴⁶ MfE's Contaminated Land Management Guideline Nos 1 'Reporting on contaminated sites in New Zealand', revised 2021 (CLMG1).

site contamination is a matter relevant to both the Regional and District Councils, REW4 should sit within both the regional and designation condition sets.

- 133 I agree with Ms Newall's assessment. While NES-CS consents are not currently being sought by the Requiring Authority, I consider that it is important that the process for addressing contaminated land be clearly set out in conditions, and this appropriately sits within the proposed regional condition REW4, which should also be included as a designation condition.

Landscape and visual effects

- 134 The Requiring Authority has addressed landscape and visual effects in the AEE⁴⁷, Technical Assessment D⁴⁸ the CEDF⁴⁹ as well as providing Planting Concept Plans: Indicative Typology and Photo Simulations⁵⁰.
- 135 The AEE acknowledges that the Project will have both positive and adverse landscape, visual amenity, and natural character effects. The Project will have a significant effect on the landscape, visual amenity and natural character due to the size of the Project area and scale of the works.
- 136 Ms Julia Williams has undertaken an assessment of the landscape, visual and natural character aspects of the Project on behalf of the Regional Councils and the District Councils. Ms Williams has prepared both a section 87F report and a section 198D report (section 198D report attached at **Appendix 2**). Matters relating to landscape, visual and natural character in relation to the Regional Consents have been addressed by Mr Mark St Clair in his section 87F planning report. However it is acknowledged that there is crossover between the regional and district landscape, visual and natural character matters, as noted by Ms Williams in her section 198D report.
- 137 In relation to landscape, visual amenity and natural character effects, Ms Williams concludes that:

⁴⁷ Volume II Assessment of Environmental Effects, Section 44, pages 238-248 (Landscape and Visual) & Section 45, pages 249-254 (Natural Character)

⁴⁸ Volume IV – Technical Assessment D – Landscape Visual and Natural Character

⁴⁹ Volume II, Appendix Three – CEDF

⁵⁰ Volume III – Drawing Set, 09 – Planting, 10 – Photo Simulations

- a) The methodology used to assess the existing landscape and natural character levels, and to assess the effects of the Project on landscape, natural character and visual amenity values is appropriate.
- b) The package of design principles and mitigation measures across the Ō2NL Project area set out in the CEDF and supplemented by the Planting Concept Plans are supported.
- c) The measures Mr Lister, Waka Kotahi's Landscape expert, has outlined to provide for integration between the O2NL Project and Tara-Ika are appropriate, and the measures that could be adopted to further mitigate impacts on amenity values of the planned urban development and its connectivity with Levin are supported.
- d) The provision of an integrated interface between the Ō2NL Project and Tara-Ika, and connectivity between Tara-Ika and the Levin urban area west of the highway, is critical to achieving positive landscape and visual amenity outcomes in this area.
- e) In most instances, visual mitigation for properties will be provided by the wider landscape design within the designation, however the Project will have significant adverse visual effects for some residents.
- f) Natural character in each catchment will be maintained once the proposed measures to rehabilitate and restore the natural characteristics and qualities have been fully implemented.
- g) The proposal to extend natural character riparian restoration planting beyond the designation and into the wider stream and wetland landscape context on private property (if landowner agreement is provided) promotes the restoration of the waterways and wetlands is supported. However, Ms William's notes that if landowner approval cannot be secured, the existing levels of natural will be reduced in all catchments by one level of magnitude.
- h) She supports the proposal to recontour and rehabilitate material supply sites, and recontour and restore spoil disposal sites.

138 There are however several areas where Ms Williams disagrees or identifies inconsistencies within the assessment. These are:

- a) There is an inconsistency, which is not justified in terms of effects, between the recommendation that visual mitigation be provided within the designation for those properties assessed as having adverse visual effects that are moderate or greater, but only provided to affected properties outside the designation where planting within the designation is not sufficient to reduce effects to moderate or less.
- b) The Planting Concept Plans: RMA Purpose Type is confusing, and the rationale for the labelling has not been explained.
- c) Natural character planting has been bundled with landscape and visual planting and addressed through designation condition DLV1. However Ms Williams considers that the natural character component should be removed from DLV1 and instead addressed in regional resource consent conditions and incorporated into the Schedule 7: Ecological Management Plan. Ms William's discusses this further in her section87F report at paragraphs 49 and 69 – 73.
- d) The process of making available design review audits to the Councils on request provides no formalised scope for questioning, comment and/or certification by Councils. District and Regional Councils should have a role in certifying the CEDF, certifying natural character planting, and a role monitoring the planted areas until they meet the specified performance targets.
- e) She has limited confidence based on the information provided, that existing levels of natural character will be maintained across the catchments post construction if landowner approval for planting within private properties cannot be obtained, and planting is confined to the designation areas only.

139 Ms Williams notes that none of the submissions made on the Project directly address natural character. 21 submissions have raised concerns relating to potential effects on visual amenity and landscape character, with a number being concerned about effects on residential amenity (eg. loss of privacy, loss of views to the Tararua Ranges). Ms Williams considers that measures to mitigate effects on residential amenity for properties outside the designation should be undertaken to reduce adverse visual amenity effects.

140 Ms Williams makes the following recommendations with respect to conditions:

- a) Condition DVL2c) be retained as set out in the lodged NoR – to provide mitigation for all properties assessed as being affected by adverse effects that are moderate or greater, regardless of whether they are within or outside the designation.
- b) Conditions addressing natural character planting be provided in both Regional Resource Consent conditions and District Designation conditions.
- c) Amend condition DLV1 to provide an agreed set of specifications (for example Waka Kotahi Landscape Guidelines specification P39 section G Planting) for implementation, maintenance, and management of all planting.
- d) Conditions be amended to provide the District Councils with a role in certifying and monitoring the CEDF, and a role in monitoring and certifying the planted areas until they meet the specified performance targets.

141 Relying on Ms William’s review, I consider that while the Project will have a significant effect on the landscape, visual amenity and natural character due to the size of the Project area and scale of the works. However, overall I consider that with amendments to conditions recommended by Ms Williams, the Project is consistent with the relevant objectives and policies in HDC and KDC’s District Plans relating to natural character, rural character and visual amenity.

142 I support Ms William’s view that the design principles and mitigation measures proposed across the Ō2NL Project area as set out in the CEDF and supplemented by the Planting Concept Plans will provide appropriate visual mitigation for most properties. However, some properties will continue to experience significant adverse visual effects, therefore as recommended by Ms Williams, a strengthening of conditions to provide mitigation for all properties considered to experience moderate or greater effects visual effects (both within and outside the designation) is required, along with an agreed set of planting specifications for implementation, maintenance, and management.

143 I also support the recommendation to include a role for Councils to certify and monitor the CEDF, and monitoring and certify the planted areas until they meet the specified performance targets.

144 Further clarification is required relating to proposed natural character planting outside the designation on private property.

145 Overall, I consider that subject to amendments to conditions, the landscape, visual amenity and natural character effects can be appropriately managed.

Urban Design effects

146 The AEE does not specifically address urban design effects as a standalone technical assessment, but instead urban design is touched on in a number of technical reports including Technical Assessment D: Landscape Visual and Natural Character and Technical Assessment E: Social Impact⁵¹, and Appendix 3: CEDF (Cultural and Environmental Design Framework)⁵² which sets out the Project's sets out the overarching (core) design principles and vision that will be applied to the final design of the project.

147 Mr Graeme McIndoe has undertaken a review of the above documents, as well as completing a review of the NoR lodged by Waka Kotahi with HDC in February 2022 for the Queen St East to Tararua Road section of the Ō2NL Project⁵³, on behalf of HDC and KCDC (**Appendix 10**), and he considers that the Project has the following positive attributes:

- a) The whole of corridor approach to design which responds to cultural and ecological drivers and considers the rural receiving environment is sound.
- b) The proposed street connections at the north and south boundaries of Tara-Ika (HDC PC4 urban growth area) at Queen Street East and Tararua Road are well located and configured. The location of the Tararua Road interchange which provides for vehicle access to and from Levin and a planned future area of industrial zoning is considered logical.
- c) The proposed SUP is a positive recreational amenity and active transport asset, and at Tara-Ika it is well-located on the eastern side of the expressway, providing for north-south movement and connection to the future urban area.
- d) The CEDF is comprehensive, providing a detailed direction for design, although Mr McIndoe notes that the document contains multiple and often overlapping lists of criteria and principles that would benefit from some level of integration and presentation as a comprehensive set or sets of criteria and

⁵¹ Volume IV – Technical Assessment D – Landscape Visual and Natural Character

⁵² Volume II, Appendix Three - CEDF

⁵³ NOR O2NL Queen Street East to Tararua Road Section (Final) Complete February 2022.

principles, to avoid the risk of them not being effectively applied. These criteria and principles should also be confirmed (ie. fixed) through the approval process as currently they are somewhat indeterminate as the primary means of design control. Mr McIndoe also notes that the CEDF is 'a work in progress' and will continue to be developed with mana whenua following confirmation of the NoR, during future stages of the project, and therefore the CEDF consent version may change without the benefit of wider review by the Councils.

148 In relation to the proposed Taylors Road interchange, Mr McIndoe considers that the proposed configuration, from an urban design perspective is geometrically complicated. Additionally, the underpass cross-connection at the edge of the Waitohi Stream at south end of Ō2NL is considered to be convoluted and hampers legible, convenient and efficient connection between Otāki township and the residential areas to the north-west, however Mr McIndoe defers to KCDC's Transport expert (Mr David Dunlop) to comment further on this from a traffic engineering perspective.

149 There is however a significant urban design issue that Mr McIndoe has identified with the proposed configuration of the Ō2NL Project at Tara-Ika as described in the NoR and shown on the General Arrangement Plans⁵⁴. Mr McIndoe does not consider that the current proposal provides sufficient cross corridor (east-west) connection between Levin and the Tara-Ika urban growth area and that the NoR fails to recognise or provide for the PC4 development pattern.

150 The reasons for this are as follows:

- a) By not providing sufficient cross corridor (east-west) connections at Tara-Ika (as shown on PC4 Structure Plan 013), the configuration of the Project in this location is not consistent with relevant principles and guidance for neighbourhood spatial planning including Waka Kotahi's Intended Project Outcomes and Urban Design Principles; 'Bridging the Gap' Waka Kotahi Urban Design Guidelines (2013); the New Zealand Urban Design Protocol to which Waka Kotahi is a signatory; and the project's Cultural and Environmental Design Framework (CEDF) urban design principals⁵⁵.
- b) This lack of planning for the future contradicts one of Waka Kotahi's Cultural and Environmental Indicators listed at page 54 of the CEDF which is to "Create

⁵⁴ Volume III – Drawing Set, 02-General Arrangements (Sheets 5 to 7)

⁵⁵ Refer Volume II Appendix 3: CEDF Consent Version, page 10.

an Enduring Legacy”, specifically ‘Enhancing local connectivity, and ‘Supporting Tara-Ika’s growth and planned urban development’.

- c) From an urban design and planning perspective, the spatial planning outcome of not providing PC4’s planned cross-connections (being the East-West Arterial street connection and the two strategic cycleways and pedestrian bridge connections) at Tara-Ika is unacceptably poor.
- d) The absence of planned cross connections at Tara-Ika precludes the planned active mode routes with the consequence of restricting potential for convenient active transport, and restricting community connections and accessibility to the planned Tara-Ika town centre, compromising the ability to achieve a well-functioning urban environment as directed by Objective 1 of the NPS-UD56.
- e) Without the planned EWA and two strategic pedestrian/cycleway cross connections at Tara-Ika, the NoR will not be consistent with *NPS-UD Policy 1 (iv): “have good accessibility for all people between housing, jobs, community services, natural spaces, and open spaces, including by way of public or active transport.*
- f) The lack of east-west connectivity at Tara-Ika will lead to increased vehicle dependency due to longer travel distances and to consequent adverse health, social and environmental effects, all of which are avoidable if the cross connections are provided.
- g) The lack of east-west connectivity at Tara-Ika is likely to result in more people using vehicles to move in an east-west direction between Tara-Ika and the established part of Levin than would otherwise be the case if the planned cross connections were made, increasing future greenhouse gas emissions, which is contrary to NPS-UD Objective 8⁵⁷.

151 By not providing the planned PC4 cross-expressway connections at Tara-Ika, the resulting block length enforced by and along the Ō2NL expressway is 2000m, which

⁵⁶ National Policy Statement – Urban Development (NPS-UD)– ‘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’

⁵⁷ NPS-UD ‘Objective 8: New Zealand’s urban environments: support reductions in greenhouse gas emissions; and are resilient to the current and future effects of climate change’

is between eight to ten times what is usually considered to be a maximum, which is unacceptable from an urban design and neighbourhood planning perspective due to:

- a) Creating inconvenient cycle connections between Tara-Ika town centre and Waiopehu College due to additional distance and increased travel time.
- b) The resulting distances would not be considered to be walkable.
- c) The resulting increase in the use of cars as a result of the lack of cross connection.

152 In Mr McIndoe's opinion, the location and configuration of the proposed Ō2NL expressway as it passes through Tara-Ika would only be acceptable if the East-West Arterial street connection and the two strategic cycleways and pedestrian bridge connections, as described in PC4 (and shown in PC4 Structure Plan 013), are provided and integrated with the design and construction of the Ō2NL Project. Mr McIndoe considers that these connections are essential mitigation for placing the expressway in this location, through a planned urban area.

153 I agree with Mr McIndoe's assessment and consider the cross-connections to Tara-Ika need to be provided in order to avoid significantly adverse effects on this future urban development area. Cross connections at Tara-Ika should be integrated with the design and construction of Ō2NL. Omitting to respond effectively to Tara-Ika contradicts the intentions set out in the New Zealand Urban Design Protocol and is not consistent with the direction provided by PC4 (including directive provisions that are not subject to appeal).

154 Submitter #72 (James McDonnell Limited), being a key landowner within the Tara-Ika area, addresses the importance of the EWA and strategic cycleway connections, and seeks that this is provided as part of the Ō2NL designation. The submission emphasises the importance of providing the EWA to providing connectivity and a well-functioning urban environment in the Tara-Ika Growth Area. Mr McIndoe agrees with the comments made in this submission.

155 With regard to proposed designation conditions, proposed designation condition DTW5(a) requires that the Project must be consistent with the 'Design Principles in Chapter 3 of the 'Cultural and Environmental Design Framework', Consent Version, dated October 2022'. However, as mentioned above, the currently supplied CEDF is in draft and will be updated and evolve as the Project moves into detailed design. Mr

McIndoe notes that this process does not appear to provide for any certification by the District Councils, and in his view a review process requiring District Council review/certification should be provided. I agree.

156 Based on Mr McIndoe's review, I consider that further work is required to ensure conditions, designation and general arrangement plans and the CEDF adequately address the above issues. Through the next steps of the direct referral process, eg. expert conferencing and mediation, it is possible that a number of the issues identified above, particularly in relation to the CEDF, can be resolved.

157 I also understand that HDC and Waka Kotahi are in discussions about these matters and I fully endorse those occurring.

Economic effects

158 The economic effects of the Ō2NL Project have been assessed in the AEE⁵⁸ and in Technical Assessment O⁵⁹. The Ō2NL Project will overall, generate 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.

159 Mr Michael Cullen has reviewed the economic assessment undertaken by Mr Douglas Fairgray, economic expert for the Requiring Authority, on behalf of KCDC and HDC (**Appendix 7**) and with one exception he broadly agrees that the Project will generate positive economic effects during construction. and enhance performance of the Levin town centre.

160 The area that Mr Cullen does not consider has been adequately assessed by the Requiring Authority are the economic impacts of the Project on the Tara-Ika development.

161 Mr Cullen's key areas of concern in relation to this gap in the economic assessment are that:

- a) The economic assessment is largely confined to retail effects on the Levin Town Centre and broader (primarily positive) economic impacts within Horowhenua due to improved regional access to and from Levin. It does not address the location of Ō2NL and its effect on the substantial new proposed

⁵⁸ Volume II Assessment of Environmental Effects, Section 55, pages 293 - 296

⁵⁹ Volume IV, Final Technical Assessment O – Economics and Town Centre Impacts

community (Tara-Ika) that Ō2NL divorces from Levin, and particularly the currently isolated community of Levin East.

- b) In removing the potential for around 5,200 Levin east residents to connect directly to the Tara-Ika centre, Waka Kotahi is diminishing the social and economic potential of this centre as an alternate and directly accessible gathering place for Levin east residents.
- c) The direct connections to the east Levin community and the social and economic benefits thereof should fall under the agency's various statutory and voluntary obligations⁶⁰. The lack of recognition of Tara-Ika in the economic assessment is contrary to many of Waka Kotahi's objectives.

162 Mr Cullen considers that the economic assessment does not address the severance of between Tara-Ika and Levin East and the direct consequence of the change in accessibility between Levin east and the proposed Tara-Ika town centre, as a result of the Project.

163 In Mr Cullen considers that Waka Kotahi's approach to Tara-Ika appears to be different from how it addresses all other severances because the EWA has not been built, although Waka Kotahi know about the severance that will result and could address the issue of severance in the design of Ō2NL.

164 Having reviewed Mr Cullen's assessment, I agree that the Ō2NL Project will generate positive economic effects, especially through its long-term stimulus to growth in Horowhenua District, as well as during the construction phase.

165 I also agree with Mr Cullen's opinion that the Ō2NL Project as currently proposed will create severance issues between Levin East and the Tara-Ika town centre as it does not provide for the East-West Arterial ('EWA') connecting through from SH57 / Arapaepae Road, over Ō2NL and into the Tara-Ika centre as shown of the Tara-Ika Structure Plan 013. I agree with Mr Cullen that this is not in accordance with the various statutory and guiding documents that direct the Requiring Authority to enhance and contribute to social, cultural, ecological and community cohesion through addressing severance and supporting connectivity and place-making, to support community and economic outcomes and connections and integrate good urban design, planning and development into all activities.

⁶⁰ For example, the Land Transport Management Act 2003, 2022 Environmental and Social Responsibility Policy, Integrated Planning Strategy, Government Policy Statement on Land Transport (GPS)

Social impact effects

166 The Requiring Authority has addressed Social Impact in the AEE⁶¹ and Technical Assessment E: Social Impact Assessment (SIA)⁶².

167 Ms Michala Lander, has reviewed the relevant technical assessments on behalf of HDC and KCDC (**Appendix 4**), and considers that the methodology used in the SIA is appropriate for a project of this nature, but does note that there are some gaps in the SIA. She does not expect that information would significantly affect conclusions in the SIA, but considers that it should be provided by the Requiring Authority in evidence.

168 Ms Lander notes that:

- a) The SIA provides a comprehensive analysis of the existing social environment as a baseline from which to assess the potential impacts of the Project. However the analysis of the existing social environment would benefit from:
 - i. a comprehensive audit of social infrastructure that services the local, district and regional area, such as equestrian facilities (horse riding schools and racecourse facilities) and emergency services.
 - ii. an assessment of the impact of the Project on potential vulnerable communities (eg. early childhood facilities and retirement villages).
- b) At a regional and local community level, Ms Lander agrees with the ratings that have been applied, and that the Project will have moderate to high positive benefits resulting from:
 - i. having increased connections through a reduction in severance (with the notable exclusion at Tara-Ika where it is considered that social severance will occur).
 - ii. improved 'way of life' in terms of ability to carry out daily activities.
 - iii. improved 'health and wellbeing' resulting from reduction in the incidents of road crashes causing death and serious injury.

⁶¹ Volume II Assessment of Environmental Effects, Section 46, pages 254-262

⁶² Volume IV, Final Technical Assessment E – Social Impact Assessment

- iv. provision of a SUP that provides a safer environment for walking and cycling.
 - v. improved access for emergency services to communities within the region.
 - vi. removing traffic away from the centre of Levin, Ohau, Manukau and North Ōtaki, will improve the quality of the living environment and amenity of these community centres.
 - vii. provision of a more resilient road network, particular after natural disasters.
 - viii. the economic boost to the local and regional economy as a result of additional work opportunities and improved connectivity within the region.
- c) Ms Lander does however disagree with some of the conclusions and ratings identified in the SIA in relation to impacts resulting from:
- i. Property acquisition impacts on community cohesion. Property acquisition will have potential to create a subsequent social impact associated with loss of generational continuity. The SIA does not currently discuss the impact on sense of place with regard to historic family connections. This issue was raised by three submissions⁶³.
 - ii. The property acquisition process and the fear, uncertainty and stress that this process creates. In Ms Landers' view, fears have not been appropriately assessed within the SIA.
 - iii. The rating given to character of the community impacts should be moderate negative, rather than low negative, due to unavoidable residual effects on landscape character and amenity values.
 - iv. The rating given to the social impact category 'Way of Life' at the sub-local level should be assessed as moderate negative (rather than low) at a sub-local level.

⁶³ Submission No.s 7, 21, 49

- v. Across all the sub-local and local Community levels, the impact on Community (community cohesion) should be moderate negative (rather than low), due to the impact of property acquisition.
- vi. The social severance that will occur from the lack of east-west connectivity at Tara-Ika caused by the absence of the East West Arterial and other cycle and pedestrian crossings as shown on the Tara-Ika (Plan Change 4) Structure Plan.

169 There are 19 submissions that request the SUP be converted into a multiuse pathway to accommodate a bridleway, especially given the adjacent expressways of M2PP and PP20 have multiuse paths provided. Ms Lander considers that safety of equestrian riders should be considered as part of the Project, and that a recreation assessment of horse riding in the region be undertaken by Waka Kotahi, to confirm the location of equestrian facilities and any effects of the Project on them, and whether inclusion of a bridleway in the SUP is practicable for the Project.

170 Other matters identified by Ms Lander are:

- a) Loss of the ability to use highly productive land for production and through fragmentation of land parcels in a manner that impacts on the future productive use of those land parcels in terms of economic use, physical disruption or impediments to the operation of productive properties, and the resulting social and economic impact on communities. However, in relation to loss of highly productive land, I consider that this matter can be adequately addressed by the Requiring Authority either through their property acquisition process or post construction review of the designation width, as required by proposed condition DGA4.
- b) Lack of a comprehensive audit of social infrastructure that service the local, district and regional area.
- c) Absence in the assessment of the impact on the sense of place with regard to the connections that some families have with the history and heritage of the place.
- d) Absence of consideration of the impact on vulnerable communities, particularly with regard to noise, dust and vibration impacts as well as access.

- e) The need to consider the location of retirement villages in the design of any crossings to ensure there is safe access for pedestrians with mobility requirements.

171 Ms Lander recommends that the following information should be provided:

- a) A table that summarises the impact assessment in accordance with Waka Kotahi guidelines, to provide greater transparency on how final ratings for each impact were determined.
- b) A recreation assessment of horse riding in the region to confirm the location of equestrian facilities and any effects of the Project on them, and whether inclusion of a bridleway as part of the SUP is practicable for the Project.

172 Ms Lander has made recommendations to amend conditions and these are reflected in the Designation conditions attached at **Appendix 13**.

173 Relying on the advice of Ms Lander, I consider that the Project overall will have an overall positive effect on social values at a regional and local community level, but that there will be impacts at a sub local community level. I concur with Ms Lander that further work is required to assess effects on existing bridleways, and that provision of the above information will assist in obtaining a greater understanding of social impacts.

Transport and traffic effects

174 The Requiring Authority has addressed Transport and Traffic effects in the AEE⁶⁴ and Technical Assessment A: Transport⁶⁵.

175 The transport and traffic effects of the Project have been assessed by two technical experts on behalf of HDC (Mr Tim Kelly) and KCDC (Mr David Dunlop). I will therefore address each assessment separately.

Transport Assessment – Horowhenua District Council

176 Mr Tim Kelly has undertaken an assessment of the transport and traffic effects as they relate to the approximately 20 kilometre length of new state highway within the Horowhenua District, on behalf of HDC (**Appendix 9**).

⁶⁴ Volume II Assessment of Environmental Effects, Section 41, pages 205-217

⁶⁵ Volume IV, Final Technical Assessment A - Transport

- 177 Mr Kelly agrees with the analysis and conclusions reached in the assessment of Mr Phil Peet, the Requiring Authority's Transport expert, with the exception of the following matter:
- a) The integration of the Ō2NL alignment as it passes through the Tara-Ika development area.
- 178 While Mr Kelly considers that the Ō2NL Project will be highly beneficial for the District in terms of safety and efficiency of the roading network and also in facilitating urban development, such as Tara-Ika, the application as currently presented, in Mr Kelly's opinion, presents a confusing and contradictory position in relation to the intended connectivity between the Tara-Ika urban growth area and the existing Levin urban area as identified in the Tara-Ika Structure Plan 013 as provided by Plan Change 4 (PC4).
- 179 The Structure Plan for the Tara-Ika development identifies the Ō2NL corridor and the locations at which this will be crossed by an arterial route (the East West Arterial - EWA) and strategic cycleways. The existence of these crossings has been assumed in the transportation assessment undertaken for the Project, by making allowance for the vehicle movements generated by the completed Tara-Ika development. These also include the effects of traffic movements using the EWA road meaning, in Mr Kelly's opinion, that the submitted effects assessment for Ō2NL is inconsistent with the submitted plans for the project.
- 180 Mr Kelly notes that the connections identified in the Structure Plan, or an indication of where the Ō2NL is proposed to be crossed, are not reflected in the plans showing the designation extent or in the General Arrangement plans for the Ō2NL Project.
- 181 Mr Kelly also notes that Policy 6A.1.1 of PC4 requires that infrastructure and development in Tara-Ika must be consistent with the outcomes sought by the Structure Plan, particularly in relation to providing connections between Tara-Ika and the existing Levin urban area. I agree with Mr Kelly's assessment. In my view the Ō2NL NoR do not meet the requirement of this Policy.
- 182 Two submitters (# 72 James McDonnell Limited and #48 Kevin Daly), also raise concerns on the lack of connectivity across Ō2NL between Tara-Ika and Levin and a 'dis-connect' between the plans for Tara-Ika and those for Ō2NL.

183 In relation to the submission received from Kiwirail (#73) in relation to the proposal for an at-grade railway crossing at the western end of Tararua Road, Mr Kelly notes that the Requiring Authority proposes this as a short term measure and that a medium-longer term solution is still under development and subject to extensive discussions between Waka Kotahi, Kiwirail and HDC – the preference of KiwiRail is for grade-separation at this location. Mr Kelly considers that there is a need for some form of binding agreement between the parties which identifies the likely form and timing of an upgrade and attributes costs between the parties.

184 I concur with Mr Kelly’s findings and consider that apart from the issue Mr Kelly has identified in relation to the integration of the Ō2NL alignment as it passes through the Tara-Ika development area, the Project will have significant positive effects in terms of safety and efficiency within the Horowhenua District portion of the Project.

Transport Assessment – Kāpiti Coast District Council

185 Mr David Dunlop has undertaken an assessment of the transport and traffic effects as they relate to the four kilometre length of new state highway within the Kāpiti District, on behalf of KCDC (**Appendix 8**).

186 Mr Dunlop considers that the assessment undertaken, including the methodology used by Mr Phil Peet, the Requiring Authority’s Transport expert, is appropriate for a project of this nature and is generally robust.

187 Mr Dunlop considers that the conclusions reached in relation to potential traffic effects of the Project will be significantly positive in terms of safety and efficiency and agrees with Mr Peet that there will only be some minor effects during construction to some property owners as a result of due to having travel routes/travel times altered.

188 Mr Dunlop does not have any safety concerns in relation to the design of that part of the highway located within the Kāpiti Coast District. Mr Dunlop agrees that construction effects can be appropriately managed through a Construction Traffic Management Plan.

189 However Mr Dunlop considers that there is one key issue that has not been adequately addressed by the Requiring Authority, this being the design of the Taylors Road Interchange.

190 Mr Dunlop’s key concerns with the Taylors Road interchange are:

- a) There will not be a continuous local arterial (of a suitable standard) in parallel to the new highway / Peka Peka to Ōtaki expressway through this area. The proposed Project will result in a gap the local arterial between north of Ōtaki and north of Taylors Road in what is otherwise a continuous local arterial (of suitable standard) from Raumati to north of Ōtaki.
- b) The proposed Taylors Road interchange will mean that there will be three half diamond interchanges in close proximity (within approximately 3.5km) of Ōtaki with no further interchange for approximately 16km (at Tararua Road – Tara-lka). While not considered unsafe, the proposed spacing does not comply with best practice, is not a good transport planning outcome, will result in poor legibility for the public, and will mean potentially more people using the old highway for longer distances compared to a scenario where the interchanges were more evenly spaced (such as an interchange located at Manakau instead of Taylors Road).
- c) The Requiring Authority has not provided a robust scenario to confirm that the interchange will remove 1,000 vehicles per day from passing through Ōtaki.
- d) The proposed designation extent would make it very difficult, if not impossible, to provide both a two-way arterial connection under the new State Highway and an interchange solution at Taylors Road.

191 Mr Dunlop considers that the following should be undertaken to address the design of the Taylors Road Interchange:

- a) Amend the design to provide an alternative layout for the Taylors Road Interchange which delivers better outcomes, eg. provides a two-way connection under the new highway adjacent to Taylor Road and addresses the gap in the local arterial between north of Ōtaki and north of Taylors Road.
- b) Provide flexibility through the NoR consent conditions to allow Option 1 (Local Road – no connection) or Option 2 (Taylors Road half interchange) at Taylors Road, to be considered further.

192 Additional information should also be provided by the Requiring Authority to confirm how it was determined that the interchange would result in approximately 1,000 vehicles per day would be removed from passing through Otaki.

193 I concur with Mr Dunlop's findings and consider that apart from the issues Mr Dunlop has identified in relation to the Taylors Road interchange, the Project will have significant positive effects in terms of safety and efficiency with the Kāpiti Coast portion of the Project.

Effects on Tangata whenua and Cultural values

194 The Requiring Authority has addressed effects on cultural values in the AEE⁶⁶ and have included Cultural Impact Assessments ("CIA") from the Ō2NL Project Iwi Partners (being Muaūpoko Tribal Authority Inc and Lake Horowhenua Trust, Ngā Hapū-o-Ōtaki (Ngā Kapū), Ngā hapū o Kererū (Kōpūtōroa Stream), Ngāti Huia Collective, Ngāti Tukorehe Trust, and Te Kotahitanga o Te Iwi o Ngāti Wehi Wehi), contained in Volume V⁶⁷.

195 The AEE at Section 40 summarises the values and effects that are described in the CIA reports and the measures and processes that have been agreed / discussed with the Project Iwi Partners to address effects.

196 The AEE states that the '*CIAs represent a point in time and largely report on how Waka Kotahi and Iwi Partners have agreed that residual cultural effects should be managed. Additional design information and continued involvement of Iwi Partners is required to ensure that these effects continue to be effectively managed. Additional cultural effects identified which relate to matters associated with celebrating the cultural landscape, the need for iwi's ongoing involvement in the design of Project (the material supply sites, local road connections and gateways), and the need to provide long term access to cultural resources*'⁶⁸.

197 Project Iwi partners have developed key cultural values/core principles for the Project that underpin the ongoing cultural, environmental and wider design, management and implementation aspects. These key cultural values are:

To tread lightly, with the whenua

- *avoiding effects on groundwater that feeds Punahau/Lake Horowhenua;*
- *avoiding cutting into maunga;*
- *avoiding earthwork cuts across spiritual pathways and reconnecting them with overbridges;*

⁶⁶ Volume II Assessment of Environmental Effects, Part G Section 40, pgs. 185 - 205

⁶⁷ Volume V CIAs from Ngāti Huia Collective, Muaūpoko, Ngāti Raukawa ki te Tonga

⁶⁸ Volume II, Assessment of Environmental Effects, Part G, section 408, pg. 205

- *avoiding effects on Ohau, Kuku, Waikawa and Manakau awa, and otherwise providing for fish passage in other awa;*
- *avoiding effects on native forest remnants wherever possible;*
- *designing stormwater and drainage so as to avoiding mixing catchments, and to allow current awa patterns of movement to be retained (the same as pre-development);*
- *designing earthworks to reduce the need to take earth between catchments.*

Create an enduring legacy

- *designing the proposed restoration planting in accordance with ki uta ki tai; to restitch the landscape together and restoring connections that align with mountains to sea principles;*
- *designing so as to restore access to awa (at Waikawa Stream) but also potentially the northern bank of the Ohau River;*
- *planting types that afford rongoa and mahinga kai opportunities; and*
- *ongoing involvement of Iwi Partners in the design (through the CEDF Design Audit process, management plans) and then construction (through karakia and site observation) of the Project.*

198 As described in section 34.2 of the AEE, Tangata Whenua have been involved as project partners in considering the route options, route alignment, assessment process and assessment of effects. A Cultural Environmental Design Framework (CEDF)⁶⁹ has been developed in collaboration with the Ō2NL Project Iwi partners. The CEDF is underpinned by the above core values/principles and is centred upon te ao Maori, mātauranga māori, and te mana o te wai and will guide the detailed design of structures, landforms, streetscape and landscaping.

199 It is understood that the detailed design of the Ō2NL Project will be completed in accordance with the kaupapa tumu/core values/principles in the CEDF.

200 A suite of conditions has been proposed by the Requiring Authority addressing cultural effects, under the heading Tangata Whenua Values⁷⁰. The proposed conditions require continued CEDF design review audits, tangata whenua oversight during construction activities, and preparation of a Muaūpoko Management Plan and Ngāti Raukawa ki te Tonga Management Plan. The objective of these management plans

⁶⁹ Volume II Assessment of Environmental Effects, Appendix Three

⁷⁰ Volume II, Appendix 5 Draft Designation Conditions, Tangata Whenua Values (Conditions DTW1 – DTW5)

to manage the adverse effects of the construction and operation of the Ō2NL Project on the cultural values of Muaūpoko and Ngāti Raukawa ki te Tonga respectively.

- 201 A number of submissions have been received from tangata whenua⁷¹, including the Project Iwi partners, taking either a neutral position (ie. not oppose) or have indicated support for the Ō2NL Project, but have raised issues in relation to cultural effects and the proposed conditions.
- 202 Muaūpoko Tribal Authority's submission (Sub #74) has expressed concern around the accuracy and intent of the historical narrative and statements put forward by hapū of Ngāti Raukawa ki te Tonga about Muaūpoko and other Kurahaupō iwi. Muaūpoko Tribal Authority have also raised concern that the Tangata Whenua Values conditions (DTW1-5) as written are not fit for purpose in this cultural landscape, and seek amended wording to recognise the importance of Muaūpoko tikanga in the traditional Horowhenua Block/Taitoko area and allow for Muaūpoko via the CEDF to respond to their values as mana whenua and connections to their ancestral lands, waters, and sites⁷².
- 203 Rangitāne o Manawatū (Sub # 63), who are not a Project Iwi Partner, has concerns about how their mana, values and recognition of their people and whanaunga is being managed by the Requiring Authority and do not consider that the application is consistent with the principles of Te Tiriti o Waitangi and Rangitāne Treaty Settlement Act. Rangitāne is also concerned about the accuracy of the historical narrative put forward by Ngāti Raukawa hapū about Rangitāne. Rangitāne seek amendments to the conditions⁷³ which in summary relate to acknowledgement, consultation and the inclusion of Rangitāne in CDEF.
- 204 Ngati Raukawa ki te Tonga (the Hapū) (Sub #80) is a collective submission from ten (10) hapu, namely, Ngā Hapū o Otaki on behalf Ngāti Kapumanawawhiti, Ngāti Hikitanga, Ngāti Huia ki Poroutawhao, Ngāti Huia ki Mātau, Ngāti Kikopiri, Ngāti Ngarongo, Ngāti Pareraukawa, Ngāti Takihiku, Ngāti Tukorehe and Ngāti Wehiwehi. In addition, individual submissions, repeating the wording of the collective submission were received from Ngā Hapū o Otaki on behalf Ngāti Kapumanawawhiti (Sub #81), Ngāti Huia ki Poroutawhao (Sub #83), Ngāti Huia ki Mātau (Sub #84), Ngāti Kikopiri

⁷¹ Submission No. 63, 74, 80, 81, 83 - 90

⁷² Submission No.74, page 19, paras 1-5

⁷³ Submission No. 63, Page 11, Paras 1 - 3

(Sub #85), Ngāti Ngarongo (Sub #86), Ngāti Pareraukawa (Sub #87), Ngāti Takihiku (Sub #88), Ngāti Tukorehe (Sub #89) and Ngāti Wehiwehi (Sub #90).

- 205 These submissions support the NOR, acknowledging the collaboration with the Requiring Authority to working towards mitigation of potential effects and the importance of the CEDF. The submissions do however acknowledge that the Ō2NL Project will carve a scar through Papatū-a-nuku and impact on the Mauri of ancestral lands, sites and waterways, on taonga and kiatiaki responsibilities and mana.
- 206 The submitters have concerns that core values of the CEDF have not been reflected in the designation and resource consent conditions and do not appropriately reflect the outcomes sought by the Hapu require additional work, in summary, to reflect their cultural values, relationships to ancestral lands, water waahi tapu and other taonga, address matters of concern identified in the Hapu CIAs, embed the CEDF as the framework for delivering the project, and ensure opportunity for hapu participation in design, construction and monitoring⁷⁴.
- 207 As identified above, all of the above submitters support or are not opposed to the project. Tangata whenua submitters are of the view that conditions as currently proposed are inadequate and therefore the residual cultural effects to the Project have not been mitigated. I understand that the Requiring Authority is working with these submitters to further refine the conditions to address the matters raised. It may be that further information is forthcoming in respect of the Iwi Project Partners and submitters views as to these effects and how they are to be addressed during the hearing process.
- 208 At this time, I consider, based on the submissions received, that conditions as currently proposed have not adequately addressed cultural effects and that additional information is required from the Requiring Authority to show how residual cultural effects have been appropriately mitigated.

Summary of Actual or Potential Effects on the Environment

- 209 After reviewing the AEE and accompanying technical assessments, the mitigation proposed by way of monitoring and conditions, the technical reviews undertaken by the HDC and KCDC section 198D experts, and having considered the matters raised in submissions, I consider that with the recommended designation conditions in

⁷⁴ For example - submission No.80, page 6, para 25

Appendix 13 of this report, and subject to matters raised by Council's technical experts in relation to both the designation and resource consent conditions, a number of effects can be mitigated to a level which are minor or less than minor.

210 However as discussed above, there are a number of issues that are unresolved, where either further information is required or effects are considered potentially significant. These are:

- a) Flooding natural hazard: There is insufficient information to assess flooding effects, and further information is required.
- b) Severance of the Tara-Ika urban growth area due to the lack of east-west cross connections.
- c) Substandard design of the Taylors Road interchange.
- d) Economic and social effects of severance between Tara-Ika and Levin East due to the location of Ō2NL and lack of recognition of the East-West Arterial cross connection.
- e) Failure to integrate transportation and land use at Tara-Ika, which is not consistent with the project's CEDF urban design principles.
- f) Lack of East-West connectivity at Tara-Ika will lead to avoidable increased vehicle dependency and use, and to consequent adverse health, social and environmental effects.
- g) Maintaining existing levels of natural character post construction if landowner approval for planting within private properties cannot be obtained, and planting is confined to the designation areas only.
- h) Cultural effects if conditions do not adequately address tangata whenua concerns as set out in submissions.

M. CONSIDERATION OF ALTERNATIVE SITES, ROUTES OR METHODS FOR UNDERTAKING THE WORK

211 Under section 171(1)(b) of the RMA, the territorial authority (determining authority) must (subject to Part 2) consider the effects on the environment of allowing the requirement, having particular regard to whether adequate consideration has been given to alternative sites, routes or methods of undertaking the work, where the

requiring authority does not have an interest in the land sufficient for undertaking the work (section 171(1)(b)(i)) or it is likely the work will have a significant adverse effect on the environment (section 171(1)(b)(ii)).

- 212 The Requiring Authority does not at this stage have all the property interests necessary to undertake the work and the Project is also likely to have significant adverse effects on the environment before mitigation and offsetting/compensation is taken into account.
- 213 My understanding of the requirement of s171(1)(b) is that it is not a requirement to demonstrate the best option has been proposed but whether alternatives have been adequately considered.
- 214 The Requiring Authority has provided in the AEE Volume II, Part E, a consideration of alternative sites, routes and methods for the Ō2NL Project. This includes a comprehensive description of the process undertaken to identify that the new offline highway alignment was the preferred solution and subsequently the process used to confirm the route corridor that has been put forward in the NoR.
- 215 The alternatives consideration process was also informed by a range of historical transport studies and assessments undertaken in the Ōtaki to north of Levin area since the late 1980s.⁷⁵ These studies and assessments were presented in the Ōtaki to North of Levin Expressway Scoping Report (MWH, July 2012), which summarised what had previously been identified as key concerns and the associated options and proposals to mitigate and address those concerns.
- 216 Figure 20-1⁷⁶ sets out the process that the Requiring Authority has followed for consideration of alternatives since 2017.
- 217 The assessment of alternatives has been guided by the identified problems of the state highway (in particular safety and resilience), Part II of the RMA and related Ō2NL Project objectives⁷⁷. Detailed consideration of a wide range of possible route corridors between the start and end points for the Ō2NL Project, being the northern end the

⁷⁵ List of historical studies provided at section 24.1, Volume II Assessment of Environmental Effects

⁷⁶ Volume II Assessment of Environmental Effects, Part E, Figure 20-1, pg.107

⁷⁷ The identified problems of the existing state highway corridor as developed as part of the Indicative Business Case (IBC) stage and confirmed in the Detailed Business Case (DBC) informed the project objectives for the Ō2NL Project. Refer Volume II, Assessment of Environmental Effects, Section 22, pg.108-109.

northern end of the PP2Ō expressway just north of Ōtaki, and SH1 just north of Levin (to provide for a bypass of the Levin town centre), was undertaken.

- 218 A long list of broad corridor alternatives was developed, and a short list of corridors were identified following public and stakeholder consultation and engagement. The short list of corridors were further assessed culminating in the identification of a preferred 300m wide corridor option in the Indicative Business Case (IBC) for the Ō2NL Project in 2018. The IBC process to assess corridor options is outlined in the AEE⁷⁸. Based on the IBC findings, the Waka Kotahi Board determined (in 2018) that an off-line highway in a corridor to the east of Levin was the preferred alternative to be taken forward into more detailed phases of consideration.
- 219 The Detailed Business Case (DBC) phase of the project during 2020-2022 included a comprehensive assessment and refinement of the route alignment within the preferred corridor, including interchange forms and locations, local road connection alternatives and route refinement⁷⁹. The DBC was informed by technical specialist evaluations, Multi Criteria Analysis (MCA) used to compare and evaluate alternatives and project iwi partner, stakeholder, community and landowner engagement.
- 220 In my opinion the Requiring Authority has demonstrated that a robust and systematic process has been undertaken to investigate and assess alternative sites, routes and methods for undertaking the work. This process has occurred over a number of years, starting with identifying strategic alternatives for addressing the problems with the existing SH1 between Ōtaki and north Levin, leading to the new offline highway solution and consideration of a long list of alternative route corridors between Ōtaki and north of Levin. Following stakeholder and public consultation, and using an MCA analysis process throughout to compare and evaluate alternatives, a short list of corridor options was identified leading to a preferred corridor to the east of Levin. The DBC phase refined the highway alignment and form, informed by technical assessments and engagement with project iwi partners, stakeholders, the community and landowners, leading to the current corridor and concept design.
- 221 Overall, after reviewing the Alternatives information provided in the AEE⁸⁰, I consider that adequate consideration to alternative sites, routes and methods has been given.

⁷⁸ Volume II, Assessment of Environmental Effects, Part E, section 26

⁷⁹ DBC process is described in Volume II, Assessment of Environmental Effects, Part E, section 27

⁸⁰ Volume II, Assessment of Environmental Effects Part E

N. OBJECTIVES OF THE REQUIRING AUTHORITY

222 Under section 171(1)(c) RMA, when considering adverse effects of the NoR, particular regard must be had to 'whether the work and designation are reasonably necessary for achieving the objectives of the Requiring Authority for which the designation is sought.'

223 The stated objectives in relation to the Ō2NL Project are set out in section 4.6 of the AEE⁸¹. These are to:

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

224 The AEE states⁸² the Ō2NL Project and the designation boundary is reasonably necessary to achieve the project objectives because the Project once operational will:

- a) Save approximately 25-30 DSIs per 5-year period following its opening. This is primarily achieved by attracting through traffic off substandard sections of the existing SH1 and SH57 and shifting them to a high quality, median divided road.
- b) In terms of resilience, reduce the number of crash related closures on the state highway network by over 50%. The Project will provide a significantly shorter new highway route, constructed to a high standard. The old highway will be retained as an alternative route, adding redundancy to and increasing the resilience of the network.
- c) Improve movement of people and freight within the region and intra region.
- d) Provide a SUP along the length of the Project, which will provide recreational opportunities, reduce car dependency and provide mode choice.

⁸¹ Volume II, Assessment of Environmental Effects, Part A, section 4.6, pg.23

⁸² Volume II, Assessment of Environmental Effects, Part I, section 72.2, page 371- 372

225 I consider that the use of designations is reasonably necessary for the Requiring Authority to achieve its objectives for the following reasons:

- a) protects the land from development that might prevent or hinder the construction and operation of the Project; and
- b) provides certainty that the Ō2NL Project can be maintained and operated efficiently in the future; and
- c) provides certainty to the community in relation to the nature of the work and the location of the Ō2NL Project.

O. ANY OTHER MATTER

226 Section 171(1)(d) of the RMA provides for the territorial authority to have regard to (subject to Part 2) any other matter considered reasonably necessary in order to make a recommendation on the requirement.

227 There are a range of transport related plans and policies that are relevant to the consideration of the NoR including the Government Policy Statement on Land Transport 2021, National Land Transport Programme (NLTP), Horizons Regional Land Transport Plan 2021-2031 (RLTP) and the Wellington Regional Land Transport Plan.

228 The AEE addresses these matters at section 72.3, and they are summarised in Table 72-1 of the AEE⁸³. I agree with the matters identified in the table and consider that all relevant matters have been identified.

P. CONDITIONS

229 I have recommended some amendments to the proposed designation conditions for the Ō2NL Project as lodged (**Appendix 13**), noting that there are still:

- a) some gaps in the baseline assessment which may (once filled through expert conferencing, mediation and evidence) also result in the need for further or amended conditions, and

⁸³ Volume II, Part I, section 72.3, Table 72-1 page 373

- b) some amendments recommended in the technical reports which do not yet have specific amendments proposed and which will need to be the subject of further consideration (see for example the table at paragraph 16 above).

Q. SUBMISSIONS

- 230 A total of 89 submissions were received across the NoR and resource consents.
- 231 A full list of submitters is provided at **Appendix 16**. Key themes raised by submitter are identified at paragraph 42 and 43 of my report, The submissions have been summarised at **Appendix 17**.
- 232 Issues raised in submissions have been addressed under the relevant subject area in section L of my report.
- 233 I understand that the Requiring Authority is in the process of responding to all submissions, therefore it is possible that issues raised by submitters may be resolved. I expect that the Requiring Authority will provide an update in relation to submissions prior to the hearing.

R. CONCLUSION

- 234 The key conclusions of my report are:
- a) The NoR prepared by Waka Kotahi for the Project are comprehensive.
 - b) I consider that the Requiring Authority has adequately considered alternative sites, routes and methods of undertaking the work, as set out in Part E of the AEE and assessed in section M of this report.
 - c) Following review of the NoR by Council's technical experts, there are a number of issues that have been identified that I consider require further assessment or relate to areas of further work that need to be addressed by the Requiring Authority. I expect that these will be addressed through expert conferencing and an update will be provided to the Court and parties at the appropriate time. In summary these are:

Actual or Potential Effect	Key Issues Identified by Council's Technical Experts
Noise and vibration	Consider the establishment of a landscape bund adjacent to the Tara-Ika Urban Growth Area to provide additional noise reduction to the future residential area of Tara-Ika.
Air quality	Include additional requirements in the CAQMP (including monitoring plans) and include triggers to assess the performance of mitigation measures to implement additional mitigation and to rectify nuisance effects.
Terrestrial and Freshwater Ecology	<p>Additional information and rationale are required regarding the bat survey methodology used.</p> <p>Amendments be made to a number of regional consent conditions to strengthen the effects management measures in relevant management plans to ensure the proposed biodiversity outcomes are met.</p>
Contaminated Land	<p>A clearer and more robust process is required to address the management of contaminated land to inform possible future consenting requirements.</p> <p>That amendments need to be made to proposed regional condition REW4 to clearly set out the process for addressing contaminated land, including reviewing the PSI once site access is available, and to also include REW4 in the designation conditions.</p>

Actual or Potential Effect	Key Issues Identified by Council's Technical Experts
Hydrology/Flooding Natural Hazard	<p>There is insufficient information to assess flooding effects. The following information is required:</p> <ul style="list-style-type: none"> • Model a 0.5%AEP design storm event. • Review Table F.4 against KCDC's requirement of no increase in flood level. • Provide velocity mapping of the modelled area outside the designation. • Provide additional information relating to change in flood velocity. • Provide additional information to quantify the duration of flood inundation for the modelled area outside of the designation for both the 10% and 1% AEP events.
Water Quality	<p>The assessment and mitigation measures do not currently appear to adequately address the management of an elevated level of risk during peak earthworks and due to a potential peaking of exposed open areas.</p> <p>New and/or amended existing conditions and management plans (eg. Operations and Maintenance Plan) need to be provided to strengthen monitoring, management and reporting in relation to water quality and erosion and sediment control during construction and operation.</p>

Actual or Potential Effect	Key Issues Identified by Council's Technical Experts
Transport and Traffic	<p>There is a lack of integration of the Ō2NL alignment as it passes through the Tara-Ika development area, and a lack of cross connection and provision of the East-West Arterial as shown in PC4 Structure Plan 013.</p> <p>The location and design of the Taylors Road Interchange connection to Ōtaki and PP20 is considered to be substandard, does not comply with best practice and will result in poor legibility.</p>
Economic	<p>The economic effects of severance between Tara-Ika and Levin East due to the location of Ō2NL and lack of recognition of the East-West Arterial cross connection.</p>
Social Impact	<p>The need for a recreation assessment of horse riding in the region to confirm the location of equestrian facilities and any effects of the Project on them, and whether inclusion of a bridleway is practicable for the Project.</p> <p>Undertake a sense of place assessment to understand impact on family connections to the history and heritage of the area.</p> <p>Provide an assessment of the impact of the Project on fears and aspirations of the community.</p> <p>Social effects and severance issues arising from the disconnect between PC4 and the Project.</p>

Actual or Potential Effect	Key Issues Identified by Council's Technical Experts
Urban Design	<p>The failure to integrate transportation and land use at Tara-Ika, which is not consistent with the project's CEDF urban design principles.</p> <p>The lack of East-West connectivity at Tara-Ika will lead to avoidable increased vehicle dependency and use, and to consequent adverse health, social and environmental effects.</p> <p>Cross-connections at Tara-Ika should be integrated with the design and construction of Ō2NL.</p>
Landscape and Visual	<p>The lack of provision in conditions for the Councils to have a role in certifying the CEDF and the ability to certify / comment on design review audits.</p> <p>The lack of provision in conditions for Councils to certify natural character planting or having a role in monitoring planting areas until they meet specified performance targets.</p> <p>Limited confidence, based on the information provided, that existing levels of natural character will be maintained across the catchments post construction if landowner approval for planting within private properties cannot be obtained, and planting is confined to the designation areas only.</p>
Tangata whenua and cultural values	The need to provide conditions which adequately and appropriately address cultural

Actual or Potential Effect	Key Issues Identified by Council's Technical Experts
	effects as set out in submissions by tangata whenua, and provide additional information to show how residual cultural effects have been appropriately mitigated.

- d) In general, I consider that the proposed designation conditions are appropriate, however as highlighted by the District Council's technical specialists, there are a number of conditions where either the approach proposed is not supported, or additional conditions are required to avoid, remedy or mitigate effects. While I have signalled some suggested amendments to the draft designation conditions contained in **Appendix 13**, this is not complete given there are some matters that still require further clarification or information from the Requiring Authority, which will be addressed during the next stages of this process (eg. through expert conferencing and mediation).
- e) While a number of issues have been identified in the section 198D reports for the District Councils that require further consideration, I do not consider that there is anything identified in those reports that raises concerns relating to notification or the ability for submitters to understand the potential effects of the Project.

Helen Anderson

28 April 2023

APPENDIX 1

TERRESTRIAL AND FRESHWATER ECOLOGY – BRYN HICKSON ROWDEN

IN THE MATTER of the Resource Management
Act 1991

AND

IN THE MATTER of notices of requirement by
Waka Kotahi NZ Transport Agency (Waka Kotahi)
to Kāpiti Coast District Council and Horowhenua
District Council for a designations to construct,
operate, maintain and improve a new state
highway and shared use path and associated
infrastructure, between Taylors Road (to the
north of Ōtaki) and State Highway 1 north of
Levin.

SECTION 198D REPORT OF BRYN HICKSON ROWDEN – ECOLOGY

**KĀPITI COAST DISTRICT COUNCIL AND
HOROWHENUA DISTRICT COUNCIL**

27 April 2023

A. OUTLINE OF REPORT

- 1 This report, required by section 198D of the Resource Management Act 1991 (“**RMA**”), addresses the issues set out in section 171 of the RMA, to the extent that they are relevant to the notices of requirement lodged with the Kāpiti Coast District Council (“**KCDC**”) and Horowhenua District Council (“**HDC**”) (together and separately as appropriate, the “**NoR**”).
- 2 The NoR given by Waka Kotahi NZ Transport Agency (“**Waka Kotahi**”) to KCDC and HDC are for a designation to construct, operate, maintain and improve a new state highway and shared use path and associated infrastructure, between Taylors Road (to the north of Ōtaki) and State Highway 1 north of Levin. The project is known as the Ōtaki to North of Levin Highway Project (the “**Ō2NL Project**” or “**Project**”).
- 3 In addition, Waka Kotahi has separately applied for resource consents relating to the Ō2NL Project to Manawatū-Whanganui Regional Council and Greater Wellington Regional Council. This report addresses the terrestrial and freshwater ecology effects of the Project with regard to the NoR lodged with KCDC and HDC. Matters relating to the Applications are outside the scope of this report, and are being addressed by technical advisors for the Regional Councils. Mr Logan Brown is advising the Regional Councils in relation to freshwater matters whilst Mr James Lambie is addressing terrestrial ecology for the Regional Councils. In preparing this report, I have discussed terrestrial and freshwater ecology effects with both Mr Brown and Mr Lambie.
- 4 In preparing this report, I have reviewed the following documents lodged with the NoR:
 - a. Technical Assessment J: Terrestrial Ecology (Mr Nick Goldwater)
 - b. Technical Assessment K: Freshwater Ecology (Dr Alex James)
 - c. Drawing Set 02 – General Arrangements
 - d. Drawing Set 06 – Stormwater-Drainage
 - e. Drawing Set 09 – Planting
 - f. Drawing Set 11 – Ecology

5 I have also had correspondence with Regional Council technical experts Mr Logan Brown (freshwater) and Mr James Lambie (terrestrial ecology), and technical reviewers Dr Vaughan Keesing, Terrestrial & Freshwater Ecologist – Boffa Miskell and Dr Leigh Bull, Ornithologist - Boffa Miskell.

6 While this report is pursuant to section 198D of the Resource Management Act (“**RMA**”), I have (in accordance with section 42A(1A) and (1B) of the RMA) attempted to minimise the repetition of information included in the NoR and where I have considered it appropriate, adopt that information.

B. QUALIFICATIONS / EXPERIENCE

7 My name is Bryn Cal Hickson Rowden. I am an Ecologist at Boffa Miskell Limited. I have been in that position since 27 July 2021.

8 My role involves preparing and reviewing ecological impact assessments, drafting and reviewing resource consent conditions, undertaking ecological fieldwork including fish survey and salvage work, macroinvertebrate sampling, general freshwater surveys, lizard surveys and terrestrial vegetation surveys.

9 I hold a Bachelor of Science, Majoring in Ecology and Minor in Geography (University of Otago, 2014), and a Masters of Environmental Studies (University of Victoria Wellington, 2018). I am a member of New Zealand Freshwater Sciences Society and Environment Institute of Australia and New Zealand.

10 I am familiar with the site and surrounding area. I visited the site along with other HDC, KCDC, Horizons and Greater Wellington experts on 2 August 2021 (which included visiting a number of sites, including Arapaepae Bush, affected wetlands and several freshwater sites) and 24 August 2022 (general site tour).

C. CODE OF CONDUCT

11 I confirm that I have read and agree to comply with the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023. I confirm that I have stated the reasons for my opinions I express in this report, considered all the material facts that I am aware of that might alter or detract from those opinions, and that the report and the issues I have addressed are within my area of expertise.

12 Statements expressed in this report are made within the scope of my expertise, except where I rely on the technical advice (referred to in para 5). I have all the information

necessary to assess the NoR within the scope of my expertise and am not aware of any gaps in my knowledge.

D. EXECUTIVE SUMMARY

13 The key conclusions of my report are:

- a. The main areas of terrestrial and freshwater ecological value, where the effects on ecology cannot be avoided, remedied or mitigated, are detailed thoroughly in the Ecology Reports (with one exception noted below para 13c), and the proposed offsetting package adequately manages the adverse effects (i.e. to at least a “no net loss level”).
- b. The conditions proposed to date fall short of securing this outcome.
- c. The methodology relating to the proof of the presence of long-tailed bat within the Project area is not adequate. As such, any conclusions drawn regarding the presence/absence of the species are premature.

14 I conclude that the assessment of terrestrial and freshwater ecological effects is thorough, other than of long-tailed bats. Further work is required on the conditions package as it relates to ecology for this Project.

E. SCOPE OF REPORT

15 My report focuses only on issues related to the terrestrial and freshwater ecology of the NoR. It covers the following topics:

- (a) Background to the NoR review process;
- (b) Review of the terrestrial assessment of effects;
- (c) Review of the freshwater assessment of effects;
- (d) Review of the proposed conditions;
- (e) Submissions which raise effects on terrestrial or freshwater ecology;
- (f) Conclusion.

F. BACKGROUND

16 The review process for Technical Assessment J: Terrestrial Ecology and Technical Assessment K: Freshwater Ecology (the “**Ecological Reports**”) has been iterative. I have provided feedback and taken part in workshops/discussions since 10 August

2021. I have been able to provide feedback at the draft NoR report stage and final draft stage.

- 17 I consider that the Ecological Reports are thorough and it is clear that considerable field work has been undertaken. Additionally, substantial analysis, research and consultation effort has been applied and the approach and methodology applied is generally appropriate.
- 18 My report focuses on the aspects or elements of the Ecological Reports that are unclear or appear to have deficiencies and require further explanation from my point of view.
- 19 A review (for Section 92 purposes) was undertaken of the submitted NoRs. Responses to the s92 Review were received from the authors of the Ecological Reports. Of the major omissions I identified in my s92 review, one issue is still outstanding.
- 20 This outstanding issue relates to the methods for determining if long-tailed bat are present at the site. This point is discussed in detail below.

G. REVIEW OF TERRESTRIAL ECOLOGICAL REPORT

- 21 Generally the report encompasses a thorough assessment of terrestrial ecological effects undertaken by Waka Kotahi (bats aside). The terrestrial report assesses the effects of the proposed Project on flora, bats, birds, lizards and terrestrial invertebrates.

Methods

- 22 I consider the methods (apart from those for bats, see below) utilised to undertake the assessment of ecological effects to be appropriate and sufficient for the purpose and scale of the Project. In particular, I agree that the application of EIANZ (Roper-Lindsay et al., 2018) guidelines within the assessment was appropriate.
- 23 I note that for some locations of the assessment, field surveys could not be completed. While an assessment solely using aerial imagery is not considered best practice, given the lack of landowner permission to access these sites (seven properties), and low risk rural environment, this methodology is considered acceptable for the Project at this stage.

Statutory considerations

- 24 The relevant Objectives, Policies and maps within the Horowhenua District Plan (2015) and Kāpiti Coast District Plan (2021) have been correctly identified.

Ecosystems and Habitats

Flora

- 25 The methodology as noted above is considered sufficient and appropriate. Regarding the results of the vegetation mapping, the classifications appear to be accurate and to an acceptable level of detail (given the scale of assessment).

Bats

- 26 The methodology used to assess effects on potential indigenous bat values is considered appropriate (following Department of Conservation protocols). However I note that only a single Automatic Bat Monitor (ABM) deployment was undertaken.
- 27 The rationale for undertaking a single ABM deployment during the bat active period was not addressed in the assessment. It is noted that the accepted methodology for long-tail bat detection is in spring/early summer and late summer/autumn¹.
- 28 The s92 response from Waka Kotahi regarding the single deployment did not in my view adequately address the rationale for diverting from established methodology. The response noted that the rationale for not completing a second detection deployment was as a result of not detecting any bats in spring/early summer. The initial assessment specifically notes that the absence of records does not preclude an assessment for bats being undertaken.
- 29 The conclusion that the potential roosting habitats that exist within the Project area are not currently used by indigenous bats (paragraph 121, Tech Assessment J) is not supported by the methodology.
- 30 It is my opinion and recommendation that a second ABM deployment in late summer/autumn should be undertaken to ensure (in line with best practice) that roosting habitats are not currently used by indigenous bats. That said, discovery of long tailed bats and roost use within the designation may not alter the level of effects

¹ *Pers comms. Georgia Cummings (qualified NZ bat expert (Tonkin & Taylor))*

predicted because there is an effect management process that should be employed to avoid bat harm regardless of ABM detection results.

Birds

- 31 The methodology as noted above is considered sufficient and appropriate. The results of avifauna surveys appear to be accurate and to an acceptable level of detail.

Lizards

- 32 The methodology as noted above is considered sufficient and appropriate. The results of lizard surveys appear to be accurate and to an acceptable level of detail.

Terrestrial invertebrates

- 33 The methodology as noted above is considered sufficient and appropriate. The results of terrestrial invertebrate surveys appear to be accurate and to an acceptable level of detail.

Ecological Values

- 34 As noted above, the methodology for determining Ecological Value utilising EIANZ guidelines is considered good practice and appropriate. The inclusion of areas outside the Project area and the rationale (paragraph 132²) is supported.
- 35 The assessed values are considered to be accurate, and it is noted where there is potential ambiguity given data restrictions, the assessment has engaged in a conservative assessment.

Project shaping and avoiding and minimising effects

- 36 The apparent process of Project shaping with regard to minimising and / or avoiding ecological values is considered to have been sufficient and appropriate given the scale of the Project and types of values encountered.

Assessment of Effects

- 37 Generally, I agree with the assessment of effects and the effect management proposed by Waka Kotahi.

² Technical Assessment J – Terrestrial Ecology

- 38 I note that in regard to habitat loss, there is a conservative “worst case” assumption established. Where ambiguity remains, as is typically the case for a designation, rather than a detailed construction resource consent, this is an appropriate response. As such the determination of the level of offset required has been scaled to match the worst case scenario.
- 39 I note that as the methodology for establishing the value of indigenous bats within the Project area is incomplete, the potential effects of the Project on indigenous bats or the management of them are therefore not completely established.

Offsetting

- 40 I agree with the proposed biodiversity offsetting response as detailed in the Ecological Reports. I am confident that the offsetting proposed is a reasonable and appropriate way to manage the residual effects of the Project on terrestrial ecology of the designation area.
- 41 I note that I was not able to visit Te Ripō o Hinemata (the proposed wetland offsetting site). As such I defer to James Lambie’s discussion of this in his s87F report and support his conclusions regarding the suitability of the offset site.

H. REVIEW OF FRESHWATER ECOLOGICAL REPORT

- 42 The report presents a thorough assessment of freshwater ecological values and likely effects undertaken by Waka Kotahi. The freshwater report addresses the effect management regime appropriately.

Methods

- 43 I consider the methods utilised to undertake the assessment of freshwater ecological effects appropriate and sufficient for the purpose and scale of the proposal. In particular I agree that the application of EIANZ (Roper-Lindsay et al., 2018) guidelines for ecological assessment was appropriate.
- 44 I note eDNA does not yet form part of the conventional methodology for sampling fish species in New Zealand, although it is becoming more common. I believe that given the scale and sampling challenges faced by the Project, eDNA provides a robust indication of fish presence/absence for the purposes of an assessment of effects across a number of large scale catchments.

Statutory considerations

45 The relevant policies and regulations of the NPS-FM and NES-FW have been correctly identified.

Ecological Values

46 The assessed values are considered to be sufficient and appropriate.

Project shaping and avoiding and minimising effects

47 The apparent process of Project shaping appears to have taken freshwater ecological values into consideration, and is considered to be sufficient and appropriate given the scale of the Project.

Assessment of Effects

48 I agree with the assessment of effects conclusions and the effects management proposed by the Applicant.

49 I note that the ecological assessment of effects for sediment release magnitude relies on catchment modelling from Technical Assessment H (Water Quality) (paragraph 166³). The effects are therefore contingent on the accuracy of that modelling.

50 Related to sediment release, I note that there are some aspects of flood modelling that may be under review at this time and as such would like to note that any change to the models (and particularly the outputs) may have implications on the ecological level of effect.

Offsetting

51 I agree with the proposed stream biodiversity offsetting response. I support the focus of the offsetting on long continuous sections of stream.

I. CONDITIONS

52 I have reviewed the draft conditions (revised on 28 November 2022). I acknowledge that as a result of s92 comments from District Councils, Waka Kotahi has modified RTE7. Proposed condition RTE7 is discussed further below.

³ Technical Assessment K – Freshwater Ecology

53 In order to attain the correct ecological outcomes, it is crucial the conditions reflect the assessment of effects management regimes proposed in the Ecology Report.

54 My comments and critique of the proposed conditions (terrestrial and freshwater ecology) have been relayed to and discussed with Mr Lambie and Mr Brown. I have reviewed their comments and responses to the proposed conditions in each of their reports.

55 Below I have set out my comments in relation to the set of conditions proposed by the Requiring Authority.

56 *Terrestrial.*

Proposed condition	Comment
RTE1 b) and: RTE1 c)	<p>The proposed use of digital mapping as opposed to physical delineation raises the question of accuracy and of practical application in the field when it comes to delineate the physical feature prior to clearance.</p> <p>I prefer to see “or through digital mapping” removed..</p> <p>If digital mapping is to be used, it can only be as a proxy to physical delineation. If it is used and I suggest it cannot be relied on in the absence of field delineation then there should be a protocol in the appropriate management plan that ensures physical delineation occurs prior to vegetation/habitat clearance.</p>
RTE2 e)	<p>The use of ‘suitably qualified person’ should be replaced with ‘suitably qualified and experienced avifauna specialist or ornithologist’ given that the nature of the proposed work to be carried out requires specialist knowledge.</p>
RTE5	<p>Reference should be made to a “suitably qualified and experienced Herpetologist” for survey work and salvage work - which would be a requirement to get a WAA permit in any case.</p>

RTE6	A reference to a suitably qualified and experienced Entomologist to undertake the survey and salvage.
RTE7 b ii)	The updated condition by the Requiring Authority includes the wording 'where it is practicable to do so'. These words should be deleted from the condition, as discussed in the s92 request by the district councils.

57 *Freshwater.*

Proposed condition	Comment
RFE1 b) i <i>capture and relocation in accordance with clause (d); or</i>	'Or' should be replaced with 'and' as it implies capture and relocation may not be required. This contravenes proposed management methods in Technical Assessment F.
RFE1 b) ii	This condition should be deleted unless Waka Kotahi can show how this method could reduce fish numbers to an appropriate level prior to construction activities and which does not harm them.
RFE1 d) iii	'Spotlighting' should be 'spotlighting and netting' and the 'or' must be replaced with 'and'. I propose RFE1 d) is reworded to: <i>Where fish, Kōura and Kākahi are captured and relocated fish recovery, must, depending on habitat type, be undertaken by using a combination of: i-iv; and v relocation to suitable habitat.</i>
RFE1 e) and f)	These conditions do not line up with current best practice regarding final effort for fish recovery and relocation. And there are impracticalities - one hour of trap recovery will be ineffective, whereas

	<p>one hour of EFM fishing is reasonable, but only in clear moving riffle habitat.</p> <p>I suggest rewording and caucusing between the experts to determine the appropriate effort threshold for fish rescue and recovery. It is common to use 10% abundance of any species as that relates to the numbers of that species caught in the first two salvage efforts. Thus assured of salvaging around 90% based on the totals of the first two salvage efforts.</p>
RFE1	I recommend additional conditions to include reporting of species captured to the consent authorities and national database.
RFE2 b)	<p>I suggest the addition of:</p> <p>In addition to the requirements for culverts in Condition RWB1, fish passage in line with NZ Fish Passage Guidelines must be provided through the new permanent culverts listed as requiring fish passage in the 'Catchment Culvert, Swale and Pond/Wetland Schedule' in 'Notices of Requirement for a Designation and Application for Resource Consents' dated 1 November 2022 'Volume III Drawings and Plans' when the culvert is livened.</p>

58 *Ecology Management Offset and Compensation.*

Proposed condition	Comment
REM4	I suggest the condition should include all of the potential pest plants that could be spread by the Project.
REM6	I suggest rewording and caucusing between the experts to determine the appropriate timeframe for planting completion.
REM12	Aquatic offset planting does not note the combined stream length. This appears to be an accidental omission and should be rectified.

J. SUBMISSIONS

59 The following submissions contain reference to ecological matters (both terrestrial and freshwater):

Terrestrial –

- Ben Summers for Nestbox NZ Ltd (#1),
- Wendy McAllister-Miles and Dion Miles (#8),
- Adam and Richard McCallum (#11),
- Glenys Anderson (#22),
- Anita Lenaghan (#24),
- Maira Storey (#25),
- Martyn Vause (#29),
- Ruth Halliday (Kapiti Equestrian Advocacy Group) (#32),
- Rochelle and Matthew Apatu (#40),
- John and Jenny Brown (#41),
- Shelly Warwick (#44),
- Kevin Daly (#48),
- Karen and Stephen Prouse (#49),
- Rebecca Wilson (#51),
- Nicola Robinson (#55),
- Royal Forest Bird Protection Society INC (#62),
- Sarah Hodge (#71).

Freshwater –

- Louise Miles (#20),
- Public Health Services, Midcentral, Te Whatu Ora (#45),
- Fish and Game (Ami Coughlan) (#59),
- Royal Forest Bird Protection Society INC (#62).

Terrestrial

Vegetation/bunds screening

60 I have grouped submissions 1, 8, 11, 22, 29, 40, 48, 49 and 71 into the following response given their relevance to noise/dust/visual effects using potential vegetation or bunds as screening. Generally these submissions do not address ecological impacts – rather the potential impact of the Project on buildings, domestic water supply and lifestyle.

61 I note submission #1 references the risk of avian diseases, but I do not make comment in relation to that submission given I am not an expert in that field.

1m grass berm for equestrian purposes

62 I have grouped submissions 24, 32, 44, 51 and 55 into the following response given their request for a 1m grass berm equestrian pathway.

63 I assume that in order to accommodate a 1m grass berm, the width shared pathway will have to be increased. Where the project footprint has been shaped to minimise the ecological impact of the Project, accommodating a grass berm may result in a higher ecological impact and/or the requirement for increased mitigation/offset. I believe reducing the ecological impact of the Project should continue to be a priority.

Submission #25

64 I agree that there is limited pest control detail in the proposal. I note that pest management should be addressed in an appropriate management plan, including the area identified in the submission and as it relates to the proposed mitigation and offset proposals.

Submission #41

- 65 Submission #41 refers to the potential for water runoff from the road to pollute and degrade the quality of the surrounds land and bush. I believe potential operational ecological effects regarding water run-off have been adequately covered in Technical Assessment K – Freshwater.
- 66 The submission also references subterranean water. This aspect of the submission is best addressed by a hydrologist.

Submission #49

- 67 Submission #49 refers to the desire to relocate any culturally significant species. I believe effects on fauna and flora have been adequately addressed.

Submission #62

- 68 Submission #62 conveys the position that the Project will cause an increased pest risk and loss of indigenous vegetation habitat and that these matters are not adequately addressed in the conditions. The submission also addresses the timeframes (or there lack of) tied to pest control.
- 69 I agree that conditions regarding pest control, including timeframes, should be reflected in both the construction and operational conditions and expect these to be addressed by required management and offset plans.
- 70 There is a discussion of a shifting of goal posts in the submission. I do not agree that REM19 enables a 'shifting of goal posts'. I see the purpose of REM19 d) as a fall-back plan should offsets fail. REM19 may need to be revised to ensure its wording is clear and presents realistic measures of net gain outcomes.

Freshwater

Submission #20

- 71 I believe the level of effect relative to the waterway discussed by the submitter has been adequately addressed in Technical Assessment K – Freshwater. The overall level of effect determined as part of Technical Assessment K incorporates a number of factors, one of which is the fish species present.

Submission #45

- 72 I note stormwater ponds are not usually designed with fish habitat in mind (dependant on the proposal) and as such, fish passage is unlikely to be a design requirement for stormwater ponds.

Submission #59

- 73 I believe that the effects on indigenous freshwater species have been adequately address by Technical Report K – Freshwater. I do note the submitter’s concerns regarding introduced species.

Submission #62

- 74 The submitter’s concerns regarding aquatic planting have been addressed in the above paragraphs.

K. CONCLUSION

- 75 The assessment of terrestrial and freshwater ecological effects is thorough (long tailed bat survey aside). The effects management hierarchy has been followed appropriately. The proposed offsetting and compensation package should result in a net-gain for ecological aspects relevant to the Project.
- 76 The matter of a second ABM deployment is still outstanding and an issue in my opinion (though not critical).
- 77 A number of conditions regarding the ecological management of the Project need to be improved to ensure the proposed offsetting outcomes as detailed in the Ecology Reports are met.
- 78 Once the ABM issue is resolved (by survey or management in conditions), and the proposed methods to avoid, remedy, mitigate and offset are implemented on the Project through conditions (as intended by the ecological technical experts), I am confident that the Project can result in a net gain for biodiversity.

Bryn Cal Hickson Rowden

27 April 2023

APPENDIX 2

LANDSCAPE AND VISUAL – JULIA WILLIAMS

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of notices of requirement by Waka Kotahi NZ Transport Agency to Kāpiti Coast District Council and Horowhenua District Council for designations to enable the construction, operation and maintenance and improvement of new state highway, shared use path and associated infrastructure, between Taylors Road (to the north of Ōtaki) and State Highway 1 north of Levin.

**SECTION 198D REPORT OF JULIA ANNE WILLIAMS – LANDSCAPE, VISUAL
AND NATURAL CHARACTER**

**KĀPITI COAST DISTRICT COUNCIL AND
HOROWHENUA DISTRICT COUNCIL**

28 April 2023

A. OUTLINE OF REPORT

- 1 This report, required by section 198D of the Resource Management Act 1991 (“**RMA**”), addresses the issues set out in section 171 of the RMA, to the extent that they are relevant to the notices of requirement lodged with the Kāpiti Coast District Council (“**KCDC**”) and Horowhenua District Council (“**HDC**”).
- 2 The notices of requirement given by Waka Kotahi NZ Transport Agency (“**Waka Kotahi**”) to KCDC and HDC are for a designation to construct, operate, maintain and improve a new state highway and shared use path and associated infrastructure, between Taylors Road (to the north of Ōtaki) and State Highway 1 north of Levin. The project is known as the Ōtaki to North of Levin Highway Project (the “**Ō2NL Project**” or “**Project**”).
- 3 In addition, Waka Kotahi has separately applied for resource consents (“**Applications**”) relating to the Ō2NL Project to Manawatū-Whanganui Regional Council (“**Horizons**”) and Greater Wellington Regional Council (“**GWRC**”) respectively.
- 4 This report addresses landscape, visual and natural character matters with regard to the notices of requirement lodged with KCDC and HDC. I have prepared a separate report (pursuant to s87F of the RMA), in relation to natural character matters, for the Applications lodged with Horizons and GWRC.
- 5 In preparing this report, I have relied on the expert advice from the following technical advisors for KCDC and HDC:
 - (a) Graeme McIndoe - Urban design
 - (b) Bryn Hickson Rowden – Terrestrial ecology
- 6 In preparing this report, I have reviewed the following information lodged with the notices of requirement:
 - (a) Technical Assessment D: Landscape, Visual and Natural Character (referred to in this report as “**the Technical Assessment**”), prepared by Gavin Lister;
 - (b) Planting Concept Plans: Indicative Typology Ref:310203848-01-700-C1000 Rev D and RMA Purpose Type Ref:310203848-01-700-C2000 Rev A;
 - (c) Photo Simulations (Volume III – Drawing Set, 10 – Photo Simulations);

- (d) Draft Cultural and Environmental Framework (**CEDF**);
- (e) Appendix 5: Proposed Conditions (updated 21-03-23); and
- (f) Waka Kotahi's s92 response dated 22 December 2022.

7 While this report is prepared pursuant to section 198D of the Resource Management Act ("**RMA**"), I have (in accordance with section 42A(1A) and (1B) of the RMA) attempted to minimise the repetition of information included in the notices of requirement and where I have considered it appropriate, adopt that information.

B. QUALIFICATIONS / EXPERIENCE

8 My name is Julia Anne Williams. I am a landscape architect and a director at Drakeford Williams Ltd Landscape Architects. I have been in that position since the company was established in 2003.

9 My role in relation to this Project has involved provision of pre-lodgement advice to KCDC and HDC on landscape, visual and natural character effects and has included dialogue with Waka Kotahi contracted landscape architects prior to lodgement, input into the section 92 request to Waka Kotahi from the District Councils and liaison with the District Councils' terrestrial ecology and freshwater ecology expert post lodgement to evaluate those effects. I have also provided advice to Horizons and GWRC in relation to natural character effects associated with the Project.

10 I hold a Bachelor of Architecture degree (Auckland University) and a Postgraduate Diploma in Landscape Architecture (Lincoln College). I am a current certificate holder in the 'Making Good Decisions' Programme for Resource Management Act decision-makers. I am a Fellow of the New Zealand Institute of Landscape Architects (NZILA) and hold current professional registration. I also am Chair of the NZILA Accreditation Panel. I have over 40 years of experience as a landscape architect in landscape design, development and assessment projects.

11 In my professional capacity, I have been involved in landscape assessments, landscape management and strategy reports and peer reviews. I have prepared and presented landscape expert witness evidence at Council, Environment Court and Board of Inquiry hearings on behalf of Waka Kotahi.

12 I have also provided expert input and review for s198D and s42A reports for consent authorities in relation to a range of roading projects.

- 13 Projects of relevance I have been involved in include:
- (a) RiverLink Proposal (2022) where I provided evidence for Hutt City Council;
 - (b) Eastern Bay Shared Path (2019) where I prepared a s42A report for Hutt City Council;
 - (c) Transmission Gully Project where I assisted Wellington City Council, Porirua City Council and KCDC in a review capacity from 2013 – 2022;
 - (d) Mackays to Peka Peka Expressway Proposal (2012), where I presented evidence to the Board of Inquiry for KCDC
 - (e) Peka Peka to Ōtaki Expressway Proposal (2012), where I presented evidence to the Board of Inquiry for KCDC; and
 - (f) Turitea Wind Farm Proposal (2009), where I prepared a section of the 42A report for the Board of Inquiry.

14 I am familiar with site and surrounding area. I visited the site along with other HDC, KCDC, Horizons and Greater Wellington experts on 3 August 2021 and 24 August 2022. I also accompanied Waka Kotahi landscape experts to the project site on 30 June 2022 to review the representative viewpoints for the photo simulations.

C. CODE OF CONDUCT

15 I confirm that I have read and agree to comply with the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023. I confirm that I have stated the reasons for my opinions I express in this report, considered all the material facts that I am aware of that might alter or detract from those opinions, and that the report and the issues I have addressed are within my area of expertise.

16 Statements expressed in this report are made within the scope of my expertise, except where I rely on the technical advice, I have referred to in paragraph 5 of this report.

17 I have all the information necessary to assess the notices of requirement within the scope of my expertise and am not aware of any gaps in the information or my knowledge.

D. EXECUTIVE SUMMARY

18 The key conclusions of my report include:

- (a) I acknowledge the need for the Ō2NL Project to avoid the coastal environment and the functional necessity for the highway to cross numerous waterways and wetlands. I generally consider the natural character effects of the Project to be appropriate.
- (b) I agree with the methodology used by Waka Kotahi to assess existing landscape and natural character levels, and to assess the effects of the Ō2NL Project on landscape, natural character and visual amenity values.
- (c) I support the package of design principles and mitigation measures across the Ō2NL Project area as set out in the CEDF and supplemented by the Planting Concept Plan.
- (d) I endorse the measures which Mr Lister (who prepared Technical Assessment D, lodged with the notices of requirement) has outlined to provide for integration between the O2NL Project and Tara-Ika, and the measures that could be adopted to further mitigate impacts on amenity values of the planned urban development and its connectivity with Levin.
- (e) I generally agree with the assessment of effects on landscape character, which are adverse and range from *low* to *moderate-high*.
- (f) The Technical Assessment includes a Visual Effects Inventory that identifies every property where adverse effects would be *moderate or greater*. While in most instances, visual mitigation for properties will be provided by the wider landscape design within the designation, the Technical Assessment and accompanying Inventory acknowledges that that the Project will have significant adverse visual effects for some residents, and I agree.
- (g) I recommend that new conditions are added to the designation to provide the District Councils with a role in certifying the CEDF and monitoring the planted areas until they meet the specified performance targets.
- (h) I agree that natural character in each catchment will be maintained once the proposed measures to rehabilitate and restore the natural characteristics and qualities have been fully implemented.

- (i) I support the proposal to extend natural character riparian restoration planting beyond the designation and into private property if landowner agreement is provided for this. These properties are identified in the Planting Concept Plans: RMA Purpose Type as detailed in paragraph 6 e) above.
- (j) Waka Kotahi has confirmed there are sufficient alternative sites available for offsetting purposes if landowner approval cannot be secured for areas of planting beyond the designation. However, by definition, natural character (or at least the landscape component of natural character) is site-specific and relies on the perceived naturalness of the river/stream/wetland landscape that can be viewed from the highway, bridges and the shared use pathway. Offsetting therefore does not and cannot mitigate perceived effects on natural character. Without the onsite riparian restoration planting on private property, existing levels of natural character will be reduced in all catchments by one level of magnitude, based on the evaluation scale set out in Technical Report D.1.
- (k) None of the submissions made on the Project directly address natural character. Twenty one submitters have raised concerns relating to potential effects on visual amenity and landscape character. While some submissions raise general issues about the Ō2NL Project, a number of submitters are concerned about effects on their residential amenity. Measures to mitigate effects on residential amenity for properties outside the designation corridor should be undertaken to reduce adverse visual amenity effects to less than moderate where practicable.
- (l) On the information and on the basis of the proposed conditions provided to date, I have limited confidence that existing levels of natural character will be maintained across the one KCDC and five HDC catchments if landowner approval for planting within private properties cannot be obtained, and planting is confined to the designation areas only. If those approvals can be obtained and the planting within private properties occur, I consider that existing levels of natural character will be maintained across the one KCDC and five HDC catchments.

¹ Technical Report D:Appendix D1:Methodology. Paragraph 12.

E. SCOPE OF REPORT

19 My report focuses only on issues related to landscape, visual and natural character. It covers the following topics:

- (a) Regulatory framework for natural character, landscape character and visual amenity;
- (b) Review of notices of requirement;
 - i. Matters of agreement including: methodology, mitigation measures; assessment of effects on visual amenity, landscape character, natural character; and construction effects;
 - ii. Matters of disagreement including: visual mitigation on private property; differentiation between landscape and natural character planting; planting performance standards; certification; and proposed natural character planting outside the designation.
- (c) Regulatory review assessment;
- (d) Comments on submissions;
- (e) Recommendations for Conditions; and
- (f) Conclusions.

F. BACKGROUND

Regulatory framework

Natural character

20 The preservation of the natural character of wetlands, rivers and their margins, and the protection of them from inappropriate subdivision, use, and development, is a matter of national importance as set out in s6(a) of the RMA. There are six primary catchments crossed by the proposed highway, namely Koputaroa Stream tributaries, Ohau River, Kuku Stream, Waikawa Stream, Manakau and Waiauti Streams and Waitohu Stream tributaries. All but one of the catchments lie within the HDC and Horizons rohe, with only the Waitohu Stream catchment falling within KCDC and GWRC jurisdiction.

21 Horizons and GWRC objectives and policies relating to natural character are set out in my s87F report in paragraphs 23-28.

- 22 KCDC's District Plan is largely silent on natural character although Objective DO-02 discusses improving indigenous diversity and ecological resilience through:
- (a) encouraging restoration of the ecological integrity of indigenous ecosystems;
 - b) enhancing the health of terrestrial and aquatic ecosystems; and
 - c) enhancing the mauri of waterbodies.
- 23 HDC's District Plan has a suite of policies on natural character including:
- (a) Policy 3.3.1: To protect the natural character of lakes, rivers and other water bodies and their margins, from inappropriate use, and development;
 - (b) Policy 3.3.3: Manage the design, location and scale of subdivision and/or land development and use adjoining lakes, rivers, wetlands and other water bodies so they retain their special values and natural character;
 - (c) Policy 3.3.4: Ensure subdivision, use and development protects the natural character of lakes, rivers, wetlands and other water bodies and maintain and enhance their special values by having regard to a range of matters. These include: the extent to which natural processes, elements and patterns that determine the area's natural character are sustained, and/or restored and rehabilitated; functional necessity to be located in or near the water body and no reasonably practicable alternative locations exist; and ability to mitigate any potential adverse effects of development;
 - (d) Policy 3.3.6: Promote and encourage the development or maintenance of riparian planting along water body margins; and
 - (e) Policy 3.3.8: Promote a strategic approach to the management of lakes, rivers, wetlands and other water bodies and their margins and catchments, particularly by using management plans for areas with significant environmental issues that require a collaborative approach with other groups or organisations.
- 24 The Horowhenua District Plan (HDP) identifies landscape domains with specific landscape character, visual quality, primary productive values and sensitivities. The Ō2NL Project crosses four of these landscape domains, including Levin-Koputaroa, Levin-Ohau, Kuku and Manakau Downlands. Each landscape domain has a specific

policy relating to, amongst other attributes, its natural character. The policy generally is worded with the aim of ensuring that the natural habitats, and the margins of rivers, streams, estuaries and wetlands, particularly riparian areas adjacent to the Ohau River, Waikawa Stream and Manakau Stream, are identified and protected from inappropriate development.

Rural character/landscape character and visual amenity

- 25 HDC Objective 3.1.1 addresses outstanding features and landscapes and high amenity landscapes, as do Policies 3.3.2 and 3.1.3 and 3.1.8. The Ō2NL Project does not affect any outstanding features and landscapes in Horowhenua. It crosses the Manakau Downlands, identified as having High Landscape Amenity in the HDC District Plan.
- 26 Objective DO-03.6 addresses identified landscape and features and other places of significant natural amenity. NE-P1 addresses the protection of outstanding natural features and landscape. The Ō2NL Project does not affect any outstanding features and landscapes in Kāpiti. KCDC's District Plan Kāpiti has one identified Special Amenity Landscape, Pukehou, that is in proximity to the Project. Pukehou is acknowledged in the CEDF but is not physically affected by proposed works.
- 27 Both District Councils have objectives and policies regarding the maintenance of rural character. These have been set out in the Technical Assessment, in Appendix D.2.
- 28 The overall directive of the Rural Environment Chapter of the HDP is to protect the rural character and amenity values that are based primarily around primary production. The plan has specific directives on managing development that is sensitive to identified attributes of landscape character areas, referred to as landscape domains. Relevant provisions include Objective 2.1.1, Policy 2.1.7, 2.2.9, 2.1.19, 2.1.20 and 3.1.7, as well as the landscape domains addressed in Policy 2.1.2.
- 29 KCDC's District Plan has a similar directive to sustain the productive potential of land and notes that the general openness of rural land and presence of various types of primary production activities form part of its valued rural character. Relevant provisions include District Objectives DO-011, DO-013, Earthworks EW-P1, General Rural GRUZ-P2 and GRUZ-P5.

Transport Infrastructure

- 30 Chapter 10 of the HDP addresses Land Transport. Objective 10.2.2 requires 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.
- 31 The objective of KCDP DO-13 Infrastructure, is (to paraphrase) to ensure the efficient development, of an adequate level of infrastructure that meets the needs of the community and the region; and builds stronger community resilience, while avoiding, remedying or mitigating adverse effects on the environment.

G. REVIEW OF NOTICES OF REQUIREMENT

Matters of agreement

Methodology

- 32 I support the methodology used in the Technical Assessment for the assessment of existing natural character, and assessment of landscape, visual, natural character and construction effects, which is unchanged from the earlier drafts which I reviewed, and is in line with the current landscape practice requirements set out in 'Te Tangi a te Manu– Aotearoa New Zealand Landscape Assessment Guidelines'².
- 33 This includes use of the 7 point scale where reference is made to degree or magnitude. I reproduce this scale here as Table 1, for clarity and reference for this report.³

very low	low	low- moderate	moderate	moderate- high	high	very high
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Table 1: Scale of effects

² Tuia Pito Ora/New Zealand Institute of Landscape Architects, June 2022.

³ Gavin Lister. Technical Report D. Appendix D.1: Methodology. Page 103-104.

- 34 I agree with the methodology used by in the Assessment for identifying effects on private property through the distance of the house from the carriageway, the apparent orientation of the house and its living areas, whether the proposed road is elevated or in a cutting and the alignment of the carriageway and its orientation to the dwelling.
- 35 The methodology used to generate the photosimulations in the Technical Assessment is in line with the current landscape practice requirements. I agree with the decision to not show detailed design features such as road markings, vehicle barriers etc, as well as the yet-to-be designed mahi toi elements including the narratives to be integrated into the design. Not showing proposed taller planting where it would screen views of the highway features and the rehabilitation planting on the earthworks footprint is also standard practice as, in some locations, a photosimulation showing all the proposed planting would screen sections of the highway (or the highway in its entirety).
- 36 I agree with the definition and description of the six landscape character areas, which are based on the landscape domains described in the HDP, and the balance area that lies in the KCDC rohe. Levin-Koputaroa, the northern landscape domain, has been subdivided into two sections in order to separately address the area that now falls within Tara-Ika planned urban development enabled by PC4 to the HDP. The six landscape areas include:
- (a) Levin-Koputaroa (north and north-east of Levin part from tie-in with existing SH1 to Queen Street East);
 - (b) Levin-Koputaroa landscape character area (east of Levin and Tara-Ika from Queen Street East to Tararua Road);
 - (c) Levin-Ohau;
 - (d) Kuku;
 - (e) Manakau Downlands; and
 - (f) Pukehou.

Mitigation measures

- 37 I endorse the Draft Cultural and Environmental Framework (CEDF), which is proposed to be a living document that will be developed through the life of the Project. It identifies the core design principles, constraints and opportunities of the Project, and sets out the anticipated design response for landscape elements, planting, long term natural character restoration, the road design including highway furniture, earthworks, material

supply sites, connectivity and the shared use pathway, amongst other elements. The CEDF is intended to give effect to the partnership of the project between Waka Kotahi and Muaūpoko and Ngāti Raukawa.

38 I also agree with the proposed landscape, visual and natural character planting illustrated in the Planting Concept Plans.

39 Waka Kotahi has determined that the proposed Tara-Ika development does not form part of the 'existing environment' for the purposes of the technical assessments. However the Ō2NL highway and the bridges, shared path and plantings associated with the road corridor will form a large part of the receiving landscape for the future urban development.

40 For this reason, I support the measures Mr Lister has outlined in paragraphs 108-109 of the Technical Assessment to provide for integration between the Ō2NL Project and Tara-Ika including:

- (a) The location of the shared path east of the highway;
- (b) The continuous band of dense vegetation east of the highway from Queen Street East to Tararua Road (CH16150 – 18250);
- (c) Vegetation on the fill batters and trees around the overbridges at Queen Street East and Tararua Road to soften these structures;
- (d) Extending vegetation around the stand of bush between the highway landscape works and Arapaepae Road; and
- (e) Naturalising the stormwater wetlands including contouring the form of the wetlands and naturalised margin planting.

41 It is my opinion that the provision of an integrated interface between the Ō2NL Project and Tara-Ika, and connectivity between Tara-Ika and the Levin area west of the highway, is critical to achieving positive landscape and visual amenity outcomes.

42 Given the certainty that Tara-Ika will be developed, I endorse Mr Lister's approach regarding potential measures that could be further adopted to mitigate impacts on amenity values of the planned urban development and its connectivity with the existing Levin urban area.

Effects on visual amenity

- 43 I agree with the provision of the Visual Effects Inventory in Appendix D.3 that identifies every property where adverse effects would be moderate or greater. The table identifies the mitigation proposed within the designation for properties where effects are *moderate* or greater.

Effects on landscape character

- 44 I generally agree with the assessment of effects on landscape character, both before mitigation and once the proposed mitigation measures have been implemented. These are set out for each landscape domain in Table 2 below.

Effects on Landscape Character	Adverse effects pre mitigation	Adverse effects post mitigation
Levin-Koputaroa (north & n/east of Levin from tie-in with existing SH1 to Queen St East)	high	moderate- high
Levin-Koputaroa (east of Levin and Tara-Ika from Queen St East to Tararua Road).	moderate- high	moderate
Levin-Ohau	moderate	low- moderate
Kuku	low- moderate	low
Manakau Downlands	high	moderate- high
Pukehou	moderate	low- moderate

Table 2: Summary of effects on landscape character⁴.

Effects on natural character

- 45 I agree with the assessment of natural character effects and the proposed mitigation measures including restoration planting, defined as planting on natural landform outside any project earthworks, and rehabilitation planting that is defined as planting on land disturbed by project earthworks. This has been discussed in detail in my s87F report⁵ paragraphs 40-45.
- 46 Regarding natural character, the proposal to extend riparian restoration planting beyond the designation and into the wider stream and wetland landscape context promotes the restoration of the waterways and wetlands. I consider this to be an appropriate mitigation response to the adverse effects of the highway and bridge construction on natural character, as it will 'knit' the waterway systems back into the

⁴ Summarised by Julia Williams from Technical Assessment paragraphs 86-157.

⁵ S87F report on Natural Character for GWRC and Horizons. Julia Williams April 2023

wider landscape. Furthermore, there is a mutually beneficial relationship between wetland and riparian mitigation planting and natural character planting, as referenced in the Natural Character Restoration strategy set out in the CEDF. Planting for riparian and wetland ecological offsetting and mitigation contributes to and enhances natural character.

- 47 Conversely, natural character planting, particularly in the form of riparian and wetland planting, has benefits for ecological connectivity and potential to increase ecological values over time.
- 48 Issues of terrestrial and freshwater ecological mitigation are beyond my area of expertise. However, any indigenous revegetation that can be seen from the road, bridges or the shared path, improves the natural appearance of the highway landscape. From a landscape natural character perspective, there is little difference between the designated 'ecological mitigation planting' on the margins of rivers and streams, in gullies and around wetlands and 'natural character planting'. Both planting typologies increase the visibility and naturalness of the rivers, streams and associated gullies and wetlands.

Construction effects

- 49 I agree with the assessment of construction effects in the Technical Assessment, and support the proposal to recontour and rehabilitate material supply sites, and recontour and restore spoil disposal sites.

Matters of disagreement

Visual mitigation on private property

- 50 While in most instances, visual mitigation for properties will be provided by the wider landscape design within the designation, the Technical Assessment acknowledges that that the Project will have significant adverse visual effects for some residents.
- 51 There is some inconsistency in the report regarding what the trigger point might be for Waka Kotahi to provide additional visual mitigation on private property. In other words, what level of adverse visual effects would be considered reasonable or acceptable.
- 52 The Executive Summary in the Technical Assessment states at paragraph 5 that *'Mitigation is recommended for those properties assessed as having adverse effects*

that are moderate or greater⁶. Such mitigation will be largely provided through the broad scale planting proposed for landscape and natural character reasons, but there are instances where additional specific mitigation is required.’

- 53 Similarly Appendix D.3: Visual Effects paragraph 2 states ‘Mitigation is warranted for properties where the adverse effects would be moderate or greater⁷. Such mitigation has been incorporated into the overall landscape plans..... While the mitigation will reduce the degree of visual effects, it is not possible to reduce all such effects to less than ‘moderate’. There may be opportunities to provide further mitigation on affected properties which would be subject to agreement between property owners and Waka Kotahi.’
- 54 In contrast, in his assessment of visual effects in paragraphs 165 -167, Mr Lister describes negotiations undertaken by Waka Kotahi with owners of properties that are affected by the designation but where the house itself is outside the designation. He states at paragraph 166 that ‘Mitigation is recommended for those properties assessed as having moderate effects or greater’ but ‘where planting within the designation is not sufficient to reduce adverse visual effects to a reasonable level, moderate or less⁸, it is proposed to offer owners of affected properties additional planting to be carried out on the affected properties’ (at paragraph 167).
- 55 This is set out in Condition DLV2 c): Where the assessment of visual effects required by clause (a) concludes that the adverse visual effects on a dwelling are ‘moderate’ or greater the requiring authority must consult with the owners of the dwelling and offer to develop and implement a plan for mitigation of visual effects of the Project on the affected property to further screen views of the Project.
- 56 On 13 January 2023, after the notices of requirement had been lodged, Waka Kotahi addressed what it described as ‘the discrepancy between Technical Assessment D and the condition DVL2 in an email to the planners for the District and Regional Councils. It confirmed, as per paragraph 167 of Mr Lister’s Assessment report, that Waka Kotahi would offer to undertake planting on private property where residual effects are higher than moderate following treatment within the designation (on site), and the wording of condition DVL2 would be adjusted accordingly.

⁶ My emphasis.

⁷ My emphasis.

⁸ My emphasis.

- 57 Clearly there is a discrepancy whether planting on private property would be offered to residents where residual effects are moderate or higher; or residual effects are greater than moderate.
- 58 Whatever Mr Lister's intention or Waka Kotahi's interpretation, it is my opinion that there is an inconsistency (which is not justified in terms of effects) between the recommendation that visual mitigation be provided within the designation for those properties assessed as having adverse visual effects that are *moderate* or greater, but only provided to affected properties outside the designation where planting within the designation is not sufficient to reduce effects to *moderate* or less.
- 59 In total, 24 properties have been identified as warranting additional landscape mitigation. Based on the Technical Assessment Appendix D.3 inventory, they all are properties where residual adverse visual effects (following landscape and visual mitigation within the designation) are moderate-high or high. There are 6 properties listed as located in the Levin -Koputaroa catchment.
- 60 I have reviewed the Levin -Koputaroa section of the inventory and there are 8 other properties with dwellings that also have more than moderate residual effects but are not recommended for additional mitigation, although some of these may have subsequently been purchased by Waka Kotahi. There are numerous properties where residual effects are *moderate*.
- 61 Based on this sample, it is difficult to ascertain how many additional properties along the length of the Project might be offered on-site visual mitigation for residual effects that are *moderate* or greater.
- 62 I acknowledge there will be properties where mitigation is simply not achievable, or properties where owners are not interested in mitigation planting. However, it is my opinion that the mitigation requirements should be consistent, whether mitigation occurs inside or beyond the designation. Therefore I agree with the recommendation in the Executive Summary of the Technical Assessment that mitigation be provided for those properties assessed as having adverse effects that are *moderate* or greater.
- 63 I recommend Condition DVL2 c) be retained set out in the lodged notices of requirement.

Differentiation between landscape and natural character planting

- 64 I consider the Planting Concept Plans: RMA Purpose Type to be confusing. The areas defined as natural character planting seem somewhat arbitrary. Sites shown as wet forest, wetland, riparian margin, wetland, restoration planting and enrichment planting typologies in Planting Concept Typology plans are identified as areas of natural character in Planting Concept plans for RMA purposes. In my professional experience I have never worked with or reviewed projects where planting has been described as 'natural character' planting on concept plans. This is not to say that I disagree with the process but the rationale behind the labelling has not been set out in Technical Report D, the concept plans or the CEDF.
- 65 Furthermore, natural character planting has been bundled with landscape and visual planting. Consequently, the detailed design, implementation and maintenance of the natural character planting is addressed through the District Council conditions and effectively removes any overview from the Regional Councils.
- 66 On this basis I recommend that natural character component be removed from the landscape and visual plantings in DLV1, and instead be addressed Regional Resource Consent conditions and incorporated into the Schedule 7: Ecological Management Plan. I have discussed this in my s87F report in paragraphs 49 and 69 – 73.

Planting Performance Standards

- 67 Appendix 5 proposes condition DLV1⁹ for landscape planting. For additional quality assurance, I recommend that all planting, whether it is for landscape, visual mitigation or natural character purposes, be implemented, maintained and managed in accordance with an agreed set of specifications. While the detail may be further updated and refined during the design process to create a more bespoke specification, at the very least Waka Kotahi's own in-house specification, P39 Specification section G Planting¹⁰ should be referenced in the Conditions as the base standard for planting works.

⁹ Revised Conditions 21 March 2023

¹⁰ An appendix to the NZTA Landscape Guidelines (Final Draft) September 2014.

Certification

- 68 The draft CEDF is proposed to be a living document that will be developed through the life of the project. As I have described in paragraph 37 of this report, it is intended to give effect to the partnership between Waka Kotahi and Muaūpoko and Ngāti Raukawa. It also identifies the core design principles of the Project and sets out the anticipated design response for landscape elements including planting, long term natural character restoration and the shared use pathway.
- 69 Waka Kotahi has confirmed, as set out in proposed conditions DTW5 and DGA6(c).ii, that Design Review Audits will be carried out and made available to the Councils on request, but there is no formalised scope for questioning, comment and/or certification.
- 70 I do not regard using an internal audit as best practice. Without a robust monitoring and certification pathway, there is no obligation for Waka Kotahi to make any design refinements irrespective of the outcome of any engagement process that may occur.
- 71 District Councils manage the landscape that the road sits in. From a landscape perspective, many of the design decisions that will be made in the CEDF affect the local and wider landscape in terms of biophysical, visual and cultural/social values. Regional Councils too have a particular interest in the rehabilitation and restoration strategy and the longer term natural character restoration.
- 72 District and Regional Councils hold up to date, in-depth information on their districts and have access to expert stakeholder inputs. They can and should provide meaningful input into the CEDF. Such inputs are often provided by an expert design review panel including Council officers.
- 73 I recommend that the proposed conditions are amended to give both District and Regional Councils a role in certifying the CEDF and a role in monitoring the planted areas until they meet the specified performance targets.

Proposed natural character planting outside the designation

- 74 The Planting Concept Plans provide for planting to mitigate effects on natural character within the proposed designation and, as required, beyond the designation on private land. The plans identify natural character planting outside the designation to be subject to landowner approval.

- 75 In its s92 response, Waka Kotahi confirmed that without landowner approval this planting will not occur and the extent to which adverse effects on natural character values are mitigated will be constrained. It has offered alternative sites for off-setting in the event that landowner approvals are not provided. However, by definition, natural character (or at least the landscape component of natural character) is site-specific and relies on the perceived naturalness of the river/stream/wetland landscape that can be viewed from the highway, bridges and the shared use pathway. Offsetting therefore does not and cannot mitigate perceived effects on natural character.
- 76 Generally, the natural character offset planting proposed is adjacent to or embedded in terrestrial and wetland offsetting sites. The purpose of the proposed natural character offset planting outside the designation, particularly the riparian restoration upstream and downstream of the highway, is to increase the naturalness of the waterways and wetlands. In other words, the planting has been designed to balance the presence of the Project and mitigate the effects of the road, bridges, traffic and lighting on the perceived naturalness of the wider landscape context.
- 77 I have addressed the issue with off-setting effects on natural character using planting in my s878F report in paragraphs 50 – 62, noting that without mitigation through natural character riparian restoration planting on private property, existing levels of natural character are reduced in all catchments by one level of magnitude, based on the evaluation scale set out in Technical Report D.11.
- 78 Based on the information provided by Waka Kotahi to date, I have limited confidence that existing levels of natural character will be maintained across the one KCDC and five HDC catchments if landowner approval for planting on private properties cannot be obtained, and planting is confined to the designation areas. I do not consider that this would achieve the HDC's Policy 3.3.4 (to ensure development protects the natural character of lakes), or Policy 3.3.6 (to promote and encourage the development or maintenance of riparian planting along water body margins, rivers, wetlands and other water bodies and maintain and enhance their special values). Nor does it achieve Horizons Policy 6-8 (b) (to provide for the restoration and rehabilitation of natural character) and GWRC's Policy P24e) (to preserve natural character by avoiding, remedying or mitigating adverse effects).

¹¹ Technical Report D:Appendix D1:Methodology. Paragraph 12.

H. REGULATORY REVIEW ASSESSMENT

- 79 I acknowledge the need for the Ō2NL Project to avoid the coastal environment to the west of the existing SH1, and the functional necessity for the highway to cross the waterways of six catchments. By definition, this will have an impact on natural character values.
- 80 Both Regional Councils have strong directives regarding natural character in their regional plans. HDC also has a focus in its District Plan on maintaining and enhancing the special values of rivers, wetlands and other water bodies, and encouraging riparian planting.
- 81 The Technical Assessment discusses the fine-tuning of the highway layout, and the river and stream crossings, and sets out a package of mitigation measures to provide for the restoration and rehabilitation of natural character. To this extent I agree with Mr Lister that the Ō2NL Project complies with Horizons Objective 6-2 (b)(iii), and HDC's Policy 3.3.1 and the relevant natural character policies for each Landscape Domain.
- 82 However there is some uncertainty that existing levels of natural character can be maintained post construction, given the quantity of natural character and ecological mitigation that is subject to landowner approval.
- 83 The Ō2NL Project does not affect any identified outstanding natural features and landscapes or special amenity landscapes.
- 84 The overall directive of the Rural Environment Chapter of the HDP and the General Rural Zone in the KCDP is to protect the rural character and amenity values that are based primarily around primary production. This new roading infrastructure running through a largely rural landscape will have an impact on landscape character and visual amenity values. However I acknowledge that the technical assessment references the specific landscape character and visual attributes of each landscape domain crossed by the Project and details the proposed mitigation measures to reduce landscape and visual effects.
- 85 In my opinion, providing that the proposed landscape mitigation measures set out in the draft CEDF and Planting Concept Plans are fully implemented, adverse effects on landscape character and visual amenity will be avoided, remedied or mitigated as far as is practicable.

I. SUBMISSIONS

- 86 I confirm that I have read the relevant submissions and have identified (in a table attached to my evidence) those which raise submissions relevant to landscape character or visual amenity effects.
- 87 Two submissions raise the potential change in rural character, expressing a desire to maintain existing rural landscape character.
- 88 Nineteen submissions raise concerns arising from potential effects on visual amenity. The concerns expressed in the submissions generally relate to specific effects anticipated on individual properties, including light spill from traffic and road lighting, loss of privacy, views of the highway, loss of views to the Tararua Ranges and changes to rural lifestyle amenity.
- 89 Submitter 48, Kevin Daly, is concerned about the future visual effects and traffic lights effects on the wider Tara-Ika site resulting from the proposed road.
- 90 No submissions directly addressed natural character although two individual submissions and the ten hapu submissions made oblique reference to natural character issues in the form of pest control, planting the streams, long-term planting management and embedding the CEDF as the framework for delivering and defining Project outcomes.

J. CONDITIONS

- 91 I recommend that all planting, whether it is for landscape, visual amenity or natural character purposes, be implemented, maintained and managed in accordance with an agreed set of specifications. While the detail may be further updated and refined during the design process to create a more bespoke specification, at the very least Waka Kotahi's Landscape Guidelines Specifications should be referenced in Condition DLV1 as the base standard for planting works.
- 92 I recommend Condition DVL2 c) be retained set out in the lodged notices of requirement: Where the assessment of visual effects required by clause (a) concludes that the adverse visual effects on a dwelling are 'moderate' or greater, the requiring authority must consult with the owners of the dwelling and offer to develop and implement a plan for mitigation of visual effects of the Project on the affected property to further screen views of the Project.

- 93 I recommend that natural character component be removed from the landscape and visual plantings in DLV1, and instead be addressed Regional Resource Consent conditions and incorporated into the Schedule 7: Ecological Management Plan.
- 94 I recommend that the conditions be amended to give both District and Regional Councils a role in certifying and monitoring the CEDF, and a role in monitoring and certifying the planted areas until they meet the specified performance targets.

K. CONCLUSION

- 95 I have reviewed the landscape, visual and natural character components of Technical Assessment D and agree with the conclusion in that Assessment that potential adverse landscape, visual and natural character effects have been avoided or reduced by the location of the proposed road corridor.
- 96 Mitigation measures have been proposed by Waka Kotahi to address residual effects, based on the design principles and landscape and highway design set out in the CEDF, and the planting concept plans. For this reason, it is my opinion that District Councils require a role in certifying the CEDF, as well as greater oversight into the planting design, specification, implementation and long term monitoring of landscape plantings.
- 97 Mitigation measures to address adverse effects on residential amenity have been proposed by Waka Kotahi for properties where effects have been assessed by Mr Lister as *moderate* or greater. I support this proposal to mitigate effects that I regard as being more than minor.
- 98 The overall natural character mitigation will be managed through a long-term restoration concept set out in the CEDF. There is potential to maintain existing levels of natural character across the six affected catchments providing that the proposed mitigation measures are fully implemented.

Julia Williams



28 April 2023

Appendix 1 – Ōtaki to north of Levin Highway Project (Ō2NL Project)

Landscape Character/Visual Amenity Effects- Summary of Relevant Submissions (wording generally lifted directly from the submission)

#	Submitter Name	Landscape character	Effects on Visual amenity	Natural character
2	Sjaan Henry 82 Waihou Road		Replace front fence for privacy	
3	Neil & Sheryl Whyte		At the very least a new front fence to make our property more private and help reduce noise levels.	
8	Wendy McAlister-Miles and Dion Miles 195_Muhunoa East Road, Ohau		Wider outdoor amenity affected	
10	Gary Williams - Waterscape		Lighting pollution – submitter located near a bridge.	
11	Adam & Richard McCallum		Privacy for yet to be built house on grazing land. Concern views into house.	
20	Louise Miles	The project will have significant adverse effects on the quality of the existing living environment in terms of the rural and village lifestyle effects	It is not possible to determine from the likely extent of screening of the proposed Expressway when viewed from the elevated parts of Manakau Village, from Mokena Kohere Street looking northward, or from my property (on which I plan to construct a dwelling soon.	
21	Ross Wallis		The building of the Expressway will demean the current associative and livable values of the adjoining remaining land block that wife Christine Wallis grew up in.	
22	Glenys Anderson		Concern re effects on rural lifestyle & enjoyment of outside amenity. For visual effects we request Bunding and tree/vegetation planting to protect our privacy.	

23	Stephen and Miriam Main		Issue Four Visual impact, Solution Four Early planting of fast growth native plants and noise absorbent foliage,.	
25	Maria Storey		Light pollution	
29	Martyn Vause 677A, SH1		Concerns vehicle light spill and wants effective fencing or planting. Wants property to be given same consideration as Manakau properties	
36	Dakin Branwell		Light pollution	
40	Rochelle and Matthew Apatu – 73 Wakefield Road, RD1 Levin		It has been suggested by members from Waka Kotahi that shelter belts planted down our boundary along side where the corridor shall sit would potentially help eliminate visual impact and possibly any dust.	
47	Janice Jakeman	Maintain rural character as much as possible.	Undesirable views of all the traffic on the expressway Loss of view to the Tararua Range. Wants mainly low to medium level planting on the overpass/new local road to maintain views to the range. High density planting to screen off the expressway	
48	Kevin Daly. See detail below		<i>Visual Impact and Light pollution for</i> Tara-Ika The noise bund, with appropriate landscaping, would not only assist with mitigating noise, but also addressing any future visual effects and traffic lights resulting from the proposed road.	
49	Karen and Stephen Prouse 1024 Queen Street East, Levin		Visual impacts have not been adequately addressed as some changes have occurred since the 2020 assessment. Technical reports have not identified the visual screening/ noise mitigation to be provided for within the designation boundaries to mitigate the effects on Ashleigh homestead, amenity and land environment, despite our	

			engagement with the process and a number of meetings to discuss these concerns. There is insufficient visual screening planned for Ashleigh homestead and property within the boundary of the highway.	
62	Royal Forest and Bird Protection Society INC			An absence of appropriate pest plant and animal control to establish the plantings. Achieving 90% canopy cover after eight years does not guarantee long-term viability of the offset and provision for follow up monitoring, weed control and enrichment planting is necessary.
71	Sarah Hodge 11 Ihaka Hakuene Street, Manakau via Levin		Visual effects – it appears on the map that they have misunderstood our position overlooking the motorway. It shows us as being surrounded by trees so there would be no visual effect but that is completely inaccurate. Our home and work both look out over the proposed motorway site and it will be fully visible to us. I want the light issues to be re-investigated with a stronger resolution proposed.	
74	Muaūpoko			A mahi toi plan contains a minimum description of how our Muaūpoko narrative and cultural connections will be uplifted. Planting of each awa upstream and downstream and cut and fill planting.
77	Brendon Liggett (Kainga Ora) 242 Muhunoa East Road and 96/98 Arapaepae Road, Levin.		Provide an appropriate buffer for visual mitigation measures that take into account the particular needs of the residents residing within the two properties	

79	Simon Austin		Concerns light spill from traffic	
80	Ngā Hapū o Ōtaki on behalf of 10 hapu (submissions 81-90)			Embed the CEDF as the framework for delivering and defining Project outcomes, including the Core Principles set out in Chapter 1, the Design Principles set out in Chapter 3, and the Design Response set out in Chapter 4 of the CEDF.
#	Submitter Name	Landscape character	Effects on Visual amenity	Natural character
		2	19	3 + 10 hapu

APPENDIX 3

NOISE AND VIBRATION – SIIRI WILKENING

IN THE MATTER of the Resource Management
Act 1991

AND

IN THE MATTER of notices of requirement by
Waka Kotahi NZ Transport Agency to Kāpiti Coast
District Council and Horowhenua District Council
for designations to construct, operate, maintain
and improve a new state highway and shared use
path and associated infrastructure, between
Taylors Road (to the north of Ōtaki) and State
Highway 1 north of Levin.

SECTION 198D REPORT OF SIIRI WILKENING – NOISE AND VIBRATION

**KĀPITI COAST DISTRICT COUNCIL AND
HOROWHENUA DISTRICT COUNCIL**

28 April 2023

A. OUTLINE OF REPORT

- 1 This report, required by section 198D of the Resource Management Act 1991 (“**RMA**”), addresses the issues set out in sections 171 of the RMA, to the extent that they are relevant to the notices of requirement lodged with the Kāpiti Coast District Council (“**KCDC**”) and Horowhenua District Council (“**HDC**”).
- 2 The notices of requirement given by Waka Kotahi NZ Transport Agency (“**Waka Kotahi**”) to KCDC and HDC, are for a designation to construct, operate, maintain and improve a new state highway and shared use path and associated infrastructure, between Taylors Road (to the north of Ōtaki) and State Highway 1 north of Levin. The project is known as the Ōtaki to North of Levin Highway Project (the “**Ō2NL Project**” or “**Project**”).
- 3 In addition, Waka Kotahi has separately applied for resource consents (“**Applications**”) relating to the Ō2NL Project to Manawatū-Whanganui Regional Council (“**Horizons**”) and Greater Wellington Regional Council (“**GWRC**”), respectively.
- 4 This report addresses noise and vibration issues (both in relation to the construction and operation of the Project) with regard to the notices of requirement lodged with KCDC and HDC.
- 5 In preparing this report, I have relied on the expert advice from the following technical advisors:
 - (a) “*Ōtaki to North of Levin: Technical Assessment B Noise and Vibration*” by Michael Smith, Altissimo Consulting Ltd, dated 28 September 2021;
 - (b) “*Response to HDC comments*” by Michael Smith, Altissimo Consulting Ltd, dated 14 March 2022;
 - (c) Evidence “*Ōtaki to North of Levin Highway Project: Technical Assessment B: Noise and Vibration*” by Michael Smith, Altissimo Consulting Ltd, dated 11 July 2022, including the following appendices:
 - a. Appendix B4 “*Predicted noise levels*” by Altissimo Consulting Ltd, (undated, received 21 July 2022);
 - b. “*Ō2NL_NV_B Noise Modelling Report*” by Michael Smith, Altissimo Consulting Ltd, dated 4 July 2022 ;
 - c. Appendix B5 “*Ō2NL Fig 101-110 Do Nothing*” dated 4 July 2022;
 - d. Appendix B6 “*Ō2NL Fig 201-210 Selected Options*” dated 4 July 2022;

- e. Appendix B8 “Noise survey report” dated 4 July 2022;
 - (d) Waka Kotahi “District Councils Response to combined request for information under section 92 Final”, dated 22 December 2022. Specifically I have reviewed the Noise and Vibration section, Responses 155 to 161;
 - (e) Designation conditions proposed by Waka Kotahi, specifically those relating to noise and vibration.
- 6 While this report is prepared pursuant to section 198D of the Resource Management Act (“RMA”), I have in accordance with section 42A(1A) and (1B) of the RMA attempted to minimise the repetition of information included in the application and where I have considered it appropriate, adopt that information.

B. QUALIFICATIONS / EXPERIENCE

- 7 My name is Siiri Wilkening. I am a Director at Marshall Day Acoustics. I have been with Marshall Day Acoustics since early 1998 and in my current position since June 2021.
- 8 I hold a Master’s degree in Environmental Engineering (Land Improvement and Environmental Protection) of the University of Rostock (Germany). I am a member of the Acoustical Society of New Zealand and served on its committee as treasurer or secretary from 2000 until 2022.
- 9 Over the last 25 years, I have been involved in investigating and reporting on environmental noise and vibration effects for a wide range of projects, including in relation to road, rail, ports, quarries, urban development and construction, industrial and power generation activities and educational facilities. The main focus of my work relates to road traffic noise and construction of roads. I was the lead acoustician for Waka Kotahi on projects such as SH1 MacKays to Peka Peka, East West Link, SH1 Northern and Southern Corridor Improvements, SH2 Takitimu North Link and other major roading projects, and the peer reviewer for Council on the Basin Reserve roading project. I was also involved in the development and testing of New Zealand NZS6806:2010 Acoustics – Road-traffic noise – New and altered roads (**NZS 6806**). I have given evidence at council hearings, the Environment Court, the Arbitration Court and before five Boards of Inquiry. I have also taken part in Environment Court mediations.
- 10 I am familiar with site and surrounding area. I visited the site along with other HDC, KCDC, Horizons and Greater Wellington experts on 24 April 2023.

C. CODE OF CONDUCT

- 11 I confirm that I have read and agree to comply with the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023. I confirm that I have stated the reasons for my opinions I express in this report, considered all the material facts that I am aware of that might alter or detract from those opinions, and that the report and the issues I have addressed are within my area of expertise.
- 12 I have addressed the following issues in this report:
- (a) Construction noise and vibration assessment undertaken by Waka Kotahi, management and mitigation proposed and residual effects on neighbouring buildings and occupiers; and
 - (b) Traffic noise and vibration assessment undertaken by Waka Kotahi, mitigation proposed and residual effects on neighbouring residents.
- 13 Statements expressed in this report are made within the scope of my expertise, except where I rely on the technical reports I have referred to in paragraph 5 of this report.
- 14 I have all the information necessary to assess the application within the scope of my expertise and am not aware of any gaps in the information or my knowledge.

D. EXECUTIVE SUMMARY

- 15 I have reviewed the relevant application document for the Ō2NL Project in relation to noise and vibration. Overall, the assessment undertaken of construction noise and vibration is high level, while the assessment of traffic noise is extensive. This is appropriate for a project of this nature.
- 16 The key conclusions of my report include:
- a. Construction noise and vibration is proposed to be managed through a well understood and tested process of Construction Noise and Vibration Management Plan (**CNVMP**) and Schedules. The conditions proposed by Waka Kotahi, as currently drafted, did not reflect this process, and I have recommended additional wording to ensure that the process will be robust.

- b. Traffic vibration is not an issue with new, well constructed roads, and I do not consider that additional assessment or conditions will be required.
- c. Operational traffic noise has been assessed through a multi pronged approach, with the main focus being NZS6806. The outcomes appear reasonable and as expected. Mitigation is proposed in the form of high performing low noise road surface (EPA7 50mm) and some low height barriers. I agree with Mr Smith that the proposed mitigation appropriately manages the actual and potential noise effects from the operation of the new highway, and have recommended amended condition wording to ensure that the outcomes are as proposed.
- d. Overall, traffic noise levels are predicted to reduce slightly to noticeably for a large population adjacent to the existing SH1 but will increase significantly for PPFs that are currently remote from manmade noise sources. This is expected for a project like this where a new road is constructed in a rural area. I agree with Mr Smith that the residual effects are overall acceptable, provided the mitigation proposed is implemented.

17 Subject the amendments I have recommended, the conditions proposed by Waka Kotahi are worded such that the outcomes of the traffic noise assessment will be achieved with high likelihood. In particular the traffic noise assessment is based on the use of specific road surfaces, and provides the location and lengths of the surface and barriers. These requirements are reflected in the proposed conditions.

18 Construction noise and vibration are less simple to calculate and are dependent on many factors such as the equipment used, the state of repair of the equipment, operator idiosyncrasies and even soil conditions (i.e. wet heavy soil vs dry brittle soil). Therefore, the construction noise and vibration assessment focuses more on the management of the effects than the level of effect. I concur with this approach and apply it similarly to my own projects.

E. SCOPE OF REPORT

19 My report focuses only on issues related to construction noise and vibration, and operational traffic noise and vibration. It covers the following topics:

- (a) Existing noise environment;

- (b) Construction noise and vibration, including performance standards, predictions, management and mitigation, and assessment of effects; and
- (c) Operational traffic noise and vibration, including performance standards, predictions, mitigation, and assessment of effects.

20 As noted above, I have also reviewed and relied on the information provided by:

- (d) Drawings provided with the application; and
- (e) The heritage assessment (in part) as it relates to the Ashleigh homestead.

F. BACKGROUND

21 The Project involves the construction and operation of a new 24 km four lane state highway from north of Otaki to north of Levin. It will traverse land with generally rural characteristics and will deviate from the existing SH1 into less developed land.

22 Construction noise and vibration has been assessed against specific standards that allow for higher noise and vibration levels as these activities are finite and temporary. Traffic noise has been assessed against relevant New Zealand standards and guidelines.

23 My report sets out discussion of the noise and vibration effects from the construction and operational phase separately.

G. REVIEW OF THE PROJECT IN RELATION TO NOISE AND VIBRATION

Construction noise and vibration

24 Construction noise has been predicted and assessed against the provisions of the relevant New Zealand Standard NZS 6803:1999 Acoustics – Construction noise. Construction vibration has been predicted and assessed against the Waka Kotahi Construction vibration criteria set out in the “State highway construction and maintenance noise and vibration guide” (**CNV Guide**). I consider the construction noise and vibration performance standards chosen appropriate.

25 The construction noise and vibration assessment is high level, with little specifics given in terms of mitigation options that may be adopted. The reason given is that no contractor has been engaged and that therefore the relevant detail of information is not currently available. I note that an indicative construction methodology was provided and that the indicative predictions undertaken are based on this methodology. From experience, I consider that road construction has remained

relatively unchanged the past 25 years, with equipment sound and vibration levels remaining relatively similar and methodologies not having changed significantly over time. Therefore, I consider that the assessment undertaken can be given more weight than is expressed in Mr Smith's evidence, and that the indicative noise levels predicted by Mr Smith are likely to be in the correct range to draw on for the assessment of effects.

- 26 Mr Smith has assessed construction noise and vibration using the identified Protected Premises and Facilities (**PPFs**). However, construction noise and vibration criteria apply at all occupied (and for vibration, also unoccupied) buildings in the vicinity. It is important to also include other buildings such as businesses or similar in the construction assessment as noise and vibration can affect occupiers of such buildings. I consider that any noise or vibration effects on buildings not identified in the PPFs can be appropriately addressed through the conditions.
- 27 The construction noise level predictions indicate that daytime noise levels may be exceeded at a number of PPFs. Based on my own calculations, I consider that the noise level predictions by Mr Smith are very conservative and that noise levels will likely be noticeably lower than predicted.
- 28 However, I consider that other buildings may also be affected that have not been captured as a PPF.
- 29 For example, Mr Smith does not identify if any occupied buildings may be affected by construction vibration exceeding 1 mm/s PPV (the Category A daytime criterion relating to amenity protection). Based on Tables B.19 and B.20 of his evidence, I infer from Mr Smith's assessment that no buildings will be within the relevant distance from sheet piling that would exceed this limit. However, it is unclear if the same applies to the use of vibratory roller compactor use, which would occur along the entire alignment (unlike sheet piling, which only occurs at bridges) and may occur close to buildings. Clarification in relation to this, and any additional non-PPF buildings that may be subject to construction vibration effects, may be addressed as part of expert witness conferencing or otherwise by Mr Smith during the hearing. In any event, the required management and mitigation will be appropriately managed in the conditions, specifically the CNVMP.
- 30 The construction noise and vibration management and mitigation proposed are discussed in detail in the assessment. The proposal is to follow the common and well

tested process of a Construction Noise and Vibration Management Plan (**CNVMP**) for the overall management of the entire Project construction, and Schedules for any specific activities where noise and/or vibration criteria are predicted to be exceeded. This process is well established for large scale roading projects and is described in Waka Kotahi's CNV Guide. I consider this approach appropriate and reflecting best practice. The conditions will need to clearly articulate this process, and do not currently do so. Mr Smith references Waka Kotahi's own contractual agreements with contractors.¹ However, these agreements are beyond the control of the conditions, and I therefore do not consider that they are relevant to consider.

- 31 Mr Smith discusses that the CNVMP will be prepared as part of the Outline Plan of Works (OPW) process. At that time, Council will have the opportunity to review and provide feedback on the CNVMP. However, Mr Smith considers that any subsequent Schedules prepared for particularly high noise and/or vibration events should not need to be certified by Council on the basis that the acoustic expert for the Project implementation should be agreed between the Applicant and Consent Authorities so that Councils have confidence that the assessments have been undertaken to a high standard and are appropriate. In general I agree with this approach however the proposed conditions do not currently include this agreement process. Therefore, if the Project acoustic expert is not agreed with Councils, then the Councils should have the opportunity to provide feedback on the Schedules, given that the Schedules are required specifically to manage the highest noise and vibration generating activities and have therefore the highest impact on the outcome (and on individual properties).
- 32 I have reviewed the conditions proposed to manage construction noise and vibration, namely conditions DNV1 to 4. I have the following comments.
- 33 Overall, the conditions follow the "standard" Waka Kotahi conditions, but omit some additions from more recent projects such as a more detailed requirement for Schedules, the process of how management is implemented and the review process of the CNVMP. I discuss the conditions by number below and then make recommendations for the addition of further conditions that set out the management process involving Schedules as described in Mr Smith's evidence, but not carried through into the conditions as currently proposed by Waka Kotahi.

¹ Mr Smith Technical Assessment, paragraph 132.

- 34 Condition DNV1 only provides protection for occupied PPFs and does not include noise performance criteria for other occupied buildings. As set out in Table B.8 of Mr Smith’s evidence, the long term duration noise limits apply to this Project. While the criteria for occupied PPFs are shown in condition DNV1, those for commercial and industrial receivers have been omitted. I consider that they should be included in the condition.
- 35 Condition DNV2 requires compliance, “as far as practicable, so that construction vibration does not exceed the Category A limits” of the table setting out the vibration limits. I agree that the limits of Category A should be complied with as far as practicable as these are generally amenity criteria. However, the condition is silent about the Category B (building damage) criteria in its introduction, which provides for ambiguity. Given that subpoint (c) of the condition sets out a process when the Category B limits are exceeded, I consider that DNV2 (a) should not make mention of Category A vibration limits, or alternatively, should reference both Category A and B limits.
- 36 Condition DNV3, while labelled “Construction noise and vibration mitigation”, only discusses noise levels but not vibration. I recommend that “and vibration” is added after each instance of “noise” in DNV3 (b) to be complete.
- 37 Condition DNV4 briefly discusses the CNVMP, which is part of a suite of management plans of the overall Construction Environmental Management Plan (CEMP). Turning to Schedule 2, the CNVMP will need to be certified through the OPW process, which I agree with.
- 38 Schedule 2 contains only a bare minimum discussion of the CNVMP’s content. It misses a number of issues such as:
- (a) Receivers that are not PPFs are omitted. Subpoint (e) only references PPFs rather than all occupied or unoccupied buildings.
 - (b) The requirement for building condition surveys, should the construction methodology result in vibration levels approaching Category B (building damage) vibration limits, is also omitted.
 - (c) There is no requirement for audits and inspections to be undertaken to ensure that the CNVMP, Schedules and BPO management of effects are being implemented. Mr Smith refers to the review and checking of these issues in his evidence, but this is not reflected in the Conditions.

- (d) There is no requirement to review and update the CNVMP. Given the timeframe of this Project, the CNVMP should be updated annually or biannually to ensure it remains a live and relevant document, and Council should be informed of the updates. Should material changes be made to the CNVMP during such a review, the Council should re-certify the CNVMP.
- (e) There is no requirement for the CNVMP to be prepared by a suitably qualified person agreed between the Councils and the requiring authority. This is recommended by Mr Smith, and should be carried through to the conditions.

39 These issues should be included in the CNVMP content in Schedule 2.

40 Subpoint (h) references Schedules, the backstop and most important management measure for those activities that are predicted to exceed noise or vibration limits and therefore cause the highest adverse effects. The requirement is for the CNVMP to include “... a schedule setting out the mitigation and controls required to minimise effects as far as practicable”. This condition does not set out what content must be included in a Schedule, how communication with affected receivers is to be undertaken and what the process is to determine the BPO management and mitigation.

41 I recommend a specific condition that sets out the objective and content of Schedules as follows. This condition could be included in Schedule 2 of the conditions or as a DNV condition:

(f) Unless otherwise provided for in a CNVMP, a Schedule to the CNVMP (Schedule) shall be prepared by a Suitably Qualified and Experienced Person, agreed between the Councils and the requiring authority, in consultation with the owners and occupiers of sites subject to the Schedule, when:

- i. Construction noise is either predicted or measured to exceed the noise standards in [Condition DNV1];
- ii. Construction vibration is either predicted or measured to exceed the Category A standard at the receivers in [Condition DNV2].

(g) The objective of the Schedule is to set out the Best Practicable Option for the management of noise and/or vibration effects of the construction activity beyond those measures set out in the CNVMP. The Schedule shall include details such as:

- i. Construction activity location, start and finish times;
- ii. The nearest neighbours to the construction activity;

- iii. The predicted noise and/or vibration level for all receivers where the levels are predicted or measured to exceed the applicable standards in Conditions DNV1 and DNV2;
 - iv. The proposed mitigation;
 - v. The proposed communication with neighbours; and
 - vi. Location, times and types of monitoring.
- (h) The Schedule shall be submitted to the Manager for information at least 5 working days, except in unforeseen circumstances, in advance of Construction Works that are covered by the scope of the Schedule and shall form part of the CNVMP.
- 42 With these inclusions, I consider that the conditions provide reasonable certainty that construction noise and vibration effects will be appropriately managed.

Operational Traffic Noise and Vibration

Performance standards used in the assessment

- 43 The assessment of traffic noise was undertaken based on three performance standards: the relevant New Zealand Standard NZS 6806:2010 Acoustics – Road-traffic noise – New and altered roads, guidance criteria of the World Health Organisation (**WHO**) (specifically identifying any PPFs with noise levels above 50 dB $L_{Aeq(24h)}$) and identifying the Disability Adjusted Life Years (**DALYs**) and based on the subjective response to the noise level and character.
- 44 Overall, I consider the performance standards to be comprehensive and reasonable. NZS 6806 has been used across New Zealand on all roading projects I am aware of for the past 10 years, and it has been tested in both the Environment Court and Boards of Inquiry. While some decisions amend the application of NZS 6806 slightly, most follow the Standard and its intentions are unaltered. The application of the Standard leads to an equitable assessment and realistic and implementable mitigation options once a project is being constructed. I consider NZS 6806 to be the main assessment Standard of this Project for road traffic noise.
- 45 This is confirmed in the assessment undertaken by Mr Smith. I note that while each of the above performance standards are discussed (NZ 6806, WHO and DALYs), the determining factor for the identification of the BPO (Best Practicable Option) appears to be NZS 6806, with the other assessment standards not being used for the mitigation chosen. The DALY do not seem to have been included in determining the BPO, and

the WHO guideline level of 50 dB $L_{Aeq(24h)}$ had only marginal, if any, impact on determining the BPO.

- 46 The assessment of DALYs has not been applied in prior New Zealand roading projects to my knowledge. I am therefore cautious about its usefulness in the context of roading projects and this Project specifically. The DALY assessment method used by Mr Smith shows a positive picture for this Project, specifically where a new road moves traffic away from many existing PPFs and close to far fewer new PPFs. This results in an overall improvement of the DALYs, which would not be the case for the majority of roading projects where existing roads are upgraded. Therefore, while the wider assessment of traffic noise effects using DALY provides a positive picture, the results do not necessarily show the adverse effects on individual PPFs, and the assessment does not identify those PPFs that will experience particularly high noise level changes, which I would have expected to see in some instances.
- 47 The WHO guideline noise level of 50 dB $L_{Aeq(24h)}$ is an aspirational level for those PPFs affected by existing traffic noise. Only roads with particularly low traffic volumes could comply with this level where houses are adjacent to the road. For this Project, the majority of PPFs adjacent to existing roads have predicted noise levels above 50 dB $L_{Aeq(24h)}$. Even PPFs somewhat removed from the Project would still receive noise levels above 50 dB $L_{Aeq(24h)}$. While it is a desirable noise level for residential buildings, discussing it may raise unrealistic expectations in residents as compliance with this level is unlikely to be achieved, even with mitigation in place. Therefore, in my opinion, it only serves to provide context, but has little or no bearing on the mitigation design or Project outcome.

Existing environment

- 48 The Project traverses land with generally rural character, which means that ambient noise levels are generally low. A reasonable level of detail has been provided regarding the existing noise environment, which was identified using short and long duration noise level surveys along the route. The current noise environment along the route has been described in some detail. The noise levels are expressed as dB $L_{Aeq(24h)}$ which is directly comparable with the relevant traffic noise performance standards in NZS 6806.
- 49 However, existing noise levels have not been clearly identified for PPFs remote from existing roads. Appendix B4 states that “Where the existing noise environment is not

dominated by road-traffic noise (<50 dB $L_{Aeq(24h)}$), the acoustic environment is expressed as a range of noise levels based on measures and observations in each area.” The range is generally 10 decibels.

- 50 I understand that this range has been determined based on one long duration survey position at 10 Nikau Lane, where 92 days of monitoring have occurred. It is unclear if the measured levels have been adjusted for weather events (days where wind exceeds 5 m/s and/or rain 6mm/hour should be excluded) and cicadas and crickets (which can add significantly to the noise levels during the summer season). The Waka Kotahi Noise Monitoring Guidelines² are intended for noise measurements “to verify any modelling of existing road-traffic noise, and to quantify the existing environment”. The Guidelines require that “datapoints during rain or average wind speed greater than 5 m/s must be excluded or reasons provided as to why they should be included”. The only relevant reason why adverse weather conditions should be included is if they represent common weather patterns in the area under consideration. And even then, high wind speeds can cause noise on the microphone that does not represent ambient noise levels (which is why high wind is excluded from surveys in accordance with NZS 6801). So while the extended surveys show that noise levels vary greatly over the year, ultimately for the “change in level” discussion the traffic noise levels will be discussed during weather conditions appropriate for such surveys, i.e. without excessive wind or rain, or insect noise.
- 51 Given that the comparison should be like with like, , I consider that the estimated existing $L_{Aeq(24h)}$ levels for locations remote from the existing state highway are relatively high and are likely at the lower end of the range when allowing for adverse weather noise to be removed. Rural locations often have low ambient noise levels between 40 and 45 dB $L_{Aeq(24h)}$. This means that with the Project in place, the noise level increase will be higher than predicted, and cause a potentially higher adverse effect. This does not necessarily mean that the mitigation chosen is insufficient, but it means that communication with affected residents needs to focus on the expected change in noise level and character to prepare them for the future.
- 52 The assessment area was extended to include all PPFs that would receive noise levels of 50 dB $L_{Aeq(24h)}$ in the existing or do-minimum scenarios. This means that more PPFs are included than required by the standard, up to about 300m from the alignment.

² <https://www.nzta.govt.nz/assets/Highways-Information-Portal/Technical-disciplines/Noise-and-vibration/Assessment/NZTA-Noise-monitoring-requirements-V1.0.pdf>

Modelling

- 53 Modelling has been undertaken using Predictor, an international noise modelling software. It followed accepted assumptions, inputs and outputs. The assessment of the BPO mitigation options followed Waka Kotahi's process of input from various disciplines and the weighting of all relevant considerations prior to the Project team putting forward mitigation options for different parts of the alignment. The chosen mitigation can generally be summarised as high performance low noise road surface (EPA7 50 mm), and solid roadside safety barriers (instead of wire barriers). These measures would be implemented in addition to the base low noise road surface (PA10 30mm).

Affected PPFs

- 54 A number of PPFs are identified to be investigated for building modification mitigation. These are PPFs where the noise level is predicted to be within Category B for New Roads (i.e. between 57 and 64 dB $L_{Aeq(24h)}$). A number of these PPFs are within the designation or Crown owned.
- 55 The assessment notes that any dwellings that are Crown owned will need to be assessed and protected, should they be retained for a noise sensitive use. I agree with this approach as it provides the most appropriate outcome for any potential future residents. Alternatively, if these PPFs are to be removed, then no mitigation will be required.
- 56 Additional noise sources such as the use of audio tactile profiles, design of roundabouts and bridge joints have also been appropriately discussed.
- 57 Overall, traffic noise levels are predicted to reduce slightly to noticeably for a large population adjacent to the existing SH1 but will increase significantly for PPFs that are currently remote from manmade noise sources. This is expected for a project like this where a new road is constructed in a rural area. The residual effects are overall acceptable, provided the mitigation proposed is implemented.
- 58 Traffic vibration has been briefly discussed and dismissed as not causing adverse effects from a new road. I agree with this assessment.

Conditions

- 59 I have reviewed the conditions relating to traffic noise, namely conditions DRN1 to DRN6, and make the following comments.
- 60 The conditions focus on the mitigation that is to be implemented, rather than the noise levels to be achieved at PPFs. This provides some certainty that the mitigation will be implemented.
- 61 DRN1 states that low noise road surface shall be installed within 18 months from the opening date of the Project to the public. This differs from the 12 months set out in Mr Smith's evidence. I consider that the soonest possible timeframe should be chosen to install low noise road surface. I agree with Mr Smith that ideally low noise road surface should be installed at the onset to avoid elevated adverse effects (up to 8 dB higher noise levels). However, I consider that 12 months has been routinely used for other projects and should also be used for this Project. This is what the assessment was based on and should be reflected in the conditions.
- 62 I note that Table DRN1 states that "asphaltic mix" be used "in all other locations". This should be updated to PA10 30mm. Asphaltic mix may be understood to be a non-porous surface such as stone mastic asphalt, while the assessment is based on standard Open graded porous asphalt (PA10 30mm). There is a noise level difference between porous and non-porous surfaces, and the assessed surface should be referenced.
- 63 DRN4 (b) requires a post construction review of the mitigation measures. While I agree with this in general, I disagree with the long delay proposed by Waka Kotahi in inspecting the low noise road surface – as proposed, this inspection will not occur for up to 18 months from the laying of the low noise road surface. Any defects can affect the performance of the road surface, and this should be determined within a much shorter timeframe and rectified if necessary. I note that condition DRN4 (d) requires the review of road surfaces to occur within 3 months of the selected surface being installed. This is in direct contradiction to DRN4 (b). I consider that 3 months is a more appropriate timeframe for such review and consider that DRN4 (b) should be updated to reflect this duration.
- 64 I agree with condition DRN5 relating to the use of ATP (Audio tactile profiled road markings). This has obviously been confirmed as appropriate and not infringing safety requirements by relevant Waka Kotahi personnel.

65 In addition I recommend that a condition is added that requires the maintenance of the structural noise mitigation measures (barriers and road surface) to retain their noise reducing capabilities as far as practicable. This will indicate to any future maintenance personnel that road surfaces are to be retained as high performing low noise road surface, and that edge barriers are not to be replaced with wire barriers in the future.

H. SUBMISSIONS

66 I have reviewed all submissions that reference noise or vibration issues. There are 24 submissions in relation to acoustic issues that I discuss below. I have combined the issues raised rather than responding to individual submissions.

Construction noise and vibration

67 A number of submissions³ are concerned about construction noise and/or vibration. Generally, submitters are concerned with the potential level of noise and/or vibration over the extended construction period, consider the noise limits too high and are concerned that the construction noise may impact on their ability to work from home. In addition, some submitters seek reduced construction hours (e.g. no weekend and night works).

68 The construction noise limits proposed (which mirror those in NZS 6803) reflect the need for development while balancing neighbouring site owner and occupiers' requirements for periods of rest. This means that the noise performance standards have low noise limits at night and on Sundays, and high noise limits during daytime Monday to Saturday. The Sunday and night-time noise limits do not allow for noise generating construction works close to any dwellings. This means that generally, no works can occur at night-time or on Sundays. I consider that the construction noise limits appropriately allow for construction to occur while allowing rest and sleep periods for neighbouring residents.

69 The proposed conditions reflect the relevant NZS 6803 construction noise limits. In addition, the conditions allow for works that may infringe the noise limits at times. This is a common occurrence for large scale construction projects where works move along the alignment and large equipment may for brief periods exceed the limits while

³ Submission Nos: B Summers (1), S Henry (2), W McAlister (8), H Naylor (9), G Williams (10), G Anderson (22), S & M Main (23), M Storey (25), M Vause (29), D Bramwell (36), R & M Apatu (40), J Jakeman (47), E & C Chalmers (60), S Hodge (71), James McDonnell Ltd (72), Kāinga Ora (77)

passing a property. It may also occur that very limited and time constrained night-time works may be required, e.g. where the new road ties in with existing major roads and works cannot be undertaken without disruption to existing traffic.

- 70 In that event, a multistep management process is proposed by the acoustic assessment. First, a CNVMP applies to all works. It sets out the management and mitigation measures that apply to all works along the Project. In addition, Schedules must be prepared for those activities that are predicted to exceed the noise and/or vibration limits at specific properties.
- 71 The CNVMP will be lodged as part of an outline plan of works (**OPW**) which provides for Council to review and give feedback on the document. This is one of the issues noted by a submitter, and I consider it will be appropriately managed through this process.
- 72 Schedules will be prepared as and when needed when an activity is predicted to exceed relevant acoustic limits. The recommended conditions did not contain a condition relating to Schedules despite them being described in detail in the acoustic assessment. I have recommended a condition that sets out the objectives, content and process required to prepare a Schedule. I note that Schedules are not generally certified by Council due to the time constraints during construction. The acoustic report proposes an alternative mechanism whereby Councils and the requiring authority agree on a suitably qualified specialist for the preparation of the Schedules, so that Councils have confidence in the quality and effectiveness of the Schedules. I agree with this approach and have recommended that this requirement is included in the Conditions.
- 73 Some submitters have concern about intrusive construction noise levels while working from home. Post-Covid, many people choose to share their work time between the office and home. When construction is close, it may be more appropriate to work away from construction activities rather than choose to work from home. These times are likely to be limited to a few weeks or months, rather than the entire construction period.
- 74 Where people run a business from home, they may find that construction impacts on their operations. Construction is unlikely to occur for extended periods outside individual houses. Nevertheless, such effects can be addressed through the CNVMP by consultation with the affected neighbours, to find an appropriate solution. This may

include the provision of a temporary noise barrier during construction or similar measures.

- 75 Others are concerned about construction noise to interfere with sleep. As discussed in paragraph 69, night-time construction is not enabled by the noise limits. Night-time works will only occur for special circumstances, where daytime work is too disruptive to existing roads or rail. In that instance, a Schedule would be prepared and appropriate mitigation found, which includes, in exceptional circumstances, the offer of temporary relocation.
- 76 A number of submitters seek mitigation in the form of double/triple glazing, ventilation or noise bunds/barriers that should be installed prior to construction commencing. Where such mitigation is proposed for the control of operational traffic noise, I agree that this should be installed as early as practicable during construction to also mitigate construction noise. However, generally, we do not recommend that building modification is installed to control construction noise only, as the effects will be temporary.
- 77 One submission is concerned about construction vibration causing annoyance, and seeks that heavy machinery is only operated during core construction hours. I understand this to mean the normal daytime construction period as set out in the conditions. As discussed, it is unlikely that significant construction will occur outside those hours, and then only during specific circumstances (e.g. where disruption to traffic or rail is expected). In addition, vibration levels will be managed to comply, as far as practicable, with the 1 mm/s PPV amenity criterion. Therefore, I consider that vibration will be appropriately managed through the CNVMP and Schedules.

Traffic noise and vibration

- 78 Of the 24 submissions discussing acoustic issues, I have identified 22 submissions⁴ who mention traffic noise and vibration. The issues raised are the need for additional mitigation (beyond the proposed low noise road surface and limited barriers).
- 79 Some submitters are supportive of the use of low noise road surface as proposed by the acoustic assessment and required in the conditions. I consider that the proposed

⁴ Submitter numbers: B Summer (1), S Henry (2), N & S Whyte (3), H Naylor (9), G Williams (10), A & J McCallum (11), L Miles (20), G Anderson (22), M Storey (25), M Vause (29), D Bramwell (36), R & M Apatu (40), J Jakeman (47), K Daly (48), K & S Prouse (49), L Poutama (53), E & C Chalmers (60), A & F P Van Iddekinge (68), S Hodge (71), James McDonnell Ltd (72), Kāinga Ora (77), S Austin (79).

EPA7 50mm material is the best available noise reducing material at present and support its use for extended parts of the Project as proposed. The requirement for this surface material is included in the proposed conditions, which means that it cannot be value engineered out of the project. Specifically the local Marae is in favour of the Project providing a noticeable reduction in noise level by removing traffic of SH1.

- 80 Several submissions comment on the predicted increase in noise level with the Project, compared with existing levels. This is a common outcome for Projects where a new road is built into a greenfield area. The noise criteria categories of NZS6806 take account of the different expectations and noise levels experienced in greenfield areas and set lower noise criteria categories for New roads compared with Altered roads. Most dwellings are predicted to receive noise levels in Category A (up to 57 dB $L_{Aeq(24h)}$) and the acoustic assessment also discusses the number of PPFs receiving noise levels above 50 dB $L_{Aeq(24h)}$. New roads tend to change not only the noise levels but also the character of the environment. This is inevitable. Mitigation is intended to reduce the effects as far as practicable, however, the change in character will still occur.
- 81 Several submissions ask for earth bunds or acoustic fencing in addition to the limited barriers recommended. Barriers, where effective, can reduce noise levels significantly. Barriers can also have adverse visual and landscape effects. In rural areas, barriers may have to be long and high to achieve noise level reductions at the intermittent houses. I understand that these considerations have been addressed by the Project team. I note that unlike for similar roads along the Kapiti Coast expressway, no significant barriers or bunds have been proposed for this Project.
- 82 The submissions (48 and 72) for the Tara Ika urban growth area seeks a landscaped earth bund to mitigate, amongst other issues, noise. At present, no mitigation beyond the use of low noise road surface is proposed. The Tara-Ika urban growth area is currently undeveloped, but I understand that appeals are about to settle, so the final form of subdivision is somewhat known given the Structure Plan that applies to Tara-Ika. I also understand that dwellings in the subdivision will be double storey, with three storey dwellings towards the centre of the site. A bund would provide additional noise level reduction across the site and at a minimum provide shielding for the ground floor and outdoor living areas of the future houses. The urban design and visual/landscape effects of a bund in that location would need to be assessed by others however, and there may also be other impacts to consider. Given that such a bund would also have an acoustic benefit, I would support it from an acoustic perspective. In addition, the

submissions request that the noise criteria categories are set in the condition. I consider that the proposed condition setting out the mitigation that will be implemented (i.e. low noise road surface and some limited barriers) provide a good level of certainty of outcome, and setting noise categories in conditions is not required. Should a bund be proposed as discussed above, this would also need to be included in the Conditions.

- 83 Overall, I consider that there is a shared responsibility of developers and road controlling authorities to provide the best practicable outcome for existing and future residents. This means that provision of low noise road surface (and potentially bunding) is implemented by the road controlling authority, while the developer provides appropriate sound insulation and ventilation for dwellings constructed close to high volume roads. The same applies to Kāinga Ora developments, where the responsibility of traffic noise management should be shared as discussed above.
- 84 The submitters of the Homestead “Ashleigh” seek further noise mitigation, such as acoustic barriers or bunds. I note that the Built Heritage Technical Assessment states that noise barriers should be considered for the homestead. However, when investigating the BPO matrix for area G1 for the noise mitigation determination in Appendix C of the acoustic report, this is not reflected in the ratings. Under the Heritage line, any option providing for a barrier received lower ratings than those without barrier. It may be helpful to understand this discrepancy between the report and the input into the noise mitigation options. Overall, as discussed above, if a bund for Tara Ika is proposed for landscape and visual reasons, that would also provide noise mitigation for the sites behind it including “Ashleigh” Homestead.
- 85 Several submitters ask for building modification mitigation in the form of double/triple glazing and heat pumps. This would only be investigated for houses where external noise levels are within Category C of NZS6806. For this Project, the proposal is to also investigate those dwellings where noise levels are in Category B when assessed against the new road criteria. This goes beyond the requirements of the Standard and will assist in further reducing the adverse effects from the Project.
- 86 Some submitters have misinterpreted NZS 6806 and understand that a noise level of 40 dB $L_{Aeq(24h)}$ should be achieved outside. This is incorrect. The external noise criteria in the Standard range from 57 dB $L_{Aeq(24h)}$ (Category A for new roads) to 67 dB $L_{Aeq(24h)}$ (Category B for Altered roads). The Category C criterion of 40 dB $L_{Aeq(24h)}$ inside applies to houses that receive external noise levels above 64 dB or 67 dB $L_{Aeq(24h)}$ for

new and altered roads respectively.

- 87 One submitter (2) references the World Health Organisation criteria and quotes a level of 70 dB $L_{Aeq(24h)}$ as appropriate. I note that this is a very high noise level and should traffic reach this level (which it is not predicted to) then building modification mitigation would be required. The noise assessment shows that for the vast majority of PPFs, noise levels will be within Category A, with a small number in Category B. For those PPFs receiving noise levels in Category B, investigation of building modification is proposed. This may consist of provision of ventilation, upgraded joinery and glazing and similar, to achieve an internal noise level of 40 dB $L_{Aeq(24h)}$. I therefore consider that traffic noise levels can be appropriately managed for all existing PPFs.
- 88 Another submitter also requests an assessment in accordance with the WHO guidelines. I note that the acoustic assessment has identified PPFs that are predicted to receive noise levels above 50 dB $L_{Aeq(24h)}$. However, I consider that the WHO guidelines are aspirational and unlikely to be achievable for many if not all roads. NZS6806 is the appropriate standard for the assessment of traffic noise in New Zealand. The vast majority of PPFs is predicted to receive noise levels in the most stringent Category A, with additional mitigation proposed for those PPFs receiving noise levels in Category B. I consider this an appropriate approach that goes beyond other projects in New Zealand.
- 89 One submitter (3) is concerned about trucks using their engine brakes approaching the roundabout. I understand from the acoustic report that this will be avoided as far as practicable through appropriate design of the approaches to roundabouts, intersections and similar structures. In addition, a “No Engine braking” sign could be installed to alert drivers.
- 90 Several submitters request planting to assist with noise reduction. Planting does not have a noise reducing effect, though does provide visual shielding which can make the noise “appear” to be lower. To achieve even a small noise level reduction, at least 100m of dense planting would be required. As a rule of thumb, if wind can cross through an area, then so can noise. I therefore would not recommend using planting for noise mitigation, but rather only for visual shielding (which is better discussed by the landscape specialist).

91 One submitter is concerned about traffic vibration following the opening of the road. Traffic vibration is discussed in the acoustic assessment, and I agree with the assessment that for new, well maintained roads, traffic vibration is unlikely to be an issue. I therefore do not think that additional mitigation will be required for traffic vibration.

I. CONCLUSION

92 I have reviewed the relevant application document for the Ō2NL Project in relation to noise and vibration. Overall, the assessment undertaken of construction noise and vibration is high level, while the assessment of traffic noise is extensive.

93 The assessment process undertaken generally followed common assessment methods, with some additional assessment options for traffic noise. The outcomes are generally as expected.

94 Construction noise and vibration can be managed through a well tested process. The conditions proposed by Waka Kotahi, as currently drafted, do not reflect that process, and I have recommended changes to ensure the process will be robust.

95 Traffic noise mitigation has been determined through the standard Waka Kotahi process. A significant length of the highest performing road surface (EPA7 50mm) has been proposed, and some limited low height barriers. I understand that for landscape and visual reasons, additional bunding may be recommended. In that case, such bunds will also provide additional noise mitigation that will be beneficial for the areas behind (namely the Tara Ika urban growth area). I have recommended some changes to the conditions to ensure more certainty of outcome. Should additional bunds be recommended, these should also be included in the conditions.

Siiri Wilkening

28 April 2023

APPENDIX 4

SOCIAL IMPACT – MICHALA LANDER

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of notices of requirement by Waka Kotahi NZ Transport Agency to Kāpiti Coast District Council and Horowhenua District Council for designations to construct, operate, maintain and improve a new state highway and shared use path and associated infrastructure, between Taylors Road (to the north of Ōtaki) and State Highway 1 north of Levin

**SECTION 198D REPORT OF MICHALA LANDER – SOCIAL IMPACT
ASSESSMENT**

**KĀPITI COAST DISTRICT COUNCIL AND
HOROWHENUA DISTRICT COUNCIL**

28 April 2023

A. OUTLINE OF REPORT

- 1 This report, required by section 198D of the Resource Management Act 1991 (“**RMA**”), addresses the issues set out in sections 171 of the RMA, to the extent that they are relevant to the notices of requirement lodged with the Kāpiti Coast District Council (“**KCDC**”) and Horowhenua District Council (“**HDC**”).
- 2 The Notices of Requirement (NoR) given by Waka Kotahi NZ Transport Agency (“**Waka Kotahi**”) to KCDC and HDC are for a designation to construct, operate, maintain and improve a new state highway and shared use path and associated infrastructure, between Taylors Road (to the north of Ōtaki) and State Highway 1 north of Levin. The project is known as the Ōtaki to North of Levin Highway Project (the “**Ō2NL Project**” or “**the Project**”).
- 3 In addition, Waka Kotahi has separately applied for resource consents (“**Applications**”) relating to the Ō2NL Project to Manawatū-Whanganui Regional Council (“**Horizons**”) and Greater Wellington Regional Council (“**GWRC**”) respectively.
- 4 This report addresses Social Impact Assessment with regard to the notices of requirement lodged with KCDC and HDC. Matters relating to the Applications are outside the scope of this report.
- 5 In preparing this report, I have reviewed the following documents and technical reports lodged with the notices of requirement:
 - (a) Volume I – Notice of Requirement
 - (b) Volume II – Assessment of Effects on the Environment
Appendix Three – Cultural and Environmental Design Framework
 - (c) Technical Assessment A: Transport
 - (d) Technical Assessment E: Social Impact
 - (e) Technical Assessment D: Landscape, Visual and Natural Character
 - (f) Technical Assessment M: Built Heritage

- (g) Technical Assessment N: Productive Land
- (h) Technical Assessment O: Economics and Town Centre Impacts
- (i) Ō2NL NoR and RC Volume II Part F Consultation and Engagement.

6 While this report is prepared pursuant to section 198D of the Resource Management Act (“RMA”), I have (in accordance with section 42A(1A) and (1B) of the RMA) attempted to minimise the repetition of information included in the notices of requirement and where I have considered it appropriate, adopt that information.

B. QUALIFICATIONS / EXPERIENCE

7 My name is Michala Lander. I am Technical Director – Social Planning at GHD and have held this position since 2017. Prior to this role I was Senior Consultant - Social Planning at GHD from 2013 to 2017.

8 My role involves the preparation of Social Impact Assessments, social planning assessments to support the Business Case Process, Strategic Planning and the development and implementation of community engagement strategies.

9 I hold a Bachelor of Applied Science (Occupational Therapy) Hons from the University of Sydney and a Master of Planning from the University of New South Wales. I also hold a certificate for Public Participation from the International Association of Public Participation. I am a full member of the Planning Institute of Australia as well as Recreation Aotearoa.

10 I have 17 years’ experience as a social planner. My masters dissertation explored the processes used by NSW Local Consent Authorities to assess the social impact of development applications. My experience has included the preparation of social impact assessments as well as social and recreation infrastructure assessments. Examples of projects I have been involved in include:

- a. Social and Recreation Impact Assessment for the Riverlink Application for Resource Consent, Wellington, New Zealand.
- b. Silverstream Recreation Impact Assessment, Wellington, New Zealand
- c. Recreation Needs Analysis for the F6 Extension Stage 1 Project, in Sydney NSW.
- d. Social baseline report to investigate the impacts of the planning proposal for the redevelopment of the Waterloo Housing Estate in Sydney NSW.

- e. Social Infrastructure Study for the Western Sydney Aerotropolis in Sydney NSW.
- f. Social Impact Assessment for the Parramatta Light Rail, Stage 2 in Sydney NSW.

11 I have been on parental leave since October 2022 and not yet had the opportunity to conduct a site visit and familiarise myself with the site and surrounding area. As soon as it is practicable for me to do so, I will carry out a visit. However, I do not consider that a site visit is essential in order to enable me to prepare this report.

C. EXECUTIVE SUMMARY

12 I have reviewed Technical Assessment E: Social Impact (the SIA), as well as the other Technical Assessments lodged with the NoR which inform the SIA. Overall, I agree with the methodology used in the SIA and I consider that this is appropriate for a project of this nature.

13 There are some gaps in the SIA which I identify in this report. I do not expect that information would significantly affect the conclusions in the SIA, but it should be provided by Waka Kotahi in its evidence.

14 In conducting my review of the description of the existing social environment within the SIA, I have reviewed the Community Profile to determine if it provides an adequate baseline to the social areas of influence. In my opinion, it does not do so because the SIA did not include a comprehensive audit of social infrastructure that services the local, district and regional area. Such an audit would typically be at the following scale:

- a. local within 400m of the Ō2NL corridor;
- b. district within 5km of the Ō2NL corridor;
- c. regional within 20km of the Ō2NL corridor.

15 Infrastructure within the audit should have included recreation facilities, early childhood education, retirement villages and emergency services. Identification of these facilities should assist in confirming the potential impacts and determining the level of impact.

16 I otherwise agree with the methodology used, the social impacts that have been identified, and with the majority of the impact assessment ratings.

17 Overall, with regard to the ratings that have been applied, I agree with the SIA that ratings for the Regional and Local Communities will be more positive than those at

the Sub-Local Community level. Regional and Local Communities will experience many of the benefits of the Project without directly experiencing many of the adverse impacts from construction and operation of the proposed Ō2NL corridor. For this reason, my assessment has focussed on the Sub-Local Communities to confirm that the adverse impacts have been considered and assessed accurately.

- 18 However, the SIA does not use or include a table (as recommended in the Waka Kotahi People Place and Environment Series; Social Impact Guide (2016)) to summarise the identified impacts and ratings. This table provides detail about the stakeholders impacted, consequence of the impact, magnitude, timing, level of permanence and whether the impact is direct or indirect. Such a table provides greater transparency on how the final rating for each impact was determined. This table should still be developed in order for me to confirm with a greater degree of certainty that I agree with the ratings that have been assessed in the SIA.
- 19 Based on the SIA as it stands, and without the benefit of the table I refer to above, my opinion differs from that in the SIA in relation to the following ratings:
- a. At the Sub-Local Level, the social impact on Way of Life should be assessed as **Moderate Negative** (rather than Low) at the Sub-Local level.
 - b. At the Sub-Local and Local Community levels, the social impact of Community will be **Moderate Negative** (rather than Low).
- 20 The submissions raised a number of issues which were not addressed in the SIA, specifically:
- a. The importance of horse riding and that their needs should be considered in the design of the Shared Use Pathway (**SUP**).
 - b. The impact of property acquisition has the potential to create a subsequent social impact associated with the loss of generational continuity.
 - c. The impact the Project will have on the character of the community.
 - d. Consideration should be given to needs of vulnerable communities particularly with regard to noise, vibration and dust impacts as well as access.
 - e. The absence of provision for connectivity across Ō2NL between Tara-Ika and Levin due to a 'dis-connect' between the plans for Tara-Ika and those for Ō2NL, particularly the absence of provision for the East West Arterial ("**EWA**")

and the cycle/pedestrian crossings shown in Plan Change 4 and the related Structure Plan.

- f. The length of time already undertaken to plan and seek approval for the Project has created a significant amount of uncertainty for local residents. Fears associated with this uncertainty are a legitimate social impact that should be considered as part of the application.

21 I agree that the concerns raised in the submissions are social impacts of the proposal and should be considered. I recommend that:

- a. A recreation assessment of horse riding in the region be undertaken by Waka Kotahi to confirm the location of equestrian facilities and any effects of the Project on them.
- b. Waka Kotahi provide an assessment of the impact of the Project on sense of place with regard to the connections that some families have to the history and heritage of the place.
- c. The impact rating for Community at the Sub-Local level should be **Moderate negative**.
- d. The Project should have an awareness of the location of retirement villages in relation to the proposed highway, and consideration should be given to the design of any crossings to ensure that there is safe access for pedestrians with mobility impairments.
- e. Waka Kotahi provide an assessment of the impact of the Project on fears and aspirations within the impact category of Quality of the Living Environment.
- f. Additional health and wellbeing benefits associated with first responders being able to access all areas of the corridor be recognised as part of the Project.
- g. Discussions between HDC and Waka Kotahi regarding the EWA (and two other crossings) continue, and that further assessment and expert caucusing be undertaken in relation to social effects and severance issues arising from the disconnect between the Plan Change 4 proposals and Ō2NL as proposed in the NoR.

22 In general, I consider that the proposed consent conditions in relation to social impacts are appropriate but have recommended some refinements to those conditions.

23 Overall, taking into consideration the information provided in the SIA and other Technical Reports, I have a high level of confidence with the impact assessment ratings I have confirmed, and the recommendations on the consent conditions to mitigate any adverse social impacts.

D. SCOPE OF REPORT

24 In conducting my review of Technical Assessment E: Social Impact (the SIA), I have considered the following questions:

- a. Does the community profile prepared provide an adequate baseline of the social areas of influence?
- b. Do I agree with the social impacts that have been identified?
- c. Is the impact assessment rating for each identified social impact accurate?
- d. Were the issues raised in the submissions considered in the SIA?
- e. Do the proposed consent conditions appropriately mitigate the potential adverse social impacts of the Project to an acceptable level?

E. BACKGROUND

25 In February 2022, I conducted a review of the draft SIA for the Ōtaki to North of Levin Road Corridor, dated 21 December 2021. This report was one of the supporting documents to inform the assessment of effects on the environment included in Section 7, Volume II ‘Supporting Material’ that accompanies the NoR for designation and Resource Consent application under the Resource Management Act 1991 (“RMA”). I was requested to conduct this review on behalf of HDC and KCDC to assess whether the document adequately assessed the potential social impacts of the proposal. In undertaking the review, consideration was given to the Waka Kotahi Social Impact Guide.

26 A memorandum dated 16 February 2022 was provided with feedback from my review and included recommendations to enable the SIA to comply with the Waka Kotahi guidelines. These recommendations included:

- a. Consultation with the community and key stakeholders to understand potential social impacts of the proposal.
 - b. Review and incorporation of Technical Studies that have the potential to contribute to a social impact.
 - c. Information on the construction methodology to determine the extent of potential impacts during the construction period.
 - d. Preparation of an impact assessment table to provide an overview of the assessment of social impacts taking into consideration; magnitude of the impacts, duration, as well as potential mitigation, as required within the Waka Kotahi Social Impact Guide.
- 27 In July 2022, I conducted a second review of the updated draft SIA to determine the extent that my feedback issued in February 2022 had been addressed. I identified some further information required and issued a memorandum to that effect on 26 July 2022. Key areas for amendments outlined in my memorandum dated 26 July 2022 included the following:
- a. Assessment of social impacts against the objectives of the Ō2NL Project as stated in the NoR.
 - b. Engagement with community organisations that have the potential to be impacted by the Project.
 - c. Demonstration of how impacts have been identified and their level of impact assessed.
- 28 In November 2022, I was on parental leave when the final version of the SIA was reviewed to determine if any further information was required under Section 92 of the RMA. Janet Luxton, my colleague from GHD, conducted a review of the final version of Social Impact Assessment against the amendments that were requested in July 2022. It was determined that a Section 92 was not required.

F. REVIEW OF APPLICATION

- 29 The Ō2NL Project is part of the NZ Upgrade Program (NZUP) and has a stated purpose to “improve safety and access, support economic growth, provide greater route resilience, and better access to walking and cycling facilities”. The objectives

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

- a. to enhance safety of travel on the state highway network;
 - b. to enhance the resilience of the state highway network;
 - c. to provide appropriate connections that integrate the state highway and local road network to serve urban areas;
 - d. to enable mode choice for journeys between local communities by providing a north-south cycling and walking facility; and
 - e. to support inter-regional and intra-regional growth and productivity through improved movement of people and freight on the state highway network.
- 30 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 be maintained and the intent is that these roads will function as local roads, providing access for communities to various amenities and uses in the district as well as to the new highway. The existing state highway will also be an alternative route for resilience.
- 31 The SIA analysed the potential social impact of the construction and operation of the Ō2NL Project using the following methodology:
- a. identify and describe the existing social environment;
 - b. assess the potential regional, local and sub-local social impacts (positive and negative) of the Ō2NL Project;
 - c. recommend measures as appropriate to avoid, remedy or mitigate potential adverse social impacts;
 - d. present an overall conclusion of the level of potential adverse and positive social impacts of the Project after recommended measures are implemented.
- 32 I agree that the use of this methodology is appropriate for assessing the social impacts of the Project.

The existing social environment

- 33 In conducting my review of the description of the existing social environment within the SIA, I have reviewed the Community Profile to determine if it provides an adequate baseline to the social areas of influence.
- 34 The SIA provides a comprehensive analysis of the existing social environment as a baseline from which to assess the potential impacts of the Project. The areas of influence are defined within the SIA as:
- a. Sub-local Community – the Project Area and immediate neighbourhoods surrounding the Project. The Sub-local communities that have been identified within the SIA are:
 - i. East/Northeast Levin
 - ii. East Ohau, East Kuku and Muhunua East (western portion)
 - iii. East Manakau
 - iv. North Ōtaki
 - b. Local Community– these are the established larger communities that the Project traverses. It is anticipated that these communities will experience direct and indirect social impacts from the construction and operation of the Project. The Local Communities include Levin, Ohau and Kuku and Manakau and the rural areas associated. These communities include those at the sub-local level.
 - c. Regional – this covers the extent of the Ō2NL corridor extending from Palmerston North to Wellington.
- 35 Community profiles have been prepared for the three Local Communities (Levin, Ohau and Kuku and Manakau). The SIA includes a comprehensive community profile for each local community incorporating a demographic analysis, review of social infrastructure, transport provision and anticipated growth rate of each area. The community context for the sub-local communities is described as part of the local community profiles.
- 36 The SIA should have included a comprehensive audit of social infrastructure that services the local, district and regional area. This would typically be at the following scale:
- a. local within 400m of the Ō2NL corridor;
 - b. district within 5km of the Ō2NL corridor;
 - c. regional within 20km of the Ō2NL corridor.

37 The SIA has only analysed social facilities and services within the three local communities, however there is social infrastructure including recreation facilities located outside the town centres in close proximity to the proposed Ō2NL corridor that have the potential to be impacted by the Project. In my review of the community profiles, I have identified facilities that should have been included in the audit that would assist with identifying potential social impacts, the scale of impact and also consideration of the submissions. These facilities include:

a. Equestrian facilities including horse riding schools and racecourse facilities. These facilities will have horses travelling to them either by horse-riding or using horse floats on the State Highway. Facilities identified through my preliminary search include:

- i. Abby Long Equestrian Facility: 237 North Manakau Road, Manakau
- ii. Lakeside Stables: 328a Hokio Beach Road, Levin
- iii. Redemption Equestrian: 761 State Highway 1, Te Horo (approximately 5.5km from Ōtaki)
- iv. Te Horo Equestrian Centre: 737 State Highway 1, Te Horo (approximately 6km from Ōtaki)
- v. Otaki Racecourse: 47 Te Roto Road, Ōtaki (includes Otaki-Maori Racing Club)
- vi. Levin Racecourse: Mako Mako Road, Levin.

b. The SIA should have assessed the impact of the Project on potentially vulnerable communities. The Social Infrastructure Audit should have included Early Childhood Facilities as well as Retirement Villages. The population that utilises these facilities has the potential to experience a greater level of impact as a result of the Project. Vulnerable communities are more sensitive to noise, dust, vibration and other amenity impacts, and they also have different access requirements that should be taken into consideration. Facilities identified through my preliminary search include:

- i. Ocean View Residential Care: 56/58 Marine Parade, Ōtaki Beach
- ii. Speldhurst Country Estate: Kimberley Road, Levin
- iii. Summerset by the Ranges: 104 Liverpool Street, Levin
- iv. Horowhenua Masonic Village: 685 Queen Street East, Levin
- v. Bupa Te Whanau Care Home: 603 Queen Street East, Levin
- vi. MiLife Rosewood Park: 78 Queenwood Road, Levin
- vii. Reevedon Home and Retirement Village by Enliven: 37 Salisbury Street, Levin
- viii. Millvale House Levin: 42 Mako Mako Road, Levin

- ix. Ultimate Care Madison: 144 Queen Street West, Levin
 - x. Ōtaki Early Learning Centre: 177 Mill Road, Ōtaki
 - xi. Te Kohanga Reo o Tu Poa: 43 Te Rauparaha Street, Ōtaki
 - xii. Ōtaki Kindergarten: 68 Waerenga Road, Ōtaki
 - xiii. Ōtaki Playcentre: 169 Mill Road, Ōtaki
 - xiv. Montessori Pre-School Ōtaki: 200 Mill Road, Ōtaki
 - xv. Backyard Kids Childcare: 73 Riverbank Road, Ōtaki
 - xvi. Ohau Playcentre: 12 Muhunoa East Road, Ōhau
 - xvii. Farmhouse Preschool and Nursery: 191 Roslyn Road, Horowhenua
 - xviii. Fairfield Educare: 85 MacArthur Street, Levin
 - xix. Kauri Kohanga Reo: 7 Kauri Street, Levin
 - xx. Parsons Avenue Kindergarten: 20 Parsons Avenue, Levin
 - xxi. Levin Baptist Kindergarten: 140a Winchester Street, Levin
 - xxii. Te Timatanga Hou Kindergarten: 19 Wilton Street, Levin
 - xxiii. Sunshine Kids Daycare: 19 Wilton Street, Levin
 - xxiv. Tararua Educare Children's Centre: 7 Reeve Street, Levin
 - xxv. Learning Adventures Levin: 46 Waeroa Road, Levin
 - xxvi. Chelsea House Early Childhood Centre: 51 Trafalgar Street, Levin
 - xxvii. Learning Links Childcare Horowhenua: 70 Queen Street West, Levin
 - xxviii. Levin Playcentre: 13 Paisley Street, Levin
 - xxix. Country Educare Children's Centre: 1/73 Whelans Road, Levin
 - xxx. Levin Montessori: 12 Highfield Place, Levin
 - xxxi. Betty Montford Kindergarten: 46 York Street, Levin
 - xxxii. Levin Private Kindergarten: 9 Victoria Street, Levin
 - xxxiii. Taitoko Kindergarten: 36 Kinross Street, Levin
 - xxxiv. Arohanui Kindergarten: 74 Bartholomew Road, Levin
 - xxxv. Parsons Avenue Kindergarten: 20 Parsons Avenue, Levin
- c. The SIA has not included emergency services (Ambulance, Fire and Police) within the audit of social infrastructure. A key objective of the Project is having resilience in the road network. Emergency Services access should be considered within the assessment of resilience. The Local Communities are approximately a one hour drive from the two major urban centres of Wellington and Palmerston North. Emergency services are critical in providing first-response treatment, which should be available within a ten minute call out timeframe. The Project creates an additional pathway for emergency services that would be of significant benefit to local residents who are currently at risk of not being able to receive these essential services within the 10 minute

timeframe if the State Highway is out of action. From my preliminary search I have identified the following emergency services:

- i. Levin Fire Station: 32 Queen Street East, Levin
- ii. NZ Police: 7 Bristol Street, Levin
- iii. St John Levin Ambulance Station: 23 Seddon Street, Levin
- iv. St John Ōtaki Ambulance Station: 51 Dunstan Street, Ōtaki
- v. Ōtaki Police Station: 1 Iti Street, Ōtaki

d. In my opinion, the facilities identified above should have been included in a comprehensive audit of all social infrastructure within and in close proximity to the Ō2NL corridor and provided as an Appendix to the SIA. Information from this audit would assist with confirming the potential social impacts and their level of impact. Information from my own audit of social infrastructure has been used throughout this report to confirm my review of the impact assessment for each social impact category.

Assessing social impacts

38 In conducting my review of the SIA, I have reviewed the findings of the assessment to determine if I agree with the social impacts that have been identified and the impact assessment rating that has been used within the assessment.

39 The following rating scale was used in the SIA to measure the extent of the social impacts identified.

Rating	Definition
Very low	<ul style="list-style-type: none"> • Short/temporary duration (temporary e.g. weeks/months) • Small extent of the community (e.g. less than 10% of a community impacted) and/or • Very-low or negligible level of severity of impact (a preliminary assessment of what the impact is likely to be/how much it will likely affect those involved at a community level)
Low	<ul style="list-style-type: none"> • Transition duration (e.g. months, or for period of construction activity)

	<ul style="list-style-type: none"> • Small to medium extent of impact on a community (e.g. less than 10%, to up to 50% of a community impacted) and/or • Low level of severity of impact (what the severity of the preliminary impact is likely to be/how much it will affect those involved at a community level)
Moderate	<ul style="list-style-type: none"> • Transitional to long term duration (e.g. months to years, or e.g. impacts that will extend over and throughout a construction period) • Medium extent or scale of impacts for the community (e.g. around half of an identified community experience are impacted) and/or • Low to moderate level of severity of impact (what the severity of the preliminary impact is likely to be/how much it will affect those involved at a community level)
High	<ul style="list-style-type: none"> • Long term duration (e.g. years to permanent impact) • Medium to large scale extent of impact for the community (e.g. more than half or the majority of a community is considered likely to experience the impact) and/or • Moderate to high level of severity of impact (what the severity of the preliminary impact is likely to be/how much it will affect those involved at a community level)
Very high	<ul style="list-style-type: none"> • Long term duration (e.g. more likely to be permanent impact) • Large extent or scale or impact for community (e.g. most of a community is likely to experience the impact) and/or • High to very high level severity of impact (what the severity of the preliminary impact is likely to be/how much it will affect those involved at a community level)

40 The Waka Kotahi Social Impact Guide recommends SIAs use a table to summarise the identified impacts and rating. The table recommended in the guidelines identifies:

- a. the impacts;
 - b. stakeholders;
 - c. if the impact is positive/negative;
 - d. consequence/likelihood;
 - e. magnitude;
 - f. timing;
 - g. permanence;
 - h. direct/indirect;
 - i. overall impact rating.
- 41 In my feedback provided on my previous reviews of the SIA (dated 16 February 2022 and 26 July 2022), I recommended that a table in accordance with the Waka Kotahi Social Impact Guide be included within the SIA report to summarise the impact assessment. This request was made to give greater transparency on how the final rating for each impact was determined. However, the table was not included in the final version of the SIA. This table should still be prepared by Waka Kotahi as part of its evidence in order for me to confirm the SIA assessment ratings with a greater degree of certainty.
- 42 The SIA identified social impacts in the following categories:
- a. Way of life
 - b. Community
 - c. Health and wellbeing
 - d. Quality of the living environment
- 43 I agree with these broad Social Impact Categories, although in the following sections of my report, I provide commentary on each of the categories used in the SIA and the ratings that have been applied within the Regional, Local and Sub-Local Community. I have relied on Tables E.3 and E.4 in the SIA which provide the final assessment score for each category.
- 44 Overall, with regard to the ratings that have been applied, I agree with the SIA that ratings for the Regional and Local Communities will be more positive than those at the Sub-Local Community level. Regional and Local Communities will experience many of the benefits of the Project without directly experiencing many of the adverse impacts from construction and operation of the proposed Ō2NL corridor. For this reason, my assessment has focussed on the Sub-Local Communities to confirm that the adverse impacts have been considered and assessed accurately.

Way of Life

- 45 Way of Life has been defined within the SIA to include:
“How people carry out and get to their activities of daily living including consideration of access to and between communities and places/centres where people live, work and play.”
- 46 For Regional Communities, Way of Life is assessed as having significant positive benefits without any material negative benefits. At the Local Community level, Way of Life is assessed as having moderate to high positive benefits. **I agree with the assessment for both the Regional and Local Communities.**
- 47 At the Sub-Local Community level there are additional adverse impacts for Way of Life. For this reason, they have been assessed in the SIA as Low Negative. The Sub-Local Community will experience more adverse impacts due to changes in access to properties and movement patterns around the local area. Mitigation techniques that consider traffic management at the local level will be required to reduce the impact in these communities. This will include consultation with local residents, particularly those that are directly impacted by the construction works. The Traffic Management Plan that is proposed as part of the consent conditions (Condition DCT 1) will need to consider daily movements within the local community.
- 48 The SIA has also considered the impact to local businesses within the category of Way of Life. At the Local and Sub-Local level, the SIA has identified that there will be impacts to businesses especially agricultural businesses located on sites that have been identified for complete or partial property acquisition. I have found it difficult to assess the level of impact for this effect because the SIA has only analysed this impact within each of the Sub-Local communities, and therefore it has not taken into consideration the cumulative impact of the loss of productive land across the Ō2NL corridor.
- 49 Technical Assessment N: Productive Land has investigated the impact of the potential loss of productive land across the Project. According to this Technical Assessment, the Ō2NL corridor will run through a number of existing properties and in doing so will create between 57 and 71 new areas of land that will be physically separated (by the state highway) from the remainder of the relevant property. Of these new areas of land, 40 are less than one hectare. According to Technical Assessment N, areas less than one hectare would be considered effectively non-

productive. This loss of productive land creates a social impact on a community's livelihood as well as the stress experienced by the community due to uncertainty about the financial implications arising from this loss of land.

- 50 To mitigate the loss of productive land, and therefore address the social impact of loss of livelihood, it is recommended in Technical Assessment N: Productive Land that consideration be given to amalgamating affected titles following construction of the road. I support this recommendation. In addition, any topsoil stripped as part of construction should be used to rehabilitate earthwork areas following construction. This will help reinstate areas located within the construction footprint, including construction compounds and laydown areas, spoil sites and material supply sites. This approach will help ensure that land is reinstated so that it has the same or similar soil quality as it had prior to construction commencing. I recommend that this be included as a consent condition to reduce the severity of the impact on livelihood. In my opinion, the impact assessment for this category is **Moderate Negative (rather than Low) at the Sub-Local level.**

Community

- 51 Community has been defined within the SIA to include:
- Cohesion – connection and participation in the community and stability*
 - Character – values, community culture and identity (including relevant fears and aspirations)*
 - Services and facilities – impact on community services and facilities and separation of people from facilities, services*
- 52 **I agree with the positive impacts that the SIA has identified for the Regional, Local and Sub-Local Communities.** There will be moderate to high positive benefits from having increased connections through the reduction in severance.
- 53 I disagree with the assessment of adverse impacts related to the category of Community, particularly that of community cohesion.
- 54 The SIA notes that the overall scale of impact is based on a consideration of all factors, clarifying that a high severity impact (positive or negative) experienced by a small proportion of people for a short period will be low or very low impact. According to the SIA, this recognises that in some cases duration, extent, likelihood and

severity of impact may be of different scale and it is the overall outcome that is considered.

- 55 In this regard, I disagree with the scale of impact that has been used to assess some of the impacts within the SIA assessment, particularly with regard to community cohesion. A high severity impact (even if only experienced by a small proportion of people) should still be recognised as having a high impact.
- 56 The impact of property acquisition on community change and social cohesion is one impact that has been under-rated within the SIA. By way of example, within the Levin community the degree of community change through acquisition was not considered significant and was assessed as having very low to negligible impacts on the overall Levin community. This was determined on the basis that only 0.7% of Levin households would be subject to upcoming property negotiations, the impacted houses are spread from north-east Levin to the southern extent of the local community, and because 34% of residents in Levin had lived in their house less than a year. In addition, by focussing on impacts at the Sub-Local level, the SIA has not considered the cumulative impact of the total number of residents that who have properties acquired.
- 57 The SIA has not taken into consideration other factors associated with property acquisition, such as the connection residents have to their homes and the significant impact property acquisition has on their lives. Technical Assessment D: Landscape, Visual and Natural Character has given the impact of property acquisition in this location a higher impact rating, commenting that in the Waihou Road area (Levin Sub-Community) there will be significant adverse effects on character and amenity.
- 58 I note too the significant potential effects flowing from the lack of east-west connectivity at Tara-Ika, caused by the absence of the East West Arterial and other cycle and pedestrian crossings as shown on the Tara-Ika (Plan Change 4) Structure Plan. Specific effects identified by Mr McIndoe include avoidable increased vehicle dependency and use (and to consequent adverse health, social and environmental effects), increased carbon emissions, compromise to the planned neighbourhood and community services at the centre of Tara-Ika, and social severance. Mr Cullen identifies similar issues in his report, including social and economic impacts. Of these, social severance is of most concern to me. I understand that there will be further workstreams regarding this matter and I am happy to participate in those.

- 59 It is my opinion that across all the Sub-Local and Local Community levels, the impact on Community will be **Moderate Negative (rather than Low)** and that this will be consistent regardless of the community. From a mitigation perspective, there is very little that can be mitigated given that property acquisition is outside the scope of the notices of requirement. Nevertheless, increasing the level of impact provides a more accurate assessment of this social impact on the communities within the corridor.

Health and Wellbeing

- 60 Health and Wellbeing has been defined within the SIA to include:

Mental, physical, social and spiritual wellbeing

- 61 I agree with the assessment that has been made for Health and Wellbeing across the Regional, Local and Sub-Local Communities, which was assessed as high positive because it will improve the safety of the community and reduce incidents of road crashes causing death and serious injury.
- 62 The SUP has enabled the project to score high in the category of Health and Wellbeing because it will be used for recreation, provide a safer environment for walking and cycling and has the potential to become an attraction to the area.
- 63 In addition, access to recreation facilities should also have been assessed as part of the Health and Wellbeing category. There are a number of equestrian facilities and racecourses across the region (as identified by my preliminary review) that should be assessed with regard to access. These facilities are either accessed by users arriving on horseback or by using a car with trailer. Provision for access to these sites should be addressed in evidence.
- 64 Health and Wellbeing also relates to the ability for emergency services to be able to act as a first responder within a ten minute call out timeframe. A key objective of the Project is to enable the State Highway to be resilient in cases of emergency. The proposed highway will assist in providing emergency services with suitable access to communities along the corridor, which will improve response times. The SIA did not include mention of the Health and Wellbeing benefits from emergency services being available in times of need.

Quality of the Living Environment

- 65 Quality of the Living Environment has been defined within the SIA to include:

- a. *Sense of place*
 - b. *Changes in comfort and attractiveness of areas*
 - c. *Liveability*
 - d. *Fear and aspirations*
- 66 I agree broadly with the assessment that has been made for the Quality of the Living Environment. For the Regional and Local Communities, these are predominantly positive impacts because of the improvements to the Town Centre environment and decrease in traffic. In addition, these communities will experience benefits due to the investment within their local area and the impact for local businesses that are easily able to transport goods around the region.
- 67 At the Sub-Local level, there will be changes in character to the local area and the community may also have fears related to the Project due to the direct impacts that they may experience. For this reason, I agree with the assessment in the SIA that social impacts at the Sub-Local level will be moderate negative.

G. SUBMISSIONS

- 68 I have reviewed the submissions that have been made on the NoR and identified those that comment on the potential social impacts of the Project. I then categorised the comments into key themes that have a social impact. My comments in respect of those submissions and the themes that they raise are set out below.

Provision of multiuse pathway

- 69 19 submissions were received requesting that the SUP be converted into a multiuse pathway to accommodate a bridleway. These submissions were from individuals as well as equestrian organisations including Horowhenua Equestrian Advocacy Group (# 6) and Kapiti Equestrian Advocacy Group (#32). According to the submissions (Horowhenua Equestrian Advocacy Group (#6), Josien Reinalda (#12), Anita Lenaghan (#24), Kelly Henry (#26), Maggie Braddock (#27), Michael Braddock (#43), Lynda Andrews (#46), Nicola Robinson (#55)), the adjacent motorways such as the new Kapiti Coast Expressway (M2PP and PP2O) all have multiuse pathways that include a bridleway. The concern raised in the submissions is that lack of provision for a bridleway within Ō2NL creates a gap within the bridleway network preventing a user group from being able to utilise the proposed infrastructure. These submissions comment that the bridleways built to date alongside the new Kapiti Coast Expressway (M2PP and PP2O) have demonstrated that they can be of great

value to the community and attract people to the region. I agree with the submissions regarding the benefits that a bridleway would have for the community. The benefits are very similar to those identified for the SUP with regard to providing a recreation facility that could be a potential attraction for locals and those from outside the area.

- 70 Horse riders are road users and are considered by Waka Kotahi to be vulnerable users, similar to pedestrians and cyclists. The following submissions raise concerns about the need to consider the safety of this user group and state that it was discriminatory to not accommodate this user group when others have been catered for (Josien Reinalda (#12), Anita Lenaghan (#24), Maggie Braddock (#27), Sharon Walker (#31), Kapiti Equestrian Advocacy Group (#32), Michael Braddock (#43), Sarah De Geest (#65)). According to the submission from Anita Lenaghan (#24), Councils have a duty of care for this vulnerable user group, particularly as children and young people are most likely to ride horses and ponies along the roadway because this is the only mode of transportation available to them. I agree with these submissions that the safety of equestrian riders should be considered as part of the Project. The Project has considered the needs of cyclists who would otherwise be road users, however equestrian riders are also road users. I recommend that Waka Kotahi consider how other road projects such as the new Kapiti Coast Expressway (M2PP and PP2O) have incorporated a bridleway into the multiuse pathway design and whether this is practicable for Ō2NL.
- 71 Horse riding has a historical connection to the area and is part of the regional cultural landscape. Two submissions (Rebecca Wilson (#51), Sarah De Geest (#65)) referred to Te Hapori Hoiho – the National Māori Horse Association Aotearoa. This Association advocates for the important contribution that horses have made to New Zealand’s culture and therefore that provision for horse riding should be considered within the Project. I agree with the submissions that horse-riding has had a significant influence on the cultural landscape within the study area. This is evident by the number of equestrian clubs and race courses in the region, as identified in my preliminary search. By way of example, the Ōtaki Māori Racing Club located in close proximity to the proposed highway is New Zealand’s only Māori-governed horse racing club. The facility trains up to 40 horses per day, and hosts jockeys on site within their accommodation house. I recommend that consideration be given to the historical importance of horse riding and whether it can be incorporated into the design of the SUP.

- 72 According to the submissions by Horowhenua Equestrian Advocacy Group (# 6) and Kapiti Equestrian Advocacy Group (#32), a meeting was held with Waka Kotahi to discuss the provision of a multiuse pathway. At this meeting, these groups were advised that this would involve an additional cost to the Project of \$100,000 per km. A request was made by the Advocacy Groups to substantiate this figure which the submissions state has not been addressed by Waka Kotahi. The submissions also state that both groups are willing to work with Waka Kotahi to minimise these costs but that a response to this offer has not been received. There is no mention of these two Advocacy Groups within the SIA.
- 73 Overall, I agree with all the submissions that discussed the importance of horse riding and that their needs should be considered in the design of the SUP. Horse riding is an important part of the community and is part of the cultural identity. There are many facilities in close proximity to the Project that would benefit from horse riders having a safe pathway to travel alongside the motorway. I recommend that a recreation assessment of horse riding in the region be undertaken by Waka Kotahi, to confirm the location of equestrian facilities and the effects of the Project on them.

Historical connection to the area

- 74 Three submissions received were from residents (Bill Hunt - Ratanui Farm Ltd (#7), Ross Wallis (#21) and Karen and Stephen Prouse (#49)) that have been notified that their properties will be subject to partial or complete acquisition. These residents wrote in their submissions about the historical connection they have to their property and the surrounding area. According to Bill Hunt - Ratanui Farm Ltd (#7), his family are the third generation on the farm and they have a lot of history and good memories from having held the property for over 100 years.
- 75 Similarly Ross Wallis (#21) wrote that the compulsory acquisition of two of the land blocks will cause her to lose access and her association with the majority of her whānau lands inclusive of the site of the home where she grew up and where her first born child lived. The concern was expressed that construction of the Project will demean the liveable values of the Kuku Me Ohau rohe that she grew up in, lived in and retains a personal and whānau interest in.
- 76 Karen and Stephen Prouse (#49) have prepared their submission on behalf of the Prouse Trust Partnership. Their property is the Ashleigh Estate which has been home to five generations of the Prouse Family since 1891. The property has been

identified within Technical Assessment M: Built Heritage as the only heritage building affected by the Ō2NL Project. Although it is not a listed heritage property, it is considered by the assessment to be of regional significance. According to the submission, the family has strong and deep connections to the local history and connections to the land with many layers of family and European History on the property. For this reason, the submission discusses the significant social impact that the Project will have on the family due to the permanent impacts on family connections with the land and the ability for succession to future members of the family. There are also impacts to culture and identity in the local area.

- 77 These submissions all emphasise the importance of their personal connection to place and community identity. The SIA references the Cultural Impact Assessments undertaken but does not provide an analysis of how this information has shaped the identity of the communities within the areas of interest. The SIA has stated specifically that it does not assess the cultural effects of the Project, or potential impacts on mana whenua values. This however prevents the SIA from being able to assess sense of place. Technical Assessment D – Landscape, Visual and Natural Character describes how one of the catalysts of Pākehā settlement was the construction of the Wellington and Manawatū Railway. There is a strong social history associated with the sawmills and the tramways through the area. The Prouse Family and the Ashleigh Homestead is one of the sawmilling families.
- 78 The impact of property acquisition has the potential to create a subsequent social impact associated with the loss of generational continuity. This impact has been identified in three submissions ((Bill Hunt - Ratanui Farm Ltd (#7), Ross Wallis (#21) and Karen and Stephen Prouse (#49)). Paragraphs 56 and 57 of my report have already outlined some of the reasons I disagree with the ratings associated with the impact of property acquisition and that a higher level of rating should be given for this impact. In addition, the impact on sense of place should be considered including the connections that some of the families have to the history and heritage of the place.

Protecting local character

- 79 The following submissions were concerned about the impact the Project will have on local character (Louise Miles (#20), Glenys Anderson (#22), Stephen and Miriam Main (#23), Rochelle and Matthew Apatu (#40) and Sarah Hodge (#71)). These submissions wrote about how the tranquillity of the area will be significantly impacted

by the Project. In the submission from Louise Miles (#20), there was concern about the loss of character to the village of Manakau. The submissions cited a report by Boffa Miskell for the 2008 Horowhenua Development Plan that described the village as having a 'unique' character.

- 80 I agree with the concerns raised in the submissions about the importance of protecting local character. For this reason, I reviewed Technical Assessment D: Landscape, Visual and Natural Character to understand the historical context. According to Technical Assessment D, Levin, Ohau, and Manakau were planned townships established in conjunction with the railway. Each was laid out on a 'four-square' grid. Ohau and Manakau have remained as villages with historic character. Levin, on the other hand, is the major service town and light industrial centre for the Horowhenua District.
- 81 The impact the Project will have on the character of the community is discussed within the SIA and was raised by the community in the consultation that was undertaken. It is rated in the SIA as a low negative impact, which is inconsistent with the findings from Technical Assessment D: Landscape, Visual and Natural Character, which states "there will be some unavoidable residual adverse effects on the landscape character and amenity values, most notably at Manakau Downlands and the area on the north-east outskirts of Levin."
- 82 For this reason, I disagree with the rating in the SIA for the impacts the Project will have on the character of the community, which is Low Negative. There are social impacts associated with a loss of character and amenity values, including a decrease in the sense of pride about a place. I disagree with the statement in the SIA that the impact "is mitigated because over time the community will create a 'new normal' responding to the changed community dynamics." For this reason, it is my opinion that the impact rating for Community at the Sub-Local level should be "moderate negative impacts."

Impact on Health and Wellbeing

- 83 Although the impact of noise, dust and vibration impacts are discussed in other reports, some of the submissions (Glenys Andersen (#22), and Stephen and Miriam Main (#23)) express concern about the consequent health impacts, particularly if local residents have existing health conditions. These submissions raised concerns about vulnerable members of the community. I agree that these are legitimate

concerns that should be addressed. The SIA has relied on Technical Assessment B (Noise and Vibration) to assess the impacts that noise will have on the community. I support the mitigation measures outlined in the SIA which include the requirements for the contractor to develop a construction noise and vibration management plan as well as the requirement for communication to the community in advance of works that may result in noise disturbance. These mitigation measures have been proposed as part of the consent conditions (DNV4).

- 84 Roger Parton (#30) prepared his submission on behalf of Speldhurst Country Estate, a registered retirement village midway between SH1 and Arapaepae Road. The village has 400 residences with almost 600 residents and a staff of approximately 200. The submission requested that consideration be given to the needs of this vulnerable user group. The SIA should have included an audit of retirement villages in close proximity to the Project, because they are a vulnerable community. Consideration should be given to needs of this group particularly with regard to noise, vibration and dust impacts. Roger Parton (#30) expressed concern about the safety of people with mobility impairments crossing the highway and referred to a fatality in 2022. Although I do not have the full details of the incident referred to, I do think the Project should have an awareness of the location of retirement villages in relation to the proposed highway. Consideration should be given to the design of any crossings to ensure that there is safe access for pedestrians with mobility impairments. In addition, these retirement villages have a high rate of visitation by emergency services. Therefore, a positive effect of the Project is enabling first response services to access these facilities within a ten-minute call out timeframe.
- 85 The importance of having a resilient road network was acknowledged by two submissions (Lynette Bailey (#37) and Roger Mcleay (#52)). According to these submissions, Cyclone Gabrielle has demonstrated the importance of having secondary access so that there is reliable transport infrastructure that can enable access in times of crisis and natural disasters. The current SH1 has had regular road closures due to vehicle accidents as well as localised storm events. Due to the potential for storms to increase in scale and frequency, the Project will provide greater resilience and integrity. Resilience of the proposed highway is one of the key objectives of the Ō2NL project, which is why I agree with the comments in these submissions. Although the SIA has recognised resilience as a positive social impact, I think there are additional benefits from a health and wellbeing perspective with first responders able to access all areas of the corridor and these should be documented.

Fears and aspirations

- 86 The length of time already undertaken to plan and seek approval for the Project has created a significant amount of uncertainty for local residents, as noted within the submissions from Maria Storey (#25) and HNZT Trustees (Anthony Young #35). According to Maria Storey (#25), property owners with potential acquisitions have had difficulty being able to sell their properties because of the high level of uncertainty associated with their properties. For these residents it has been a drawn out and stressful experience. The importance of avoiding any further delays of the Project was also recognised by HNZT Trustees (Anthony Young #35).
- 87 I consider that fears such as those outlined in these submissions are a legitimate social impact that should be considered as part of the application. In many cases, the impact has already occurred and there are limited options for mitigation, nevertheless it is still a social impact that should be identified as part of the SIA. Fears have not been appropriately assessed within the SIA. The SIA should have included a discussion on fears and aspirations within the impact category of Quality of the Living Environment. Although mitigation is identified in the SIA as being through the property acquisition process, that cannot be required as part of the NoR process. Other mitigation techniques include consent conditions that require a communication plan including a regular programme of meetings with the community, stakeholders and affected landowners.

Livelihood

- 88 The following submissions Lynette Bailey (#37), Horowhenua District Council (#67) and Sam Hadley Jones (Electra limited) (#70) expressed support for the Project due to the economic boost that it would have for the regional economy. These submissions discussed the creation of work opportunities, improving connectivity to improve food security and the ability for local towns, particularly Levin, to become thriving town centres. These matters are all supported by the findings in Technical Assessment O: Economics and Town Centre Impacts. In terms of social impacts, these matters all pertain to livelihood. The SIA has not discussed the impact that the Project will have on livelihood. Although there is discussion of some of the business impacts of the Project, these are predominantly in reference to some of the negative effects, particularly during construction. Overall however, the Project will have significant benefits at all levels of the community and this should be acknowledged.

For this reason, I would expand the Quality of the Living Environment Social Impact Category to include livelihood with an assessment of **Moderate Positive**.

H. CONDITIONS

89 I recommend the following amendments to the proposed conditions for the Ō2NL Project as lodged, noting that there are still some gaps in the baseline assessment which may (once filled through evidence) also result in the need for further or amended conditions:

Condition number	Amendment to condition
DCE1	<p>Insertion of the following text in bold should be added to Condition (a):</p> <p>“Prior to the commencement of construction activities, for the duration of construction activities and up to 6 months following completion of construction, a community liaison person or persons must be appointed by the requiring authority.</p>
Schedule 2 – Construction Noise and Management Plan	<p>Insertion of the following text in bold to Condition (k):</p> <p>“Reference to the procedures for maintaining contact with stakeholders; notifying of proposed construction activities in advance of any disruptive construction noise or vibration activities, communication with property owners and occupiers in advance of night works; and handling noise and vibration complaints included in the Communications Plan and complaints management procedure set out in Condition DCE3.</p>
Schedule 2 – Construction Air Quality Management Plan	<p>Insertion of the following point:</p> <p>“Advance communication to potentially impacted property owners and advice of mitigation options.”</p>

<p>Schedule 5: Objectives and Content of the Communications Plan</p>	<p>Insertion of the following point: “A regular programme of meetings with the community, stakeholders and affected landowners.”</p>
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90 In addition to the above conditions, the following additional conditions are recommended:

- a. For areas of productive land, topsoil stripped as part of construction should be used to rehabilitate earthwork areas following construction. This will help reinstate areas located within the construction footprint, including construction compounds and laydown areas, spoil sites and material supply sites. This approach will help ensure that land is reinstated so that it has the same or similar soil quality as it had prior to construction commencing. I suggest this is noted as an additional requirement to under Schedule 2: Construction Environmental Management Plan, item iii) C.

I. CONCLUSION

91 I agree with the methodology used to assess the social impacts of the Project. However, the SIA has only analysed social facilities and services within the three local communities, and there is social infrastructure (including recreation facilities) located outside the town centres in close proximity to the Project that have the potential to be impacted. In my review of the community profile, I have identified facilities that should have been included in the audit and are necessary as part of the impact assessment and also consideration of the submissions. These facilities include:

- a. Equestrian facilities including horse riding schools and racecourse facilities.
- b. Facilities that provide services to vulnerable communities including Early Childhood Education and Retirement Villages.
- c. Emergency services including Ambulance, Fire and Police

92 Although I agree with the categories of social impacts that have been identified within the SIA, the SIA should have also included resilience within the category of Way of Life as one of the objectives of the Ō2NL Project is to enhance the resilience of the state highway network. Increased resilience in the network would enable continued access in the event of an emergency, vehicle accident, or extreme weather event.

This would have significant benefits in enabling an alternative route if the State Highway has to close due to an unforeseen event. Similarly, the SIA should have included livelihood as a consideration within the social impact category of Quality of the Living Environment. An assessment of this impact would have demonstrated how the Ō2NL Project achieves the objective of supporting economic growth.

- 93 In my feedback on previous reviews of the SIA (dated 16 February 2022 and 26 July 2022), I recommended that a table be prepared to summarise the impact assessment, as is a recommendation in the Waka Kotahi Social Impact Guide. This table should be provided in evidence by Waka Kotahi as it will provide greater transparency on how the final rating for each impact was determined and enable me to confirm my opinion of the ratings in the SIA.
- 94 Overall, with regard to the ratings that have been applied, I agree with the SIA that ratings for the Regional and Local Communities will be more positive than those at the Sub-Local Community level. Regional and Local Communities will experience many of the benefits of the Project without directly experiencing many of the adverse impacts from construction and operation of the proposed Ō2NL corridor.
- 95 Within the social impact category of Way of Life, I disagree with the impact assessment at the Sub-Local Community level. According to Technical Assessment N: Productive Land, the Ō2NL corridor will create between 57 and 71 new areas of land that will be physically separated (by the state highway) from the remainder of the relevant property. There are 40 sites that will be less than one hectare which is considered effectively non-productive. This loss of productive land creates a social impact on a community's livelihood as well as the stress experienced by the community due to the uncertainty about the financial implications arising from this loss of land. In my opinion, the impact assessment for the social impact category of Way of Life is **Moderate Negative (rather than Low) at the Sub-Local level.**
- 96 I disagree with the assessment of adverse impacts related to the category of Community, particularly that of community cohesion. The impact of property acquisition on community change and social cohesion has been under-rated. The SIA has not taken into consideration other factors associated with property acquisition, such as the connection that residents have to their homes and the significant impact that property acquisition has on their lives. In my opinion across all the Sub-Local and Local Community levels, the impact on Community will be **Moderate Negative (rather than Low).**

97 The submissions raised a number of issues which were not addressed in the SIA, specifically:

- a. The importance of horse riding and that their needs should be considered in the design of the SUP. Horse riding is an important part of the community and is part of the cultural identity. There are many facilities in close proximity to the Project that would benefit from horse riders having a safe pathway to travel alongside the motorway. I recommend that a recreation assessment of horse riding in the region be undertaken by Waka Kotahi, to confirm the location of equestrian facilities and the effects of the Project on them.
- b. The impact of property acquisition has the potential to create a subsequent social impact associated with the loss of generational continuity. Paragraphs 56 and 57 of my report have already outlined some of the reasons I disagree with the ratings associated with the impact of property acquisition and that a higher level of rating should be given for this impact. In addition, the discussion of the impact on the sense of place in the SIA does not refer to the connections that some families have to the history and heritage of the place. I recommend Waka Kotahi provide an assessment of this.
- c. The impact the Project will have on the character of the community is discussed within the SIA and was raised by the community in the consultation that was undertaken. It is rated in the SIA as a low negative impact, which is inconsistent with the findings from Technical Assessment D: Landscape, Visual and Natural Character which states, “there will be some unavoidable residual adverse effects on the landscape character and amenity values, most notably at Manakau Downlands and the area on the north-east outskirts of Levin.” There are social impacts associated with a loss of character and amenity values, including a decrease in the sense of pride about a place. For this reason, it is my opinion that the impact rating for Community at the Sub-Local level should be **Moderate negative**.
- d. Consideration should be given to the needs of vulnerable communities particularly with regard to noise, vibration and dust impacts. The Project should have an awareness of the location of retirement villages in relation to the proposed highway. Consideration should be given to the design of any crossings to ensure that there is safe access for pedestrians with mobility impairments. In addition, these retirement villages have a high rate of visitation by emergency services. Therefore, a positive effect of the Project is enabling

first response services to access these facilities within a ten-minute call out timeframe.

- e. The length of time already undertaken to plan and seek approval for the Project has created a significant amount of uncertainty for local residents. Fears associated with this uncertainty are a legitimate social impact that should be considered as part of the application. Fears have not been appropriately assessed within the SIA. For this reason, I recommend Waka Kotahi provide an assessment of the Project on fears and aspirations within the impact category of Quality of the Living Environment.

98 A review of the consent conditions has been undertaken and recommendations made for amendments to some of these conditions, and some new conditions, based on the proposal as it currently stands.

Michala Lander

28 April 2023

APPENDIX 5

SOTRMWATER AND WATER QUALITY – JUSTINE BENNETT

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of notices of requirement by Waka Kotahi NZ Transport Agency (Waka Kotahi) to Kāpiti Coast District Council and Horowhenua District Council for designations to construct, operate, maintain and improve a new state highway and shared use path and associated infrastructure, between Taylors Road (to the north of Ōtaki) and State Highway 1 north of Levin

SECTION 198D REPORT OF JUSTINE ANN BENNETT – WATER QUALITY

**KĀPITI COAST DISTRICT COUNCIL AND
HOROWHENUA DISTRICT COUNCIL**

28 April 2023

A. OUTLINE OF REPORT

- 1 This report, required by section 198D of the Resource Management Act 1991 (“**RMA**”), addresses the issues set out in section 171 of the RMA, to the extent that they are relevant to the requirements lodged with the Kāpiti Coast District Council (“**KCDC**”) and Horowhenua District Council (“**HDC**”).
- 2 The notices of requirement given by Waka Kotahi NZ Transport Agency (“**Waka Kotahi**”), to KCDC and HDC are for designations to construct, operate, maintain and improve a new state highway and shared use path and associated infrastructure, between Taylors Road (to the north of Ōtaki) and State Highway 1 north of Levin. The project is known as the Ōtaki to North of Levin Highway Project (the “**Ō2NL Project**” or “**the Project**”).
- 3 In addition, Waka Kotahi has separately lodged resource consent applications relating to the Ō2NL Project with Manawatū-Whanganui Regional Council and Greater Wellington Regional Council.
- 4 This report addresses territorial authority related water quality implications with regard to the notices of requirement lodged with KCDC and HDC. Matters relating to the resource consent applications are outside the scope of this report, and being addressed by technical advisors for the Regional Councils.
- 5 In preparing this report, I have relied on the following reports prepared for the applicant, Waka Kotahi to provide the description of the proposed activity and assumptions made in preparing the Assessment of Environmental Effects supporting the application.
 - i. Volume II - Assessment of Environmental Effects (AEE), November 2022
 - ii. AEE Appendix Four Design and Construction Report, July 2022
 - iii. AEE Appendix 4.2 Stormwater Management Design
 - iv. AEE Appendix 4.3 Erosion and Sediment Control
 - v. Technical Assessment H – Water Quality
 - vi. Technical Assessment K – Freshwater Ecology

- 6 I note that I have also had conversations with Regional Council experts Logan Brown, Stu Farrant and Kerry Pearce regarding water quality impacts, stormwater management and erosion and sediment control respectively. I have also spoken with Nick Keenan who has prepared the technical reporting of behalf of the Waka Kotahi for stormwater design.
- 7 While this report is pursuant to section 198D of the Resource Management Act, I have in (accordance with section 42A(1A) and (1B) of the Act) attempted to minimise the repetition of information included in the application and where I have considered it appropriate, adopt that information.

B. QUALIFICATIONS / EXPERIENCE

- 8 My name is Justine Bennett. I am Technical Director Water and Environment at GHD Limited. I have been in that position since January 2018.
- 9 My role involves technical leadership and technical review on a wide range of environmental and water resource management projects.
- 10 I hold a Bachelor of Science (Hons) in Environmental Science and a Masters Degree in Water Pollution and Management. I am a member of EIANZ, the Infrastructure Sustainability Council and Water New Zealand.
- 11 I have more than 20 years' experience in water management, in particular, associated with multidisciplinary infrastructure projects and integrated catchment management. My focus has been water quality impacts due to point source discharges or with a focus on land use change, most recently in the Waikato, Wellington and Bay of Plenty and previously with Auckland Council.
- 12 I provided an environmental management lead role on a number of Waka Kotahi state highway projects including Puhoi to Warkworth, Warkworth to Wellsford and Penlink and have personally authored a number of water quality assessments and erosion and sediment control plans. I have provided advice to clients regarding the impacts of development in urban and peri-urban catchments and have recommended stormwater management approaches to address water quality and quantity impacts.
- 13 I have not yet had the opportunity to conduct a site visit and familiarise myself with the site and surrounding area. As soon as it is practicable for me to do so, I will carry out a visit. However, I do not consider that a site visit is essential in order to enable to me to prepare this report.

C. CODE OF CONDUCT

- 14 I confirm that I have read and agree to comply with the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023. I confirm that I have stated the reasons for my opinions I express in this report, considered all the material facts that I am aware of that might alter or detract from those opinions, and that the report and the issues I have addressed are within my area of expertise.
- 15 Statements expressed in this report are made within the scope of my expertise, except where I rely on the technical advice referred to in paragraph 5 of this report.
- 16 I have all the information necessary to assess the application within the scope of my expertise and am not aware of any gaps in the information or my knowledge.

D. EXECUTIVE SUMMARY

- 17 Water quality is of relevance to the notices of requirement (“**NoR**”) through section 171 of the Act, including reference to the effects of the proposed activity and matters guided by the provisions and policy direction specified in the National Policy statement for Freshwater Management (NPS), Regional Policy Statements and the two District Plans (objectives and policies).
- 18 There are various objectives and policies in the Kāpiti Coast District Plan and the Horowhenua District Plan relating to land use, development and transport infrastructure and the management of effects on the aquatic and terrestrial environment, water quality and stormwater treatment and management, including erosion and sediment control, and natural hazards.
- 19 Technical Assessment H (the Water Quality assessment) completed to support the NoR is satisfactory in my opinion.
- 20 The erosion and sediment controls and operational stormwater controls proposed generally represent industry good practice.
- 21 However, I consider more detail is needed with regard to how open and susceptible earthworks areas will be managed during peak earthworks, what additional levels of control will be provided to protect more sensitive receiving environments and how the erosion and sediment control approach will evolve, adapt and change in relation to performance, effects on the receiving environment or unforeseen circumstances.

- 22 Conditions on the future designations will need to provide certainty to the consenting authorities that these controls are located, built and operated effectively and that the receiving environment is monitored in such a way as to enable assessment of whether any adverse effects, attributable to the Project, are apparent and need to be further mitigated. I have made recommendations as to how this could be better achieved.
- 23 I am happy to attend caucusing, mediation, or other meetings to progress resolution of the matters I have raised, and in particular to discuss the conditions that ought to be included in the proposed designations.

E. BACKGROUND

- 24 Whilst, under the RMA specific responsibility for managing the quality and quantity of surface water and groundwater falls substantially to the Regional Councils, the District Councils also have an important role to play in the management of activities on water and the surface of water, and ensuring the important values of waterways, being a natural and physical resource of the district, are effectively protected.
- 25 Under s.171 RMA, 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—
- 26 *(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; ...*
- (d) any other matter the territorial authority considers reasonably necessary in order to make a recommendation on the requirement.*
- 27 The Objectives and Policies of the Wellington Regional Policy Statement (2013), seek to safeguard the life supporting capacity of water bodies, minimise contamination from stormwater and earthworks activities and protect healthy ecological and ecosystem functions. They require these to be given effect to through district and/or regional plans.
- 28 Further the Wellington Regional Policy Statement is currently undergoing a plan change process for Plan Change 1 to expressly give effect to the NPS Freshwater and the requirements to address Te Mana o te Wai and to better align with the Proposed Natural Resource Plan (PNRP) which is currently at appeal stage. The

Proposed Plan Change 1 is seeking to strengthen objectives and policies for water quality and the health of aquatic ecosystems and to take an integrated approach to considering the effects of development, water management, biodiversity and climate change.

- 29 Additionally under the NPS Freshwater Management the following obligation for local authorities is stated in section 3.5 (3) and (4) :

“In order to give effect to this National Policy Statement, local authorities that share jurisdiction over a catchment must co-operate in the integrated management of the effects of land use and development on freshwater.”

“Every territorial authority must include objectives, policies, and methods in its district plan to promote positive effects, and avoid, remedy, or mitigate adverse effects (including cumulative effects), of urban development on the health and well-being of water bodies, freshwater ecosystems, and receiving environments. This includes giving effect to Te Mana o te Wai within District Plans”

- 30 The policies and objectives of the KCDC and/or the Horowhenua District Plans that provide direction with respect to water quality relate to the following:

- a. Protection of the natural character of lakes, rivers and other water bodies and their margins, from inappropriate use, and development enhancing the health of terrestrial and aquatic ecosystems (HDC Objective 3.3.1);
- b. Enhancing the health of terrestrial and aquatic ecosystems (KCDC Policy DO2);
- c. Enhancing the mauri of waterbodies (KCDC Policy DO2);
- d. Managing land use activities resulting in increased sediment and contaminant levels of surface water, including storm water, to reduce the likelihood of aquatic ecosystems being detrimentally affected (KCDC Policy ECO-P2);
- e. Avoiding the significant adverse effects of earthworks associated with the transport network (KCDC Policy TR-P4);
- f. Minimising pollution of water resources (e.g., stormwater quality and quantity, increased siltation of waterbodies due to road construction, disruption of

waterbodies through the use of culverts and piping which can affect fish migration) (KCDC Policy TR-P4);

- g. Consideration of the functional necessity to be located in or near the water body and whether no reasonably practicable alternative locations exist (HDC Policy 3.3.4).

31 The scope of this report has therefore focussed on consideration of the effects on water quality with regard to:

- a. Land use effects on water bodies (eg. effects from bulk earthworks, operational stormwater effects and management).
- b. The measures proposed to control and mitigate potential effects from land disturbance and land use change on water quality and whether these are adequate/appropriate.
- c. Relevant objectives and policies of the Regional Policy Statements and District Plans.
- d. Provisions of the NPS Freshwater Management in so far as they relate to District Councils.
- e. The adequacy of the controls provided to manage water quality effects through the designation and consent conditions for both the construction and operational phases of the Project.

F. REVIEW OF APPLICATION

32 In preparing this report, I reviewed relevant parts of the NoR (with a particular focus on those documents listed in paragraph 5 above) and the section 92 responses provided by Waka Kotahi subsequently, dated 22 December 2022.

33 I do not agree with Waka Kotahi that the designation conditions should not address water quality matters. As set out in this report, I believe that water quality impacts related to land use change, and relevant planning documents are appropriate considerations.

- 34 I consider that, generally, a good assessment of water quality effects has been provided which links well with the proposed erosion and sediment control approach and freshwater ecological assessments. The areas I feel require greater clarity or management than is currently proposed are discussed in this report.
- 35 I consider that the potential water quality impacts due to land disturbance required to enable land use change are of relevance to KCDC and HDC and I hence provide commentary below with regard to the proposed activities and controls for the Project.

Design Guidelines referenced in conditions

- 36 The design guidance referred to in Schedule 8: Objective and content of the Erosion and Sediment Control Plan, of the conditions is *Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region* June 2016 Guideline Document 2016/005 (GD05), Version 2. In paragraph 5 of Mr Gregor McLean's assessment on behalf of Waka Kotahi¹ it states that his assessment has also been carried out in part on the basis of the Waka Kotahi Erosion and Sediment Control Guidelines for State Highway Infrastructure, September 2014. This guideline is not recognised as industry best practice or referenced in conditions.
- 37 Given that the *Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region* June 2016 Guideline Document 2016/005 (GD05), Version 2 is an appropriate best practice guide, and is likely the most commonly used reference document in New Zealand. It is unclear why Waka Kotahi in some instances within the conditions is seeking to rely upon the *Waka Kotahi Erosion and Sediment Control Guidelines for State Highway Infrastructure*, September 2014.
- 38 In reading Mr McLean's technical report, and in discussions with Mr Kerry Pearce (the Regional Council expert in relation to Erosion and Sediment control) on 22nd March 2023, this appears to be due to the desire to offer an alternate design standard for areas of the proposed site with gravel based soils.
- 39 I agree with Mr Pearce, that whilst these soils are likely to generate less runoff and yield less sediment than other soil types if undisturbed, once compacted and reworked during construction their infiltration rates will be significantly impaired. My concern is that if a lesser design standard is adopted for such areas resulting in smaller sediment

¹ Volume II, Appendix 4: DCR Report, Appendix 4.3 Erosion and Sediment Control Assessment Report – Gregor McLean

control devices, and then through compaction, the runoff and sediment generated exceeds that considered as a basis for design, the devices will be undersized and sediment will be released to the receiving environment. My preference would be to refer to GD05 through-out.

Construction Activities definition

- 40 The resource consent condition RES1 refers to sediment losses to a natural water body arising from construction activities. “Construction activities” is defined to exclude establishment works and thus these early activities are not bound by the requirements for the Site-Specific Erosion and Sediment Control Plans.
- 41 Establishment works include the removal of vegetation, creation of haul roads and land disturbance to set up construction yards and lay down areas. Cumulatively these areas can be significant and can expose bare earth to the of erosion and sediment release. Controls should be in place before these activities become substantive and I believe that land disturbance during establishment works are of sufficient risk to warrant erosion and sediment control documentation, management and review and approval of the mitigation measures proposed.
- 42 I recommend that a condition be imposed which requires site specific erosion and sediment control plans and control devices to be in place to accommodate “Establishment Works” as well as “ Construction Works” to enable land disturbance associated with haul roads, site establishment, veg clearance and stripping to be included and managed appropriately.

Measures for elevated risks during peak earthworks

- 43 The current approach to the potential effects of earthworks activities is based on the average quantum of earthworks across the duration of the Project. However, the quantum of earthworks and area of open ground exposed for sediment generation will vary across the Project period with a peak earthworks period posing the greatest potential risk. The assessment and mitigation measures do not currently appear to adequately address the management of this elevated level of risk during peak earthworks and due to a potential peaking of exposed open areas.

Better protection for sensitive areas

- 44 I support the use of an industry best practice approach for erosion and sediment control and on this basis, am of the opinion that additional controls should be provided to better protect sensitive areas such as in proximity to sensitive aquatic environments along the Waiauti, Waikawa, Kuku and the Ohau watercourses or locations for higher risk activities such as fuel or chemical storage or concrete batching plants. These should be included in the overarching Erosion and Sediment Control Plan and detailed in the SSES CPs.

Monitoring

- 45 To enable the performance of the erosion and sediment control devices to be assessed, it is proposed that manual clarity checks are carried out at each sediment pond and decanting earthbund. The performance of the sediment control devices is undoubtedly related to the amount of sediment released to the receiving environment. It is unclear how this relates to the potential for adverse effects in the receiving environment and how this is linked to the event based monitoring in the receiving environment.
- 46 The Section 92 response² (item 28) states that “There has been no attempt to establish a quantitative link between water clarity of 100mm intermittently discharged from erosion and sediment control devices and a 15% change of QMCI in the streams”.
- 47 However, item 29 of the Section 92 response³ refers to proposed consent condition RFE4 which requires routine *and* event based monitoring (REF4b)iii) at upstream and downstream locations during and post construction, however it does not specify what parameters be monitored as part of the event based monitoring. I note that condition REF4 c) lists parameters for *routine monitoring*, including TSS and water clarity.
- 48 I would expect clarity and total suspended sediment to be included at both upstream and downstream locations for event based monitoring also and for interpretation to be provided in reporting which expresses the potential or actual acute (event based) or cumulative (contribution over the construction period) implications for water quality

² S.92 Response to GWRC and Horizons, dated 23 December 2022, Item 28, page 12

³ S.92 Response to GWRC and Horizons, dated 23 December 2022, Item 29, page 12

and ultimately the freshwater ecosystems. Condition RGA3 requires annual reporting of receiving environment monitoring but this will be too late to understand and respond to any acute event based effects. The timing for reporting of event based monitoring results should be aligned with the requirements of RES9.

- 49 In order to consider the potential impacts of the Project, monitoring results will need to be compared against a robust set of baseline data, collected over a long enough time period to identify current seasonal trends. I suggest this requires a baseline monitoring period of as long as possible prior to construction, and preferably 2 -3 years. This should be specified as a minimum in the consent conditions.
- 50 Proposed consent condition RFE4 requires routine *and* event based monitoring at upstream and downstream locations, however it does not specify what must be monitored as part of the event based monitoring. I would expect water clarity and total suspended sediment to be included at both upstream and downstream locations during event based monitoring.
- 51 RGA3 requires annual reporting of receiving environment monitoring but this will be too late to understand and respond to any acute event based effects. The timing for reporting of event based monitoring results should be aligned with the requirements of RES9.
- 52 In order to consider the potential impacts of the Project, monitoring results will need to be compared against a robust set of baseline data, collected over a time frame that is long enough to identify current seasonal trends. I would suggest this would require a baseline monitoring period of 2 -3 years prior to construction. This should be specified as a minimum in the consent conditions.

Operational stormwater design standard

- 53 I agree with Mr Keenan's opinion that treatment is more assured and robust with a treatment train approach which combines more than one treatment category in series.⁴
- 54 The "treatment train" approach aligns with what is termed "treatment suite" in Auckland Council Guidance Document (GD01) Stormwater Management Devices in

4 Ōtaki to North of Levin Highway Project, Design and Construction Report, Appendix 4.2: Stormwater Management Design

the Auckland Region (2017). On the basis of this inclusion on GD01, it is my opinion that the treatment train approach proposed for operational stormwater management represents industry good practice and is enabled by the relatively spacious nature of the proposed designation.

- 55 Mr Keenan advised in our conversation of 28th March 2022, that the ability to achieve the water quality outcomes relied on the design parameters and standards followed. Mr Keenan's report (Appendix 4.2 to the DCR report (Volume II AE – Appendix 4)) and the Section 92 response refer to Auckland Council Guidance Document (GD01) Stormwater Management Devices in the Auckland Region (2017) as this key design reference.
- 56 I note that, consent condition RSW1 refers to the Waka Kotahi NZ Transport Agency 'Stormwater Treatment Standard for State Highway Infrastructure' dated May 2010. This should be aligned with Mr Keenan's report and corrected to refer to the Auckland Council Standard - Auckland Council Guidance Document (GD01) Stormwater Management Devices in the Auckland Region (2017).

Performance of Operational Stormwater Controls

- 57 Appendix 4.2 of the DCR states that the stormwater treatment train is expected to capture and treat 75-90% of total suspended solids, oils and soluble metals (copper and zinc) from road runoff for 90% of storms.
- 58 It is therefore assumed that the high level of performance stated in Appendix 4.2 of the DCR would be maintained throughout the operational period with periodic inspections and maintenance activities. No monitoring of the performance of the stormwater devices with respect to contaminant removal or quality of water discharged is however proposed. Highly trafficked roads are known to generate a relatively higher potential contaminant load of suspended sediment, heavy metals and hydrocarbons. It is common practice for consented point source discharges from locations known to present a higher risk of contaminant generation to be monitored for discharge quality.
- 59 Other types of point source discharges would typically have a routine monitoring programme to demonstrate that contaminant removal rates are achieved and that discharges meet a water quality limit. I can see no reason why the stormwater

discharges from this state highway would not have a similar requirement imposed in conditions.

60 In addition, I believe that in order to provide a suitable level of certainty that the devices will be designed, built, operated and maintained during operation, the regulatory authorities should be supplied with an opportunity to approve the design, receive and check the As-Builts and review an operation and maintenance plan for the stormwater systems.

61 Condition RSW2 requires the submission of As-Builts but in my opinion the quality of the design and the robustness of the operation and maintenance regime should also be addressed in the condition set and thus a condition requiring engineering sign off of design and review of an Operation and Maintenance Plan are also required.

Approach to impact uncertainty – adaptive management approach

62 Policy INF- GEN – P4 states that any adverse environmental effects arising from the establishment, operation, maintenance and upgrading of infrastructure will be avoided, remedied or mitigated as far as reasonably practicable by a range of approaches including adaptive management measures. The Section 92 response from Waka Kotahi (Item 163) suggests that this is not relevant since it considers that there is no uncertainty related to the impacts of the Project over time.

63 I disagree, and consider that it is entirely possible, for example, that changes may occur during the longer operational period of the infrastructure asset or during construction; the performance of an erosion and sediment control measure or stormwater treatment device may change and prove to be deficient over time, or rainfall patterns may change and be different to what has been assumed as a basis for design, effects in the receiving environment may be observed to an extent that is greater than predicted or a threatened or at risk species may be observed that requires additional protection to be in place.

64 An adaptive management approach remains open to change. It monitors performance and outcomes and adapts and where necessary through making adjustments to construction activities or providing improved measures to minimise environmental effects, in this case in relation to runoff quality during construction and with respect to the operational stormwater treatment approach. It enables continuous improvement across projects and industry best practice.

- 65 An adaptive management approach for erosion and sediment control was taken for Waka Kotahi's Puhoi to Warkworth project and is proposed for Warkworth to Wellsford. This was based on undertaking an Adaptive Monitoring approach through the use of an Adaptive Monitoring Plan throughout the construction period.
- 66 The Adaptive Monitoring Plan as required by resource consent condition 33 for Puhoi to Warkworth, states that the Consent Holder shall prepare an Adaptive Monitoring Plan (AMP) to ensure the objectives in Condition RC17 are met and to ensure continuous improvement as to the effectiveness of the erosion and sediment controls employed on site.
- 67 Resource consent condition 17 for Puhoi to Warkworth required that the Consent Holder shall implement all Construction Works in accordance with the best methods available at the time of construction to:
- (a) Minimise the volume and area of the proposed earthworks required for the Project through the design of batter slopes appropriate to expected soil types and geology;
 - (b) Maximise the effectiveness of erosion and sediment control measures associated with earthworks by minimising potential for sediment generation and sediment yield; and
 - (c) Minimise effects on freshwater and marine water environments within or beyond the Project boundary, with particular regard to reducing the likelihood that the Project will generate sediment at the trigger level specified in Condition RC36(d).
- 68 If the event triggers are exceeded, the consent conditions go on to specify actions to be taken i.e.:
- a. Inspect and record observations of the earthworks site and erosion and sediment control devices to identify any problems or activities likely to have contributed to an increased sediment discharge;-
 - b. Remedy any identified problems, and implement any further controls on activities or areas of the site that are likely to contribute to sediment discharge into the receiving environment.

- 69 If significant effects in the receiving environment are observed due to the Project, then mitigation or offset of these effects must be provided.
- 70 Whilst the Puhoi to Warkworth example above relates solely to the potential effects of construction, I recommend that to give effect to Policy INF- GEN – P4, an adaptive management approach is similarly applied to enable monitoring of construction and operational control measures. Then, based on performance and any observed effects in in the receiving environment, changes and improvements to the control measures and the ways in which are activities undertaken should be made to minimise or offset adverse effects on the receiving environment.
- 71 A condition from Waka Kotahi’s Puhoi to Warkworth project, setting out the content of such a plan, albeit limited to the construction phase, is provided in **Attachment 1**. This could be modified to also include the operational phase of the Project.
- 72 A consent condition requirement for an Adaptive Management Plan as part of the suite of plans underpinning the Erosion and Sediment Control plan would be an appropriate way to address this.

Lake Horowhenua

- 73 Lake Horowhenua is highly valued by Mana Whenua and the local community. It is largely groundwater fed and its character and values are currently impacted by poor water quality. Mr Keenan acknowledged the sensitivity of the lake and noted that Project impacts on Lake Horowhenua were minimised through treatment of stormwater via the treatment train prior to discharge via soakage to groundwater. I agree that this is a suitably conservative approach.

Operational Incident Management

- 74 Mr Keenan confirmed in discussion that to date there is no provision for the management and containment of chemical spills or firefighting foam/water during operation. I believe that this should be addressed, through design and reporting to manage the risk of soil and water contamination as a result of accidental spills or vehicle fires.

- 75 I suggest that this is resolved through a condition which requires it to be incorporated as a design consideration and with appropriate protocols documented in the operation and maintenance plan.

G. SUBMISSIONS

- 76 During Construction: A number of submissions raise concerns about the adequateness of the proposed erosion and sediment controls and associated monitoring , #73 Kiwirail, # 60 Carl and Emma Chalmers, and #59 Wellington Fish and Game. I am of the opinion that the approach proposed for erosion and sediment control follows industry best practice and whilst it cannot provide a guarantee that adverse effects will not be experienced, it does make them much less likely. Monitoring of both the performance of the sediment control devices and within the adjacent water ways is proposed, the latter also including monitoring of instream biota communities as indicators of water quality impacts.
- 77 Operational Stormwater: Submission 66 - John Bent expresses concern about the lack of consideration given to the capture of floating litter. I agree that this does not appear to have been addressed in the application and litter will be present and conveyed in the runoff from the road. It is likely it will be caught up in the swales and treatment devices. Appropriate provision for litter management and removal should be set out in the Operation and Maintenance procedures for the operational stormwater system. This should be addressed through an appropriate consent condition and could be incorporated in the operation and maintenance plan.
- 78 Submissions #41 and #50 express concern about the ability of the runoff from the operational road surface to be captured and appropriately treated. Whilst the design basis for operational stormwater has referenced industry best practice at a conceptual “for consent” level for the alignment overall, the specific treatment proposed in the vicinity of these two submitter properties is not yet known or designed. These concerns will need to be further considered and responses provided by Waka Kotahi as the design develops.

Justine Bennett

28 April 2023

Attachment 1

Adaptive Monitoring Plan Example (Pūhoi to Warkworth – Construction Phase)

Adaptive Monitoring Plan

RC33 The Consent Holder shall prepare an Adaptive Monitoring Plan (AMP) to ensure the objectives in Condition RC17 are met and to ensure continuous improvement as to the effectiveness of the erosion and sediment controls employed on site.

RC35 The AMP shall:

(a) Identify how the requirements of conditions RC17 and RC36 will be provided for;

(b) Include procedures for undertaking:

- I. Ongoing site visual assessments of all erosion and sediment devices;
- II. Ongoing device monitoring including flocculation;
- III. Automatic onsite rainfall monitoring using at least 2 rain gauges, including email and text notifications of rainfall triggers as specified in Condition RC36(b);
- IV. A manual grab sample during the storm to measure TSS of all discharge points of sediment retention devices, at the time of a discharge and as a result of the trigger events identified in Condition RC36(b) below;
- V. Ongoing inflow and outflow monitoring (measured in m³/sec) of the discharges into and out of four SRPs (two (2) in the Pūhoi catchment and two (2) in the Mahurangi catchment), with at least one pond in each catchment treating steeper earthworks areas; and
- VI. Automatic sediment sampling at the same four selected SRPs (2 in the Pūhoi catchment and 2 in the Mahurangi catchment) to measure inflow and outflow TSS.
- VII. Monitoring to detect sediment deposition in the coastal marine area to give effect to Condition RC36(d).

(c) RC35A At least 20 working days prior to the commencement of Construction Works, the Consent Holder shall submit a hard paper copy of the AMP to the Team Leader for certification that the AMP has been prepared in accordance with Condition RC35. If the Consent Holder has not received any response from the Team Leader (short of certification) within 20 working days of submitting the AMP, the Consent Holder will be deemed to have certification and can implement the AMP.

APPENDIX 6

HYDROLOGY/FLOODING NATURAL HAZARDS – JOHN MCARTHUR

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of notices of requirement by Waka Kotahi NZ Transport Agency to Kāpiti Coast District Council and Horowhenua District Council for designations to construct, operate, maintain and improve a new state highway and shared use path and associated infrastructure, between Taylors Road (to the north of Ōtaki) and State Highway 1 north of Levin

SECTION 198D REPORT OF JOHN McARTHUR – HYDROLOGY AND FLOODING

**KĀPITI COAST DISTRICT COUNCIL AND
HOROWHENUA DISTRICT COUNCIL**

28 April 2023

A. OUTLINE OF REPORT

- 1 This report, required by section 198D of the Resource Management Act 1991 (“**RMA**”), addresses the issues set out in section 171 of the RMA to the extent that they are relevant to the notices of requirement lodged with the Kāpiti Coast District Council (“**KCDC**”) and Horowhenua District Council (“**HDC**”) (together and separately as appropriate, the “**NoR**”).
- 2 The NoR given by Waka Kotahi NZ Transport Agency (“**Waka Kotahi**”) to HDC and KCDC are for a designation to construct, operate, maintain and improve a new state highway and shared use path and associated infrastructure, between Taylors Road (to the north of Ōtaki) and State Highway 1 north of Levin. The project is known as the Ōtaki to North of Levin Highway Project (the “**Ō2NL Project**” or “**Project**”).
- 3 In addition, Waka Kotahi has separately applied for resource consents (“**Applications**”) relating to the Ō2NL Project to Manawatū-Whanganui Regional Council (“**Horizons**”) and Greater Wellington Regional Council (“**GWRC**”), respectively.
- 4 This report addresses hydrology and flooding matters with regard to the NoRs lodged with KCDC and HDC. Matters relating to the Applications are outside the scope of this report and are being addressed by technical advisors for the Regional Councils. Peter Kinley is advising the Regional Council in relation to hydrology and flooding impacts. In preparing this report, I have discussed the technical reporting in relation to such impacts with Mr Kinley.
- 5 I have reviewed the hydrology and modelling undertaken to assess flooding effects associated with the Ō2NL Project. My report addresses the following:
 - (a) The completeness of information provided in the NoR, relevant to my area of expertise.
 - (b) Changes in velocity and flood hazard as a result of the Ō2NL Project.
 - (c) Changes in duration of flood inundation as a result of the Ō2NL Project.
 - (d) Thresholds applied to relevant flooding parameters.
 - (e) Design flood events modelled.

6 In preparing this report, I have reviewed the following documents lodged with the NoRs:

(a) Technical Assessment F: Hydrology and Flooding prepared on behalf of the Applicant, including Appendices F.1 and F.2, dated 14 October 2022.

(b) Letter response to request for additional information from Waka Kotahi to HDC and KCDC, dated 22 December 2022.

(c) Letter response to request for additional information from Waka Kotahi to GWRC and Horizons, dated 23 December 2022.

(d) Bridge Manual SP/M/022 Third Edition, Amendment 4 prepared by Waka Kotahi NZ Transport Agency (referred to in my report as “**the Bridge Manual**”).

7 While this report is prepared pursuant to section 198D of the Resource Management Act (“**RMA**”), I have (in accordance with section 42A(1A) and (1B) of the RMA) attempted to minimise the repetition of information included in the NoRs and where I have considered it appropriate, adopt that information.

B. QUALIFICATIONS / EXPERIENCE

8 My full name is John Michael McArthur. I am a senior surface water planning engineer at GHD. I have been in that position since 2015.

9 I hold a Bachelor of Engineering (Civil Engineering) from the University of Canterbury, New Zealand, 1977.

10 I have over 40 years consultancy experience in both New Zealand and Australia, primarily in the area of modelling and analysis of complex river/creek/floodplain systems, using model outcomes to assess flood risk and develop sustainable approaches to manage flooding issues.

11 I am familiar with the site and surrounding area. I visited the site along with other HDC and KCDC experts on the 24th April 2023.

C. CODE OF CONDUCT

12 I confirm that I have read and agree to comply with the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023. I confirm that I have stated the reasons for my opinions I express in this report, considered all the

material facts that I am aware of that might alter or detract from those opinions, and that the report and the issues I have addressed are within my area of expertise.

13 Statements expressed in this report are made within the scope of my expertise, except where I rely on the technical advice I have referred to in paragraph 5 of this report.

14 I consider that the documents lodged with the NoRs do not contain all of the information necessary to assess the matters listed in paragraph 5 of this report. This is discussed in further detail in paragraphs 27– 32 of my report.

15 In preparing this report I have, in part, relied on flood impact mapping extracted from a computer model (that model was used to produce the mapping shown in the Technical Assessment) . A computer model assessing flooding impacts inherently has some degree of computational inaccuracy.

D. EXECUTIVE SUMMARY

16 The key conclusions of my report are:

- i. The flood impact of the Ō2NL Project on existing 0.5% AEP design storm conditions needs to be considered, in order to address HDC District Plan requirements.
- ii. I consider that the less than minor effects proposed beyond the designation included in Table F.4 of the Technical Assessment are excessive. In line with the precautionary and risk based approach required by the KCDC District Plan, these should be reduced to $\leq 0.01\text{m}$ which reflects the computational accuracy expected in the type of model used for the Ō2NL Project.
- iii. There is insufficient information provided to support statements included in Technical Assessment F, particularly in relation to whether or not changes to flooding characteristics are less than minor. Mapping as detailed in paragraphs 36 and 37 of my report needs to be undertaken by Waka Kotahi. Provision of this additional information will also help provide certainty that the final Ō2NL Project design can achieve flood impact and hazard values that are less than minor.

E. SCOPE OF REPORT

17 My report focuses only on issues related to both KCDC and HDC natural hazard requirements associated with flooding. It covers the following topics:

- (a) District Plan Requirements.
- (b) Design Flood Events.
- (c) Flood Impact Thresholds.
- (d) Information Gaps.

18 In addition to the documents listed in paragraph 6 of my report, I have also reviewed the relevant policies relating to Natural Hazards and Flood Hazard in the respective HDC and KCDC District Plans.

F. BACKGROUND

19 Waka Kotahi has undertaken flood modelling of an indicative concept design for the Ō2NL Project, to assess flood impacts on the existing environment.

20 Key aspects considered in my review of the documentation describing and presenting results of this flood modelling are:

- (a) Whether or not the modelling undertaken is sufficient to address District Plan requirements.
- (b) Whether or not the information contained in the documentation provides sufficient certainty that conditions relating to flooding/flood hazard can be achieved.

21 The Bridge Manual states that bridges/major culverts are not to cause an unacceptable increase in flood risk outside of the designation area, with the definition of unacceptable flood risk being in accordance with regional council or territorial authority requirements.

22 Flood hazard policy NH-FLOOD-P12 included in the Natural Hazard section of the KCDC Operative District Plan requires no increase in flood flow or level and no reduction in storage capacity resulting from development in a river corridor, stream corridor or overflow path. This applies to a 1% AEP (1 in 100 year) design storm event.

23 Within the HDC District Plan Chapter 8 Objectives/Policies relating to Natural Hazards, there is a definition of the areas subject to significant risk from the effects of flooding, being land inundated in a 0.5% AEP (1 in 200 year) design storm event. Policy 8.1.4 requires that design in these areas avoid or mitigate adverse effects on people property and the environment. In addition, Policy 8.1.5 requires that in this event, flood hazard be mitigated and Policy 8.1.13 requires the effects of climate change be managed.

G. REVIEW OF TECHNICAL ASSESSMENT F AND RESPONSES TO REQUESTS FOR FURTHER INFORMATION

- 23 Following my review of Technical Assessment F, I consider that the hydrology and flood modelling described in the document demonstrates best practice. However, in some instances, further information is required to support statements made in the document and provide certainty that final design can meet District Council flood hazard requirements. Paragraphs 27 –32 of my report summarise the areas I consider require additional information. Further discussion is also provided in Section I of my report.
- 24 Modelling reported in Technical Assessment F has been undertaken for the 10% AEP (1 in 10 year), 1% AEP (1 in 100 year) and 0.067% AEP (1 in 1500 year) design storm events, with the latter two events incorporating an appropriate allowance for climate change. A 0.5% AEP (1 in 200 year) design storm event has not been modelled and therefore HDC flood hazard requirements relating to areas subject to significant risk from the effects of flooding cannot be addressed with any certainty.
- 25 Table F.4 in Technical Assessment F provides a summary of changes in flood level considered less than minor for various location scenarios. The values upstream and downstream of the designation do not meet the KCDC District Plan’s requirement of no increase in flood level.
- 26 Paragraph 122 of Technical Assessment F states that changes in velocity outside the proposed designation will be less than minor. However there is no velocity difference mapping of the modelled area outside the designation included in the document to support this.
- 27 The response to the Regional Councils section 92 Further Information request relating to velocity (Item 83) states that *‘Waka Kotahi considers that a change in velocity ≤ 0.5 m/s will have a less than minor effect relative to the existing environment’*. No information is provided to support this statement.
- 28 Paragraph 122 of Technical Assessment F also states that changes in hazard are less than minor. Despite a Regional Council request to provide an assessment of flood hazard as part of its section 92 Further Information request, this has not been provided by Waka Kotahi to date.

29 Further information is required to quantify the duration of flood inundation in the modelled area outside of the designations for both the 10% and 1% AEP events.

H. SUBMISSIONS

30 27 submissions on the proposal raise concerns regarding flooding / natural hazards. I make no specific comment on the submissions at this time, as there is insufficient information provided to support statements included in Technical Assessment F, particularly in relation to whether or not changes to flooding characteristics are less than minor, to consider matters raised in submissions.

I. DISCUSSION AND CONCLUSION

31 To address HDC's Natural Hazards Objectives/Policies in the District Plan, the 0.5% AEP design storm event needs to be included in the modelling to confirm whether or not adverse flooding effects will occur as a result of the Ō2NL Project.

32 The flood hazard policies in the Kāpiti Coast District Plan take a precautionary and risk based approach to hazard management and require that there be no increase in flood level in a 1% AEP design storm event with projected climate change. The HDC District Plan does not quantify what it considers to be an adverse flooding effect but if the same precautionary approach is taken, then any increase in flood level could be considered adverse. In reality, there will be some computational inaccuracy (model noise) in the 'baseline', 'Ō2NL Project concept design' and 'Ō2NL Project final design' flood models, meaning that a 'zero' increase/change in flooding characteristics is not achievable when comparing the existing and developed situations. The City of Gold Coast 'Flood model noise practice note'¹ suggests a modelled flood level impact of up to 10 mm can be considered to reflect no increase.

33 Water Surface Elevation Difference maps have been provided in Appendix B of Appendix F.2 of Technical Assessment F. To support statements that changes in velocity and flood hazard are less than minor and that a change in velocity of ≤ 0.5 m/s will have a less than minor effect, difference maps of both parameters should be provided covering the same extents as the Water Surface Elevation Difference maps.

34 To support paragraph 115 (c) of Technical Assessment F, mapping showing changes to the duration of flood inundation, covering the same extents as the Water Surface Elevation Difference maps, should also be provided. This would help identify whether

¹ City of Gold Coast – Flood model noise practice note (undated)

or not there are rural areas outside the designation where an increase in flood inundation has an adverse impact on pasture use.

35 In conclusion:

- (a) The flood impact of the Ō2NL Project on existing 0.5% AEP design storm conditions needs to be considered, in order to address HDC District Plan requirements.
- (b) I consider the less than minor effects proposed beyond the designation included in Table F.4 of Technical Assessment F to be excessive. In line with the KCDC District Plan's precautionary and risk based approach, these should be reduced to $\leq 0.01\text{m}$ which reflects the computational accuracy expected in the type of model used for the Ō2NL Project.
- (c) I consider that there is insufficient information provided to support statements included in Technical Assessment F, particularly in relation to whether or not changes to flooding characteristics are less than minor. Mapping as detailed in paragraphs 36 and 37 of my report should be undertaken by Waka Kotahi.
- (d) Provision of this additional information will also help provide certainty that the final Ō2NL Project design can achieve flood impact and hazard values that are less than minor.
- (e) I support conferencing with the relevant experts on these matters in due course. I note that it is too early to consider amendments that might be needed to the proposed conditions but am happy to contribute to discussions on those once the information discussed above has been provided and considered.

JOHN MCARTHUR

28 April 2023

J. REFERENCES

- 36 Bridge Manual SP/M/022 Third Edition, Amendment 4 Effective from May 2022 prepared by Waka Kotahi NZ Transport Agency
- 37 City of Gold Coast – Flood model noise practice note (undated)

APPENDIX 7

ECONOMIC – MIKE CULLEN

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of applications by Waka Kotahi NZ Transport Agency (Waka Kotahi) to Kāpiti Coast District Council and Horowhenua District Council for designations to enable the construction, operation and maintenance and improvement of new state highway, shared use path and associated infrastructure, between Taylors Road (to the north of Ōtaki) and State Highway 1 north of Levin.

SECTION 198D REPORT OF MICHAEL CULLEN – URBAN ECONOMICS

**KĀPITI COAST DISTRICT COUNCIL AND
HOROWHENUA DISTRICT COUNCIL**

27 April 2023

A. OUTLINE OF REPORT

- 1 This report, required by section 198D of the Resource Management Act 1991 (“**RMA**”), addresses the issues set out in section 171 of the RMA to the extent that they are relevant to the notices of requirement lodged with the Kāpiti Coast District Council (“**KCDC**”) and Horowhenua District Council (“**HDC**”).
- 2 The notices of requirement given by Waka Kotahi NZ Transport Agency (“**Waka Kotahi**”) to KCDC and HDC are for a designation to construct, operate, maintain and improve a new state highway and shared use path and associated infrastructure between Taylors Road (to the north of Ōtaki) and State Highway 1 north of Levin. The project is known as the Ōtaki to North of Levin Highway Project (the “**Ō2NL Project**” or “**the Project**”).
- 3 In addition, Waka Kotahi has separately applied for resource consents (“**Applications**”) relating to the Ō2NL Project to Manawatū-Whanganui Regional Council (“**Horizons**”) and Greater Wellington Regional Council (“**GWRC**”), respectively.
- 4 This report addresses Urban Economics concerning the notices of requirement lodged with KCDC and HDC following my review of the Technical Assessment O – Economics and Town Centre Impacts (prepared by Mr Douglas Fairgray) which was lodged with the notices of requirement. Matters relating to the applications for resource consents lodged with the regional councils are outside the scope of this report, and are addressed by technical advisors for those councils.
- 5 In preparing this report, I have relied on the expert advice from Mr Graeme McIndoe for the two District Councils in relation to Urban Design as contained in his report which I have been provided a copy of.
- 6 While this report is prepared pursuant to section 198D of the Resource Management Act (“**RMA**”), I have (in accordance with section 42A(1A) and (1B) of the RMA) attempted to minimise the repetition of information included in the notices of requirement and where I have considered it appropriate, adopt that information.

B. QUALIFICATIONS / EXPERIENCE

- 7 My name is Michael Cullen. I am the Principal of Urbacity, based in Sydney, New South Wales, Australia. I have held this role since 1998. Prior to this, I was Sydney

Manager for Thomas Consultants (market analysts based in Vancouver, Canada) and prior to that in the late 1980's – early 1990's was General Manager of a firm of economists and statisticians (Ibecon) for 7 years also based in Sydney.

- 8 I am an urban planner and urban economist with 35 years' experience.
- 9 My specialty is urban centre economics and urban and built-form design principles. These learned skills sit at the interface between urban design and urban economics. I have extensive experience in economic, social, and cultural analysis and the effects of different forms of centres on economic and social performance.
- 10 The projects that I have led both in Australia and New Zealand include developing and implementing the following:
 - (a) Activation strategy for Wynyard Quarter, Auckland;
 - (b) Destination and retail strategy for The Rocks, and conceptualising and developing The Rocks Markets, Sydney to remerchandise The Rocks back to locals and away from tourists;
 - (c) Numerous town centre strategies, including for Gungahlin (Canberra – I sat on the Gungahlin Development Authority Board for 7 years), Rouse Hill (Sydney), Craigieburn (Melbourne) and Margaret River (Western Australia), and Newmarket, Blenheim, Nelson, Hastings, Hutt City, Frankton and Massey North, in New Zealand;
 - (d) Growth strategy for Melbourne 2030;
 - (e) Growth Strategy for South West and North West Sydney (approximately 1 million people);
 - (f) Christchurch Urban Development Strategy (UDS – Plan Change 1);
 - (g) Revitalisation strategy for Port Adelaide;
 - (h) Revitalisation and redevelopment strategy for Playford Alive (Adelaide).
 - (i) Wesley Redevelopment Plan (for Kainga Ora);
 - (j) Tamaki Transformation Project;
 - (k) Hobsonville – centres locations, master planning, and Home Based Business location advice for Waitakere Council; and
 - (l) Supporting NPS UD submissions for Kainga Ora for all Councils in the Wellington Region.
- 11 I provided urban economic advice for HDC in relation to:
 - a. Levin Town Centre;

- b. Foxton Town Centre; and
- c. Growth and Centre Expansion Options at Waitārere Beach.

12 I am familiar with site and surrounding area. I visited the site numerous times along with HDC staff, McIndoe Urban principals during my work for HDC between 2017 and 2020. I also undertook a Centres Strategy for KCDC in 2020, evaluating a future path for all Kāpiti Centres.

C. CODE OF CONDUCT

13 I confirm that I have read and agree to comply with the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023. I confirm that I have stated the reasons for my opinions I express in this report, considered all the material facts that I am aware of that might alter or detract from those opinions, and that the report and the issues I have addressed are within my area of expertise.

14 I have addressed the following issues in this report:

- a. A short history of my involvement in advising the HDC on the preferred alignment of Ō2NL;
- b. The role, location and operational geography of the Tara-Ika centre and the reasons behind its location;
- c. The centre's influence over the Tara-Ika structure;
- d. The centre's role in improving the social and economic performance of Levin and East Levin particularly;
- e. Waka Kotahi's obligations concerning:
 - i. Its Integrated Planning Strategy;
 - ii. Its Environmental and Social Responsibility;
 - iii. Its Environmental Plan: "Improving Environmental Sustainability and Public Health in New Zealand".

15 Statements expressed in this report are made within the scope of my expertise, except where I rely on the technical advice I have referred to in paragraph 5 of this report.

16 I have all the information necessary to assess the application within the scope of my expertise and am not aware of any gaps in the information or my knowledge

D. EXECUTIVE SUMMARY

17 I have reviewed Mr Fairgray's report (Appendix O to the notices of requirement). With one exception, I am comfortable with the quantitative and qualitative analysis used by Mr Fairgray to assess the potential economic effects of the Project.

18 In particular, I agree that:

- a. *The Ō2NL Project will generate positive economic effects, especially through its long term stimulus to growth in Horowhenua District, as well as during the construction phase. Some adverse effects will arise during both the construction and implementation phases, however these adverse effects on the economy will be less than minor, and measures (signage and way finding to Levin) are proposed to mitigate against the adverse effects that cannot be avoided¹; and*
- b. *Overall, and in the medium to long term, the Ō2NL Project is expected to stimulate strong population and economic growth, and enhance performance of Levin town centre - the District's main commercial hub².*
- c. *Effects on other centres in Horowhenua District or Kāpiti Coast District are expected to be very small. Foxton to the north is on SH1, while Shannon is located on State Highway 57 ("SH57") and is 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 Levin, so there may be some positive economic effects for the centres in Ōtaki as a result of the Ō2NL Project³.*

19 I consider the assessment that has been undertaken by Mr Fairgray is appropriate for a project of this nature.

20 However, I consider that it has a large gap, being that it does not assess the economic impacts of the Project on the proposed Tara-Ika development.

21 The key conclusions of my report (and my concern in relation to the economic effects of the Project) include:

- a. That the proposed Tara-Ika structure plan and master plan relied on the East West Arterial ("**EWA**") connecting through from SH57 / Arapaepae Road, over

¹ Technical Assessment O: Economics and Town Centre Impacts (prepared by Douglas Fairgray), paragraph 27.

² Technical Assessment O: Economics and Town Centre Impacts (prepared by Douglas Fairgray), paragraph 28.

³ Technical Assessment O: Economics and Town Centre Impacts (prepared by Douglas Fairgray), paragraph 20.

O2NL and into the Tara-Ika centre, and the assistance of Waka Kotahi in remedying the divorce caused by Waka Kotahi's choice of O2NL alignment;

- b. That Waka Kotahi knew about the Tara-Ika plans and the importance of the EWA at the time of route designation and has been heavily involved since in the planning of Tara-Ika, including through participation in the Plan Change 4 proceedings. The EWA is not provided for in the plans or conditions that accompany the notice of requirement to the HDC;
- c. That my preference (and that of the Master Plan team) was for the N9 option. I recollect that this view was shared by other technical experts for HDC and was also shared with Waka Kotahi for the very reasons that HDC is now concerned about the implications of Waka Kotahi's apparent lack of assistance;
- d. Waka Kotahi's response in requiring HDC to resolve an issue that in my opinion was created by Waka Kotahi is contrary to many of Waka Kotahi's objectives as set out in Section K of my evidence.

22 I record here my understanding that Waka Kotahi and HDC are in dialogue regarding the EWA and other matters. I support the continuation of those discussions and would be available for expert caucusing, mediation and discussions on conditions when convenient to the parties.

E. SCOPE OF REPORT

23 My report focuses only on issues related to Urban Economics. It covers the following topics:

- a) Waka Kotahi's Choice of Ō2NL Alignment;
- b) Waka Kotahi's Economic Assessment, undertaken by Mr Fairgray;
- c) Urban Integration;
- d) Tara-Ika Centre and Structure; and
- e) The obligations of Waka Kotahi under its various urban commitments.

F. BACKGROUND

24 I was retained by HDC in 2018 to assist with the design and planning of Gladstone Green (now renamed Tara-Ika). My role was:

- a. To determine the requirements for a centre or centres;
- b. To locate the centre;
- c. To determine the centre's size and competitive relationship with Levin town centre;
- d. To determine the centre's relationship with the rest of Levin;
- e. To formulate (with the urban design team) the structure required to allow the centre to perform to its optimum level (within and outside of the site);
- f. To formulate an urban (street-focused) approach to centre design and justify this approach in economic and social terms;
- g. To describe the area of influence of the centre to facilitate a density response.

G. WAKA KOTAHI'S CHOICE OF O2NL ALIGNMENT

- 25 The current Waka Kotahi design for Ō2NL does not recognise the EWA (this is shown in bold on the Structure Plan accompanying Plan Change 4 and which is reproduced in other reports, including Mr McIndoe's). By implication, it does not appear to allow Waka Kotahi to remedy the negative effects caused by its choice of Ō2NL alignment.
- 26 I recall that Waka Kotahi chose this route in 2018 when I was involved in formulating the Tara-Ika Master Plan within the design team. At that time, the team evaluated the 3 alignment options by NZTA for Ō2NL. The team's preferred option was the eastern (N9) alignment, as it removed the need for costly but essential mid-block networks to cross O2NL to integrate with the existing urban areas of Levin.
- 27 I consider that the current design provided by Waka Kotahi capitalises on the "first in first served" principle and undermines urban, economic and social principles within its operating mandate.
- 28 In simple terms, Waka Kotahi has created the problem HDC are now left to try to solve. Waka Kotahi could have chosen one of the other options, but it chose the one that had the greatest detrimental effect on the potential to integrate Levin (particularly Levin East) with Tara-Ika. According to its plans, and what I understand to be a technical legal or planning view that Waka Kotahi has taken around what is within the existing environment (on which I profess no opinion or view), it considers that it has no obligation to mend or offset the adverse effects caused by its choice of alignment.

29 I consider that this approach contradicts some of its operating philosophies and principles. I shall describe these later.

H. WAKA KOTAHI ECONOMIC ASSESSMENT

30 As described in paragraph 33, of the economic assessment:

The purpose of the economic assessment was to understand the economic effects of the Ō2NL Project, both locally and regionally, with a particular focus on the implications for Horowhenua District. The economic assessment provides quantitative and qualitative evidence on the positive and negative effects that are expected to accrue to the economies and communities along and influenced by the Ō2NL Project corridor. The time frame adopted is the 30-year period 2021-2051, with economic effects expressed in present value (PV) terms.

31 The economic assessment undertaken by Mr Fairgray on behalf of Waka Kotahi is therefore largely confined to retail effects on the Levin Town Centre and broader (primarily positive) economic impacts within Horowhenua due to improved regional access to and from Levin. It does not address the location of Ō2NL and its effect on the substantial new community that Ō2NL divorces from Levin.

32 However, Mr Fairgray may not have considered the 2018 Isthmus report titled “*Implications of Route Options on Eastern Growth Area Levin*”, by Mr Gavin Lister. The report recognises HDC’s Horowhenua Growth Strategy 2040” (“**HGS**”) and options to expand Levin east across Arapaepae Road into the (now) Tara-Ika project land. The Isthmus report refers to Schedule 8 Structure Plan 13. That Plan is at Appendix A and shows a Liverpool Street connection to Gladstone Road (the EWA). I understand that Council based its EWA connection and overbridge on (at the time) proposed (NZTA) upgrades to DSH57.

33 In relation to the HGS the report states “Principles relevant to this report include providing interconnected street networks and addressing potential severance of main roads and highways.”

34 I am comfortable with the quantitative and qualitative analysis used by Mr Fairgray to assess the potential economic effects of the Project. That analysis supports Mr Fairgray’s summary rating of effects on pages 49 and 50 of his report.

35 I agree with Mr Fairgray’s recommended mitigation measures which he sets out on page 51 of his report and do not repeat those here.

36 I agree with Mr Fairgray’s identification and assessment of the relevant statutory considerations at pages 24 – 27 of his report and do not repeat those here.

37 In the economic assessment there is no mention of Tara-Ika or the effect of the barrier of the proposed state highway on Tara-Ika and its relationship with Levin.

I. URBAN INTEGRATION

38 I (and the Master Plan team) intended the Tara-Ika centre to be a unifying feature for Levin East and emerging Tara-Ika populations. Clearly its capacity to satisfy this objective lies in the connections between the two places.

39 Levin East is almost an isolated cul-de-sac with one minor connection east to SH57, one direct and one indirect connection west to Oxford Street and four north connections to Queen Street. There are no direct connections south from Levin East.

40 There are approximately 5,200 people in Levin East. Due to its incomplete structure, it is isolated from the movement economy and is not on the way to anywhere. This has implications for crime⁴, social capacity, economic potential and feelings of isolation and depression. The 5,200 people who live in Levin East are not exposed to the broader Levin population as those they see in this area are most likely to be people who live there and occasional visitors.

41 The design team identified improving the relative isolation of Levin East as an objective of the Master Plan. In addition, this population provided a catchment benefit for the Tara-Ika centre. Adding Levin East to the Tara-Ika centre’s catchment allowed the early development of the Tara-Ika centre as it provided the opportunity for a 2,000 square metre supermarket on day one of the development of Tara-Ika. We expected this supermarket to grow by around 50% as the Tara-Ika project matured.

42 This early start also enabled an early intensification opportunity in and around the centre and likely a faster Tara-Ika sections and dwellings take up.

⁴ Johnson BR, Pagano ME, Lee MT, Post SG. Alone on the Inside: The Impact of Social Isolation and Helping Others on AOD Use and Criminal Activity. *Youth Soc.* 2018;50(4):529-550. doi: 10.1177/0044118X15617400. Epub 2015 Dec 1. PMID: 29628533; PMCID: PMC5889144. Also; Johnson BR, Pagano ME, Lee MT, Post SG. Alone on the Inside: The Impact of Social Isolation and Helping Others on AOD Use and Criminal Activity. *Youth Soc.* 2018;50(4):529-550. doi: 10.1177/0044118X15617400. Epub 2015 Dec 1. PMID: 29628533; PMCID: PMC5889144.

- 43 This outcome and its major benefits only occur with the EWA across Ō2NL.
- 44 The EWA provides a secondary connection to Tararua Road and Queen Street for future Tara-Ika residents and begins to irrigate Levin East with movement, which, I believe, will reduce the isolation of Levin East.
- 45 Without Levin East, the centre loses its ability to be a motivator of residential sales and early to mid-term housing customers will be forced to travel some distance to the Levin town centre for everyday items.

J. TARA-IKA CENTRE AND STRUCTURE

- 46 There are a series of cascading and interdependent elements within any structure plan. HDC required the centre to be urban (street-based). Unlike shopping centres, with urban centres the influence of the movement network is critical to its success. The centre must be at the nexus of optimum movement within Tara-Ika and congested with multi-modal movement as this condition improves pedestrian amenity and safety.
- 47 Creating a congested environment with “friction” is a major feature of the Tara-Ika structure and the centre’s location. This “friction” depends heavily on balanced levels of “opposing” traffic, which is / was (in part) to be delivered by the EWA.
- 48 The primary determinant of the structure of Tara-Ika is the centre. I instructed the design team to maximise movement to and through the centre⁵. As stated, the centre and its location also relies heavily on a seamless connection to the Levin east community. My view was/is that ideally, Ō2NL should have two multi-modal street connections to Levin east, one at Liverpool Street and one at Meadowvale Drive (the Master Plan proposes and pedestrian and cycle link at this extension). However, the Liverpool Street link and EWA is by far the most important.

K. THE OBLIGATIONS OF WAKA KOTAHI UNDER ITS VARIOUS ACTS AND VOLUNTARY URBAN COMMITMENTS

- 49 I understand that Waka Kotahi operates under several instruments. The Land Transport Management Act 2003⁶ in relation to 96 Operating Principles (1) *“In meeting its objective and undertaking its functions, the Agency must—*

(a) exhibit a sense of social and environmental responsibility;”

⁵ Urban centres thrive on optimum levels of multi modal movement. As proven by Space Syntax (London) the success of urban centres across the world is because their location is at most accessible place to everywhere else (at multi-scale).

⁶ Land Transport Management Act 2003 96 Operating Principles (1) (a).

- 50 In removing the potential for around 5,200 Levin east residents to connect directly to the Tara-Ika centre, the social potential (and economic) of this centre as an alternate and directly accessible gathering place for Levin east residents is diminished.
- 51 In December 2022 Waka Kotahi adopted an **Environment and Social Responsibility Policy**. In this Policy, Waka Kotahi committed to:
- a. *Protecting and enhancing the cultural and built environment to support community and economic outcomes and connections, respect cultural and heritage values and improve public health and wellbeing; and*
 - b. *Seeking innovative solutions that maximise multiple outcomes and minimise trade-offs across environmental, economic, social and cultural dimensions.*
- 52 In relation to its principle of “**Care for people and public health**” it committed to:
- a. *Enhance and contribute to social, cultural, ecological and community cohesion through addressing severance and supporting connectivity and place-making*
 - b. *Integrate good urban design, planning and development into all of our activities to improve environmental, social, economic and public health outcomes.*
- 53 There are other commitments. The first two paragraphs in Waka Katohi’s online reference to its “Integrated Planning Strategy”⁷ states “*Decisions about transport systems, the form of urban development and how land is used, all impact each other. Integrated planning is a planning approach that seeks to pull together all the contributing elements to increase the effectiveness of delivered solutions. It ensures the most efficient use of public funds and avoids creating unintended impacts.*
- Integration allows individual activities to be coordinated to achieve the best solutions to meet the ongoing needs of people and communities, and to achieve value for money. Without integration, individual activities may have unintended impacts on other activities and this can produce less than best results.”*
- 54 Further, the online statement refers to the Government Policy Statement on Land Transport⁸, as follows: “*The GPS identifies integrated planning as a key factor in*

⁷ <https://nzta.govt.nz/planning-and-investment/planning/transport-planning/planning-process/our-integrated-planning-strategy/>

⁸ IBID

ensuring New Zealand develops a land transport system that achieves its short- to medium-term objectives. The benefits of an integrated approach to planning are that:

- decisions relating to land use, transport and urban design collectively contribute to the efficient use of public funds*
- transport strategies and packages of activities are developed alongside land-use strategies and implementation plans.*

Integrated land use, transport planning and urban design actively contribute to national economic growth and productivity, and create opportunities for better integration within and between transport modes.”

- 55 In the severance of Tara-Ika from the Levin east community, Waka Kotahi is in my opinion likely transferring costs (public funds) to the national health system⁹.
- 56 The Tara-Ika Master Plan is certainly a “best results” solution for Horowhenua’s major town, Levin. The growth proposition behind it recognizes that the former incremental growth pattern at the edges of settlements came without key resources and was increasingly isolating in its implementation. HDC made a clear commitment to sustainable growth and sustainable transport and paralleled community facilities and resources into a combined settlement that integrated with the existing Levin east community. I am unaware of whether this decision to consolidate growth with these benefits was made before or after NZTA (as it then was) published the O2NL options, but it shouldn’t matter.
- 57 I consider that the direct connections to the east Levin community and the social and economic benefits thereof should fall under Waka Kotahi’s various statutory and voluntary obligations, as outlined above. Waka Kotahi is also a signatory to the New Zealand Urban Design Protocol, the obligations of which I understand will be covered by Mr McIndoe in his report.

⁹ Mindell JS, Karlsen S. *Community severance and health: what do we actually know?* J Urban Health. 2012 Apr;89(2):232-46. doi: 10.1007/s11524-011-9637-7. PMID: 22228072; PMCID: PMC3324603. Also Melissa Higgsmith, Jemima Stockton , Paulo Ancaes, Shaun Scholes, Jennifer S. Mindell; *Community severance and health – A novel approach to measuring community severance and examining its impact on the health of adults in Great Britain*, Journal of Transport and Health 25 (2022)

L. SUBMISSIONS

58 I have reviewed all of the submissions that appear to reference economic issues. There are a number of submissions in relation to economic issues and severance that I discuss below.

59 James McDonnell Limited has land holdings within Tara-Ika and has expressed concerns over the disconnect between the Tara-Ika Structure Plan via Plan Change 4 and its “primary feature” which crosses Ō2NL (EWA) and two “cycleways as secondary features.” The submission also recognises that the Plan Change is subject to three appeals, none opposing any of the Structure Plan’s EWA or primary cycle routes.

60 Horizons Regional Council make similar but less direct references to local road connections across O2NL (Point 14 d) particularly.

M. CONCLUSION

61 The economic assessments and section 92 responses do not address the severance issues I have discussed above.

62 There are a range of Waka Kotahi studies on the effects of severance. Most of these studies focus on social impacts. Social impacts have economic consequences reflected often in health performance. Economic assessments in governments in my experience tend to take a “total costs and benefits to communities as a whole” approach.

63 Waka Kotahi¹⁰ in relation to “Impact on system vulnerabilities and redundancies” make the following statement:

Severance is a key concept in this benefit. Severance may be caused by the separation of people from the facilities, services and social networks they wish to use within their community because of changes in comfort and attractiveness of areas; and/or people changing travel patterns due to the physical, traffic flow and/or psychological barriers created by transport projects.

¹⁰ <https://nzta.govt.nz/planning-and-investment/learning-and-resources/benefits-management-guidance/the-land-transport-benefits-framework/inclusive-access/10-changes-in-access-to-social-and-economic-opportunities/10-4-impact-on-community-cohesion/>

Severance is often a disadvantage and is disproportionately experienced by some groups, such as children, older people, people with disabilities, people without easy access to a car, and people on low incomes. It may negatively affect access by walking and cycling, as those modes are the most sensitive to increased trip distances.

Isolation is another component of this benefit. In a transport sense, isolation occurs when people are unable to access normal community facilities or where there are long distances to travel to those facilities. Isolation may arise because roads are unreliable or people live in remote areas, creating some spatial and/or digital disadvantage.

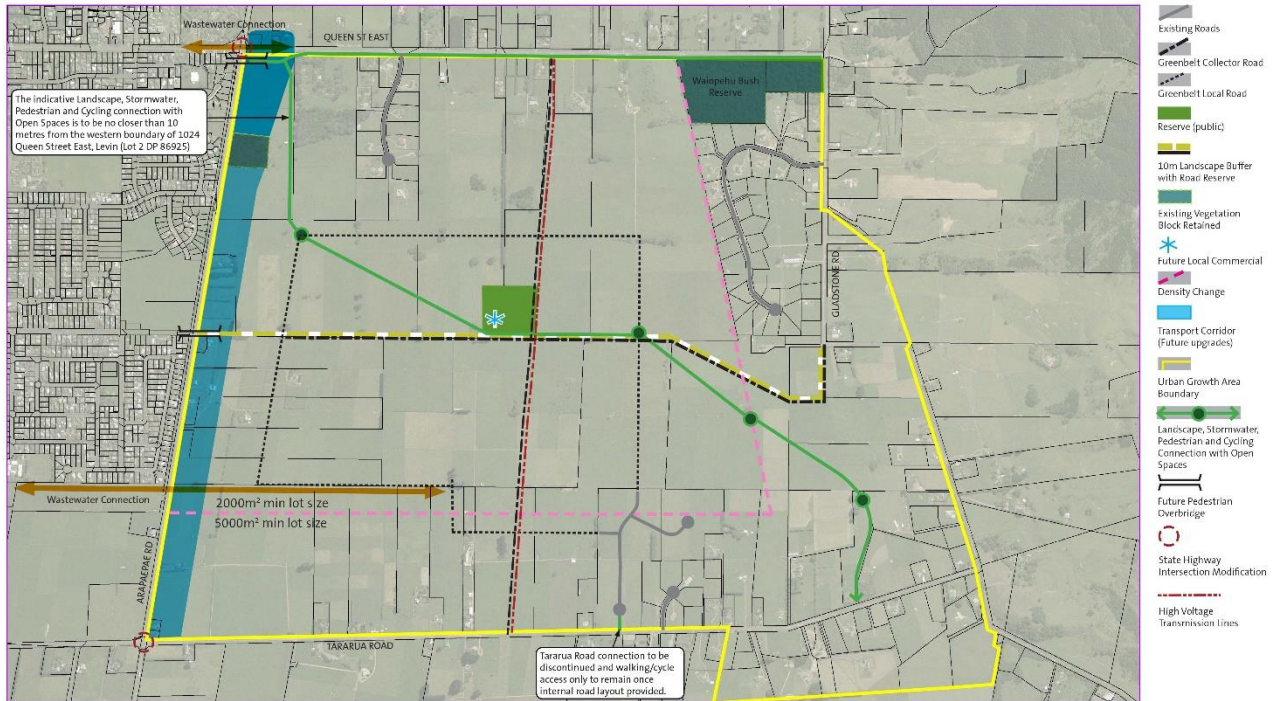
- 64 In the case of east Levin, a direct consequence is a change in accessibility to the Tara-Ika centre, compared with the Structure Plan. This delivers a direct economic cost to the centre, Levin east and Tara-Ika residents.
- 65 Finally, Waka Kotahi's approach to Tara-Ika appears to me to be different from all other severances because, despite their intimate knowledge of the EWA, it has not been built. This does not change the fact that Waka Kotahi know about the severance that will result and that could be dealt with in the design of Ō2NL.

Mike Cullen

25 April 2023

Appendix

Schedule 8 Structure Plan 13 (Horowhenua District Plan 2015)



Horowhenua District Plan

Structure Plan 13

Gladstone Greenbelt Levin - Queen Street / Tararua Road

Scale: 1:10,000 @ A3

The location of future roads and the pedestrian accessway/cycleway/stormwater path through the Gladstone Greenbelt Zone is indicative only, and the final alignment and the properties affected will be determined as part of the subdivision consent process. It is anticipated that the pedestrian access-way/cycleway/stormwater path will follow a combination of roads, reserves, or corridors vested in the Council upon subdivision

APPENDIX 8

TRANSPORT (HDC) – DAVID DUNLOP

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of notices of requirement by Waka Kotahi NZ Transport Agency to Kāpiti Coast District Council and Horowhenua District Council for designations to enable the construction, operation, maintenance and improvement of new state highway, shared use path and associated infrastructure, between Taylors Road (to the north of Ōtaki) and State Highway 1 north of Levin

SECTION 198D REPORT OF David James Dunlop – Transportation

KĀPITI COAST DISTRICT COUNCIL

28 April 2023

A. OUTLINE OF REPORT

- 1 This report, required by section 198D of the Resource Management Act 1991 (“**RMA**”), addresses the issues set out in section 191 of the RMA to the extent that they are relevant to the notice of requirement (NoR) lodged with the Kāpiti Coast District Council (“**KCDC**”). An NoR has also been lodged with Horowhenua District Council (“**HDC**”) but my report is limited to the NoR lodged with KCDC only.
- 2 The NoR given by Waka Kotahi NZ Transport Agency (“**Waka Kotahi**”) is for a designation to construct, operate, maintain and improve a new state highway and shared use path and associated infrastructure, between Taylors Road (to the north of Ōtaki) and State Highway 1 north of Levin. The project is known as the Ōtaki to North of Levin Highway Project (the “**Ō2NL Project**” or “**the Project**”).
- 3 In addition, Waka Kotahi has separately applied for resource consents (“**Applications**”) for the Ō2NL Project to Manawatū-Whanganui Regional Council (“**Horizons**”) and Greater Wellington Regional Council (“**GWRC**”) respectively.
- 4 This report addresses Transportation effects with regard to the NoR lodged with KCDC following my review of Technical Assessment A: Transport (“Transport Assessment”) which was prepared by Mr Phil Peet. The Transportation effects of the NoR lodged with HDC are the subject of a separate report for HDC by Mr Tim Kelly. Matters relating to the Applications are outside the scope of this report, and are being addressed by technical advisors for the Regional Councils.
- 5 While this report is prepared pursuant to section 198D of the Resource Management Act (“**RMA**”), I have (in accordance with section 42A(1A) and (1B) of the RMA) attempted to minimise the repetition of information included in the NoR and where I have considered it appropriate, adopt that information.

B. QUALIFICATIONS AND EXPERIENCE

- 6 My name is David James Dunlop. I am Major Projects Director at WSP NZ Ltd. I have been in that position since 2021 and worked as a Principal Transport Planner since 2014 for WSP (formerly Opus International).
- 7 My role involves leading major transportation projects and providing strategic transportation advice to clients.

- 8 I hold an MSc in Planning Studies (focusing on Transportation) from Oxford Brookes University in the United Kingdom (1996/97) and a Bachelor of Resource & Environmental Planning from Massey University in New Zealand (1992/95). I am a Chartered Member of The Chartered Institute of Logistics and Transport in New Zealand and an Affiliate Member of the IPENZ Transportation Group.
- 9 I have over 20 years of experience in the planning, assessment and design of transportation projects in New Zealand and the United Kingdom, working for a wide range of central government organisations, local and regional authorities, and private developers, both as an employee and a consultant.
- 10 I have previously provided advice on transportation matters to Waka Kotahi, a number of local authorities and private developers in respect of various proposed developments and plan change applications. I have provided expert transportation evidence on behalf of Waka Kotahi on a number of major projects, most recently the Te Ahu a Turanga, Manawatū Gorge Replacement Project, and other projects of direct relevance to this Project (including before the Board of Inquiry for the Peka to Ōtaki (PP2O) Project). I also have given evidence on behalf of KCDC before the Environment Court in relation to the Paraparaumu Airport Plan Change 73.
- 11 I am familiar with site and surrounding area. I have visited the area (along with other HDC, KCDC, Horizons and GWRC experts) on a number of occasions. Having worked as Contract Manager and Board Member for the Wellington State Highway Network between 2014 and 2022, I have a strong understanding of transportation planning, operation and maintenance of the network in this area.

C. CODE OF CONDUCT

- 12 I confirm that I have read and agree to comply with the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023. I confirm that I have stated the reasons for my opinions I express in this report, considered all the material facts that I am aware of that might alter or detract from those opinions, and that the report and the issues I have addressed are within my area of expertise.
- 13 I have all the information necessary to assess the application within the scope of my expertise and am not aware of any gaps in the information or my knowledge.

D. EXECUTIVE SUMMARY

- 14 I have reviewed Mr Peet's report (Technical Assessment A: Transport ("Transport Assessment")), which was lodged with the NoR, in relation to the section of the new road located with Kāpiti Coast District. I consider that the assessment which Mr Peet has undertaken (including the methodology used) is appropriate for a project of this nature and is generally robust. Any gaps in information which I consider existed in the NoR as lodged have been addressed through the S92 request and Waka Kotahi's S92 response, except in relation to the design of the Taylors Road interchange.
- 15 I am comfortable that the analysis undertaken by Mr Peet supports his conclusions in relation to the potential transport effects of the Project, and the conclusions reached in his report. I agree that the Project will have significant positive effects in terms of safety and efficiency. I agree that adverse effects will be minor and are limited to some property owners having travel routes/times altered, induced traffic effects and disruption due to construction.
- 16 I do not have any safety concerns in relation to the design of that part of the highway located within the Kāpiti Coast District.
- 17 The key conclusions of my report include:
- a. The Project will result in a gap around Taylors Road in an otherwise continuous local arterial (of suitable standard) between Raumati and north of Levin. The local arterial provides a key alternative for local trips to the new highway/existing expressways.
 - b. The Taylors Road interchange will mean that there will be three half diamond interchanges within approximately 3.5km of Ōtaki with no further interchange for approximately 16km (Tararua Road - Taraika). This will mean potentially more people using the old highway for longer distances compared to a scenario where the interchanges were more evenly spaced (such as if an interchange located at Manakau instead of at Taylors Road).
 - c. The proposed spacing of these interchanges does not comply with best practice and will result in poor legibility. While this may not be unsafe, from a transport planning and future network operation perspective, interchanges should be spaced to maximise benefits and opportunities (now and in the future).

- d. Waka Kotahi state that the interchange will remove approximately 1,000 vehicles per day from passing through Ōtaki. However it has not provided a robust scenario to confirm this number.
- e. I consider that an alternative layout for the Taylors Road interchange (which delivers better outcomes) is possible and should be enabled through the proposed conditions.

E. SCOPE OF REPORT

- 18 My report sets out my findings following review of the Transportation Assessment as it relates to the Kāpiti District. My only concern in that regard is related to the form and function of the proposed Taylors Road interchange.
- 19 In preparing my report, I have reviewed and relied on the following information included with the NoR:
 - a. Volume 1: Consideration of Alternatives Multi Criteria Analysis Summary Report (Detailed Business Case Phase) ("**DBC MCA**");
 - b. Technical Assessment A: Transport ("**Transport Assessment**");
 - c. Section 92 ("**S92**");
 - d. Section 92 Response ("**S92 Response**"); and
 - e. Volume III: Drawings and Plans.

F. BACKGROUND

- 20 The Ō2NL Project involves the construction, operation, use, maintenance, and improvement of approximately 24km of new four-lane state highway between Taylors Road (to the north of Ōtaki) and SH1 and SH57 north of Levin, along with a dedicated north to south Shared User Path ("SUP"). A four-kilometre length of the proposed new highway is located within Kāpiti District, and my report only relates to that part of the highway.
- 21 I was engaged by KCDC in July 2021 to provide Transportation Advice in relation to the Detailed Business Case phase of the Project, which focused on transport planning, traffic engineering and general transportation services within the Kāpiti section of the Project, including the proposed Taylors Road access and interchange.

- 22 I was involved in review of the modelling approach, as noted in paragraph 40 of Mr Peet's Transportation Assessment.
- 23 Currently, there is no direct connection between Taylors Road and SH1. Taylors Road is connected to the old SH1 via an underpass under the Peka to Ōtaki expressway as part of the Waitohu Stream bridge. The alignment of the road connecting Taylors Road and the old SH1 is of a form suitable for a local access connection and includes four small radius 90 degree (or more) turns.
- 24 As currently designed, the proposed Taylors Road interchange is a half interchange with south facing ramps near Taylors Road and the new Peka to Ōtaki expressway. Its function is to provide access from the current SH1 for traffic heading south from Manakau or heading north from Wellington, as well as providing an alternate access to Ōtaki. The proposed location of the interchange is shown on Figure A.12 of Mr Peet's report (page 57).
- 25 A connection is proposed between the current SH1 north of the interchange and Taylors Road. This connection will provide improved access to the north (via the current state highway) for Taylors Road properties. It will also provide two options for users of the current SH1 (north of the interchange) to access Ōtaki; either via the new highway/Peka to Ōtaki expressway or via the local road access that connects Taylors Road with what will become the old highway. The first option requires those users to access the new highway/Peka to Ōtaki expressway for a very short length, and the second option is not suitable for a local arterial function of linking the current SH1 with the old SH1 (to and from Ōtaki).
- 26 The proposed Taylors Road interchange will mean that there will be three interchanges in close proximity of Ōtaki with no further interchange for approximately 16km (Tararua Road - Taraika).
- 27 In addition, there will not be a continuous local arterial (of a suitable standard) in parallel to the new highway/Peka to Ōtaki expressway through this area. There is a continuous local arterial (of a suitable standard) in parallel to both the Peka to Ōtaki expressway and the MacKays to Peka expressways from Raumati to north of Ōtaki. With the Project, there will be a continuous local arterial (of a suitable standard) in parallel with the new highway from north of Taylors Road to north of Levin. There will be a gap in this local arterial route between north of Ōtaki and north of Taylors Road.

- 28 In my opinion, the Wellington Northern Corridor (previously RoNS) projects have suffered from a lack of Network Planning and Land Use Integration. There was never an agreed spatial plan and to my knowledge, the full business case has not been updated since 2013. The proposed outcome as described above is evidence of this lack of network planning, in my opinion.
- 29 Linked to the point above, I consider the southern end of Ō2NL Project will have poor legibility given that with the Ō2NL Project, there will be three half diamond interchanges proposed within approximately 3.5km of Ōtaki. This may not be unsafe, however from a transport planning and future network operation perspective, interchanges should be spaced to maximise benefits and opportunities (now and in the future).
- 30 Discussions between Waka Kotahi and KCDC during the DBC phase of the Project outlined Council's concerns relating to the Taylors Road interchange and sought to retain flexibility in the designation and design for a two-way arterial connection under the new State Highway and interchange solutions at Taylors Road. The proposed designation extent and Project design would mean that it is possible to provide a two-way arterial connection under the new State Highway (refer Appendix A2 to this report) or an interchange solution at Taylors Road (as currently proposed). However the proposed designation extent would make it very difficult, if not impossible to provide **both** a two-way arterial connection under the new State Highway **and** an interchange solution at Taylors Road. Appendix A1 to this report shows a potential option to provide this outcome which extends beyond the proposed designation.

G. REVIEW OF TECHNICAL ASSESSMENT A (TRANSPORTATION)

- 31 In this section of my report, I set out my general comments on Mr Peet's report. As noted above, only a short length of the proposed new highway is located within Kāpiti District, and my report only relates to that part of the highway. The key features of the new highway are described in paragraph 213 of Mr Peet's report. Of those, only the Taylors Road interchange is located within the Kāpiti District. The large majority of the road is located within Horowhenua District, which is addressed separately by Mr Kelly.
- 32 I agree with Mr Peet's description of the current transport network and its problems. The safety issues with the current network are accurately described in Mr Peet's report and as he notes, in addition to the safety issues with the existing State highway

network, it also lacks resilience to natural hazards, weather and traffic events. SH1 is at high risk of closure from earthquakes and flooding. This is particularly problematic for both local and inter-regional travellers because SH1 is the only direct route between Manakau and Ohau (and therefore points further south or north).

- 33 I am comfortable with the modelling relied on, and the analysis undertaken, by Mr Peet to assess the actual and potential transportation effects of the Project, in which he compares the effects of the current network, a “do minimum” scenario and a “with Project scenarios”. That analysis supports Mr Peet’s conclusions in relation to the benefits of the Project (as summarised in paragraphs 18 – 27 of his report), and also his conclusions in relation to the minor adverse effects of the Project (as summarised in paragraphs 28 – 32 of his report) which include effects during construction. I agree with Mr Peet’s overall summary rating of effects in paragraph 301 of his report. However I believe there is an opportunity to provide a better outcome if a different layout is provided at Taylors Road, as shown in Appendix A1 to this report.
- 34 I agree with the sections of Mr Peet’s report which address Statutory Considerations, including National Standards, Regional and District Plans, and Other Relevant Policies (paragraphs 97 – 105 of his report).
- 35 I agree with Mr Peet that construction traffic effects can be appropriately managed through a Construction Traffic Management Plan, which Mr Peet describes in paragraphs 296 – 300 of his report. Such plans are standard for projects and works of this type.
- 36 In the following section of my report, I discuss the following matters in relation to the form and function of the proposed Taylors Road interchange:
- a. The current design of the proposed Taylors Road interchange;
 - b. Waka Kotahi’s assessment of options at Taylors Road;
 - c. Resilience of the transport system in the event of an incident that closes the new highway;
 - d. Best-practice guidelines around interchange spacings and legibility for the road user;
 - e. Function of the Ōtaki township;

- f. Traffic demands; and
- g. Justification for decision making.

Taylor's Road Design

- 37 The proposed layout of the interchange at Taylor's Road is described in paragraphs 24 - 25 above.
- 38 Waka Kotahi has indicated that there is a potential for the design to be amended during the next phase of design (detailed design) to provide a two-way local arterial connection under the new highway adjacent to Taylor's Road. As noted above, I believe the current layout and extent of the designation restricts the ability to provide a continuous local arterial route between Raumati and north of Levin. I would like to see a more definitive commitment to ensure this important connection can be provided during detailed design.

Taylor's Road Options

- 39 The 2020 assessment (DBC MCA) did not consider options but identified and assessed a no connection Local Road option (a two-way arterial connection parallel to the proposed new highway with no connection to the new highway) at Taylor's Road¹.
- 40 An additional Multi Criteria Analysis (MCA) was then undertaken in 2021 which considered two options at Taylor's Road:
- a. Option 1 – Local Road (no connection); and
 - b. Option 2 – Taylor's Road half interchange.
- 41 Option 1 scored better than Option 2 with the following differentiators between the options:
- a. Option 2 had marginally improved resilience due to the additional connection to the existing SH1;
 - b. Option 1 had moderately improved landscape/visual effects;

¹ Table 25, DBC MCA

- c. Option 1 had significantly improved noise/vibration effects;
 - d. Option 1 had marginally improved alignment with the Kāpiti Coast District Council development criteria.
- 42 Option 1 was identified as the preferred option in the 2020 Assessment (DBC MCA), but both options were recommended by the Project Team to be advanced to the Detailed Business Case (DBC).
- 43 The two options were investigated further with a number of considerations identified. Ultimately Option 2 was preferred by Waka Kotahi for the following key reasons:
- a. Option 2 maintains existing (post Peka Peka to Ōtaki expressway) traffic conditions through Ōtaki and provides more direct access to SH1 for residents of Manukau and Ohau.
 - b. Option 2 was also preferred from a resilience perspective as it reduced the spacing between interchanges compared with Option 1. Notably:

“Option 1 would result in a large distance between interchanges from south of Ōtaki to Tararua Road. If there was to be an incident on the highway within this 20km length then all vehicles would need to use the old highway for the entire distance, including through Ōtaki. Option 2 reduces this distance to 16km, and importantly removes the need to detour through Ōtaki.”²

Resilience of the Transport System

- 44 Option 2 reduces the detour distance compared to Option 1 in the event that an incident closed the new State Highway between the Tararua Road interchange and the Taylors Road interchange.
- 45 With Option 2, in the event of an incident closing the State Highway between the Taylors Road interchange and the north Ōtaki interchange (approximately 0.6km distance between ramps³), SH1 traffic would be required to use the local access link between Taylors Road and Old SH1. The local access link has geometric deficiencies which may create safety and efficiency issues if larger vehicles are required to use this route as a bypass. This link is also subject to flooding and is designed to act as a flow path for the Waitohu Stream.

² Section 10.4 DBC MCA

³ Page 52 of the S92 Response (Appendix 3)

46 Under Option 1, the local road connection connecting Old SH1 has significantly better geometric alignment (compared with Option 2) but would require diverted traffic to pass through the Ōtaki retail precinct.

Best practice guidelines – Interchange Spacing and Legibility

47 As noted earlier and set out below, in my opinion, the current arrangement of interchanges proposed as a result of the Ō2NL Project is not a good transport planning outcome and is not particularly legible for the public. Even if an interchange is not currently justified at Manakau, it makes much more sense and could have been considered further.

48 The S92 Response notes that “*The close proximity of the on and off ramps could lead to weaving issues, however this has been discussed with technical experts from Waka Kotahi and was judged to be acceptable given the capacity of the new highway and merge / diverge volumes*”.

49 Austroads Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings (2017) identifies:

a. “*In rural areas the minimum desirable spacing of interchanges is 5 to 8 km, depending on the configuration of the roads being intersected by the freeway/motorway*”.

b. “*The minimum spacing between successive urban motorway interchanges is (Austroads Guide to Road Design Part 4C): 2 km for four-lane motorways (two lanes in each direction)*”.

50 The proposed spacing of less than 2km does not comply with best practice.

51 The Traffic Control Devices Manual Part 10 (“**TCD Part 10**”) is the manual which provides the standards for signage and marking of Motorways and Expressways. Section 3 of TCD Part 10 notes that “*Normally two advance exit signs are provided for each exit. These are located at 2 kilometres and 1 kilometre in advance of the exit nose. [...] The desirable minimum advance exit sign locations in urban areas are 1 kilometre and 500 metres*”.

52 It is noted that the new highway is not described by Waka Kotahi as an expressway. However for the section of the new highway within the Kāpiti District, the new highway has the same form and function as an expressway.

53 The 0.6km distance between the ramps of the proposed Taylors Road and North Ōtaki interchanges will be insufficient distance to sign the exits in accordance with even the desirable minimum best practice . This could create legibility issues for those users only using the new highway/Peka Peka to Ōtaki expressway for that short section. Paragraph 59 below suggests that a reasonable proportion of the users of the Taylors Road interchange would only be using the new highway/Peka Peka to Ōtaki expressway for that short section.

Function of Ōtaki township

54 The traffic modelling provided by Waka Kotahi⁴ shows that of the 24,800 vehicles per day north of the Ōtaki township, slightly more than half (12,300 – 13,400 vehicles per day) will bypass the area using the Peka Peka to Ōtaki expressway. The other 11,400-12-500 vehicles per day are expected to be travelling to or through Ōtaki and surrounds.

55 This shows the important function that Ōtaki has as an urban centre for the area to the north of the township. The proposed interchange has limited impact on the amount of traffic passing through Ōtaki as set out below.

Traffic Demands

56 Waka Kotahi state that the interchange will remove approximately 1,000 vehicles per day from passing through Ōtaki⁵. However, it has not provided a robust scenario to confirm this number. The traffic modelling scenarios include both Options 1 and 2, with an 80km/h average travel speed on Old SH1 for Option 1, and a 70km/h average travel speed for Option 2. Waka Kotahi conclude that the 70km/h scenario would be more representative of the proposed revocation programme⁶. The traffic demands for Option 1 with the more representative speed scenario have not been provided and therefore I consider that the estimate of 1,000 vehicles per day is not based on a robust modelling scenario.

57 The change in demand on Old SH1 north of the Taylors Road interchange for Option 2 between the speed scenarios is a reduction of 4,300 vehicles. It is not unreasonable, given the additional travel distance, that Option 1 (with a similar speed

⁴ Figure 4 and Figure 5 of Appendix 3 to the S92 Response

⁵ Page 5 of Appendix 3 to the S92 Response

⁶ Page 5 of Appendix 3 to the S92 Response

scenario as for Option 2) would result in fewer than 1,000 additional vehicles passing through the Ōtaki township.

58 The traffic modelling also indicates that the demand for use of the Taylors Road interchange is relatively low, at 2,300 vehicles per day.

59 It is not possible to ascertain the demands (without interrogation of the traffic model) but it seems likely that a reasonable number of the users of the proposed Taylors Road interchange will only be using the new highway/Peka Peka to Ōtaki expressway for 0.6km (to connect to or from Ōtaki).

60 While the number of users using the new highway/Peka Peka to Ōtaki expressway for 0.6km are low, having users use the new highway for such a short length is not well aligned with the function of an Expressway which is “A road ***mainly for through traffic***, usually dual carriageway, with full or partial control of access. Intersections are generally grade separated.”⁷ [Emphasis added].

Justification for decision making

61 As noted above in paragraph 43, the decision by Waka Kotahi to proceed with Option 2 was based on two key reasons⁸:

a. *“It would remove through traffic from the Ōtaki township and would allow more direct access to the highway from Manakau and Ohau”.*

b. *It was “preferable from a resilience perspective”.*

62 Paragraphs 56 - 59 above identify that the justification for the first reason may not be as strong as previously thought (it is unclear what traffic modelling was available to inform the decision making at the time Option 2 was chosen to be progressed).

63 Paragraphs 44 - 46 above also identify that Option 2 has potential safety and efficiency issues in the event that the new highway is closed between the Taylors Road and North Ōtaki interchanges.

64 For the reasons stated above, I consider that flexibility should be provided through the NoR process to allow for Option 1 to be considered further. I do not believe that the

⁷<https://www.nzta.govt.nz/resources/traffic-control-devices-manual/definitions/#:~:text=Expressway,See%20also%20motorway.>

⁸ DBC MCA (Page 137)

conditions proposed as part of the NoR will sufficiently enable Option 1 (or 2) to be considered further.

65 I note from the DBC MCA that Option 1 was estimated to cost more than Option 2 due to the need for a longer structure under the new highway⁹. I consider that a more perpendicular crossing of the new highway could be made compared to that considered during the MCA. This would result in a lower design speed, which would not be inconsistent with the operating speed approaching an urban area like Ōtaki. Safe system compliant roundabouts could be used either side of the new highway to connect the Old SH1 alignment with local access roads either side of the expressway as well as deal with ~90 degree bends in the alignment of Old SH1. A high-level sketch showing a potential layout for this is shown in Appendix A1 to this report. This sketch has not considered changes to the alignment of the new highway to minimise potential impacts

66 Variations on the sketch provided in Appendix A1 to this report could also include removal of one or both ramps. Appendix A2 to this report below shows a potential layout with no interchange and lower operating speeds to reduce additional costs.

H. PROPOSED CONDITIONS

67 I have reviewed the proposed transport-related conditions prepared by Waka Kotahi and I am generally comfortable with the conditions with the exception as noted below.

68 I believe that the conditions should provide flexibility to allow for Option 1 or 2 at Taylors Road to be considered further.

I. SUBMISSIONS

69 None of the submissions lodged specifically reference transportation effects in the Kāpiti Coast District section of the NoR. Therefore, there are no issues have been raised through submissions that I need to comment on relevant to my area of expertise.

⁹ DBC MCA (Page 137)

J. CONCLUSION

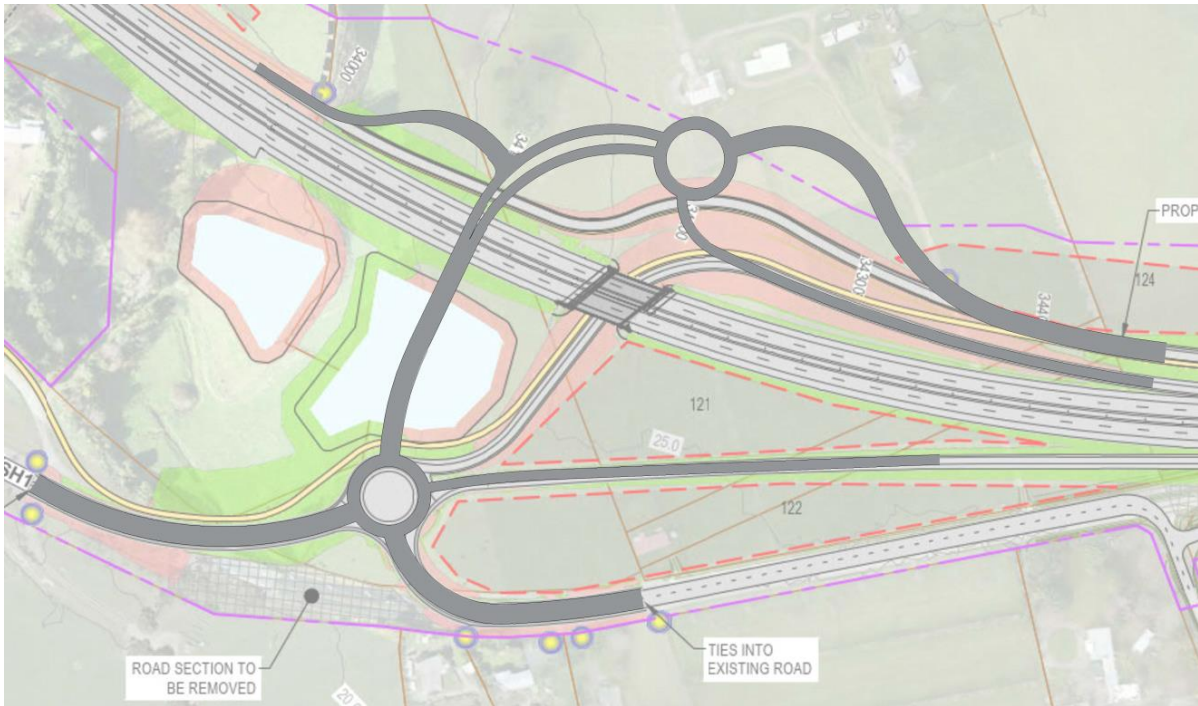
- 70 I agree with the analysis undertaken by Mr Peet to assess the actual and potential transportation effects of the Project. However I believe there is an opportunity to provide a better outcome if a different layout is provided at Taylors Road.
- 71 As currently proposed, the Project will result in a gap around Taylors Road in an otherwise continuous local arterial (of suitable standard) between Raumati and north of Levin. The local arterial provides a key alternative for local trips to the new highway/existing expressways.
- 72 The proposed Taylors Road interchange will mean that there will be three interchanges in close proximity of Ōtaki with no further interchange for approximately 16km (Tararua Road - Taraika). The proposed spacing does not comply with best practice and will result in poor legibility.
- 73 Waka Kotahi state that the interchange will remove approximately 1,000 vehicles per day from passing through Ōtaki. However, it has not provided a robust scenario to confirm this number.
- 74 I consider that an interchange at this location is not ideally situated or well planned, however if there must be an interchange at this location, an alternative layout for the Taylors Road interchange (which delivers better outcomes) is possible and should be enabled through the proposed conditions.

David Dunlop

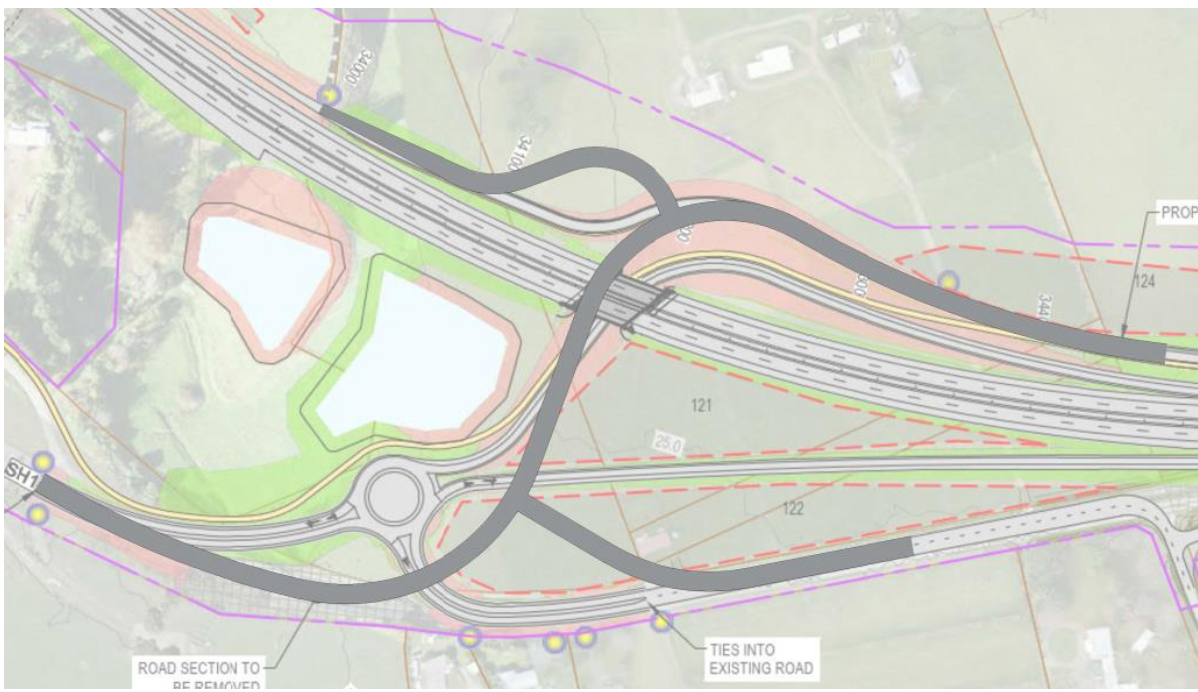
28 April 2023

Appendix A – Potential Alternative Interchange Layout Sketches

Appendix A1 - Potential Alternative Half Interchange Layout at Taylors Road:



Appendix A2 - Potential Alternative Layout with No Interchange at Taylors Road:



APPENDIX 9

TRANSPORT (KCDC) – TIM KELLY

IN THE MATTER of the Resource Management
Act 1991

AND

IN THE MATTER of applications by Waka Kotahi
NZ Transport Agency (Waka Kotahi) to Kāpiti
Coast District Council and Horowhenua District
Council for a designation to construct, operate,
maintain and improve a new state highway and
shared use path and associated infrastructure,
between Taylors Road (to the north of Ōtaki) and
State Highway 1 north of Levin

**SECTION 198D REPORT OF TIM KELLY – TRANSPORTATION ISSUES
(HOROWHENUA DISTRICT)**

HOROWHENUA DISTRICT COUNCIL

27 April 2023

A. OUTLINE OF REPORT

- 1 This report, required by section 198D of the Resource Management Act 1991 (“**RMA**”), addresses the issues set out in sections 171 of the Act, to the extent that they are relevant to the notice of requirement lodged with the Horowhenua District Council (“**HDC**”). A related requirement has been lodged with the Kāpiti Coast District Council.
- 2 These two notices of requirement given by Waka Kotahi NZ Transport Agency (“**Waka Kotahi**”), are for a designation to construct, operate, maintain and improve a new state highway and shared use path and associated infrastructure, between Taylors Road (to the north of Ōtaki) and State Highway 1 north of Levin. The project is known as the Ōtaki to North of Levin Highway Project (the “**Ō2NL Project**” / “**Ō2NL**”).
- 3 In addition, Waka Kotahi separately lodged resource consent applications relating to the Ō2NL Project with Manawatū-Whanganui Regional Council and Greater Wellington Regional Council.
- 4 This report addresses transportation matters with regard to the notice of requirement lodged with HDC. Matters relating to the notice of requirement lodged with the Kāpiti Coast District Council are addressed by Mr Dunlop and the resource consent applications are being addressed by technical advisors for the Regional Councils.
- 5 In preparing this report, I have relied on material within the Technical Assessment A: Transport (14 October 2022) prepared by Mr Peet.
- 6 While this report is pursuant to section 198D of the Resource Management Act (“**RMA**”), I have in accordance with section 42A(1A) and (1B) of the RMA attempted to minimise the repetition of information included in the notice of requirement and where I have considered it appropriate, adopt that information.

B. QUALIFICATIONS / EXPERIENCE

- 7 My name is Timothy [Tim] Martin Kelly. I am owner and director of Tim Kelly Transportation Planning Limited, a traffic engineering and transportation planning practice.
- 8 I have worked in the traffic engineering and transportation planning field since 1983. I hold a Bachelor of Arts degree in Geography, and a Master of Science degree in

Traffic Engineering and Transportation Planning, both from the University of Sheffield in the United Kingdom.

- 9 I am a full member of the Chartered Institute of Logistics and Transport, and the IPENZ Transportation Group (a Technical Interest Group of IPENZ).
- 10 My career to date has been spent in the consultancy sector of transportation, in both the United Kingdom and New Zealand. During my career, I have provided policy advice regarding traffic and transportation matters, and undertaken assessments for a wide variety of development proposals across New Zealand.
- 11 My role with regard to the Ō2NL Project has been to critically review the notice of requirement material lodged by Waka Kotahi, to liaise with Waka Kotahi and its experts and provide advice to HDC.
- 12 I am familiar with the site and surrounding area as a result of a number of site visits for this and other projects.

C. CODE OF CONDUCT

- 13 I confirm that I have read and agree to comply with the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023. I confirm that I have stated the reasons for my opinions I express in this report, considered all the material facts that I am aware of that might alter or detract from those opinions, and that this report and the issues I have addressed are within my area of expertise.
- 14 Statements expressed in this report are made within the scope of my expertise, except where I rely on the technical advice I have referred to in paragraph 5 of this report.
- 15 I have all the information necessary to assess the notice of application within the scope of my expertise and I am not aware of any gaps in the information or my knowledge.

D. REVIEW OF NOTICE OF REQUIREMENT

- 16 I have reviewed the transportation assessment in support of the notice of requirement to the HDC for the Ō2NL Project and generally agree with its conclusions.
- 17 The Ō2NL project will be highly beneficial for the Horowhenua District and beyond, not only in terms of the improved safety and efficiency of the roading network but also facilitating planned development within the District, such as that proposed at Tara-Ika.
- 18 In my view, the Ō2NL proposals include an appropriate level of provision for local connectivity where existing roads are severed by the alignment of the expressway. The provision of a Shared User Path (**SUP**) will provide important connectivity for north-south cycle and pedestrian movements which is currently not available.
- 19 However, despite close liaison between HDC and Waka Kotahi, the Ō2NL notice of requirement presents a confusing and contradictory approach to the Tara-Ika development, and particularly the provision of three future crossings over Ō2NL which are crucial to the Tara-Ika development. Those three crossings are the East-West Arterial ("**EWA**") and two strategic cycleways. The notice of requirement to HDC provides no categorical statement regarding the position taken with regard to the Tara-Ika development and these crossings. In my view, this is a matter that requires further clarification.
- 20 I understand that there are ongoing discussions between HDC and Waka Kotahi, which I fully endorse, and I further understand that there will be the opportunity to caucus with the experts for Waka Kotahi and others in due course.

E. TARA-IKA - CONNECTIVITY

- 21 Tara-Ika is a significant area of planned residential development located to the east of State Highway 57 (Arapaepae Road). This is expected to provide for 3,700 dwellings and will include commercial and educational activities.
- 22 This development will be enabled by Plan Change 4 ("**PC4**") to the Horowhenua District Plan. Although PC4 remains subject to appeals, these are anticipated to be resolved shortly.

- 23 PC4 anticipates the completion of the Ō2NL expressway in order to provide the accessibility enhancements needed to accommodate the development. For this reason, HDC is supportive of the Ō2NL project and has worked closely with Waka Kotahi to ensure the close integration of infrastructure provision and development.
- 24 With the Ō2NL alignment passing through the Tara-Ika development area, such integration is of particular importance to ensure the provision of a high standard of connectivity across the Ō2NL alignment. This will prevent Tara-Ika being physically segregated from urban Levin to the west, and provide opportunities to promote cycling and walking for trips between these areas.
- 25 Specifically, the Tara-Ika Masterplan provides for the EWA road connecting to Arapaepae Road, and two pedestrian/cycle connections (also referred to as strategic cycleways). All three of these future crossings would need to be accommodated by means of bridges over the Ō2NL alignment.
- 26 The Structure Plan for the Tara-Ika development (reproduced as **Figure 1** below) identifies the Ō2NL corridor and the locations at which this will be crossed by the EWA and the strategic cycleways. The connectivity represented by these crossings is an essential component of linking Tara-Ika with the established Levin urban area. For this reason, the existence of these crossings has been assumed in the transportation assessments undertaken for both PC4 and Ō2NL.
- 27 In this regard, I note that Policy 6A.1.1 of PC4 (which is not subject to appeal) requires that infrastructure and development at Tara-Ika must be consistent with the outcomes sought by the Structure Plan. Development that does not provide features in the manner shown by the Structure Plan will only be considered where an alternative is proposed that achieves the same or similar levels of connectivity within Tara-Ika and between Tara-Ika and the existing Levin urban area.
- 28 These clear intentions have not been reflected in the notice of requirement plans showing the designation extent, which provide no indication of where or how the Ō2NL alignment is proposed to be crossed.

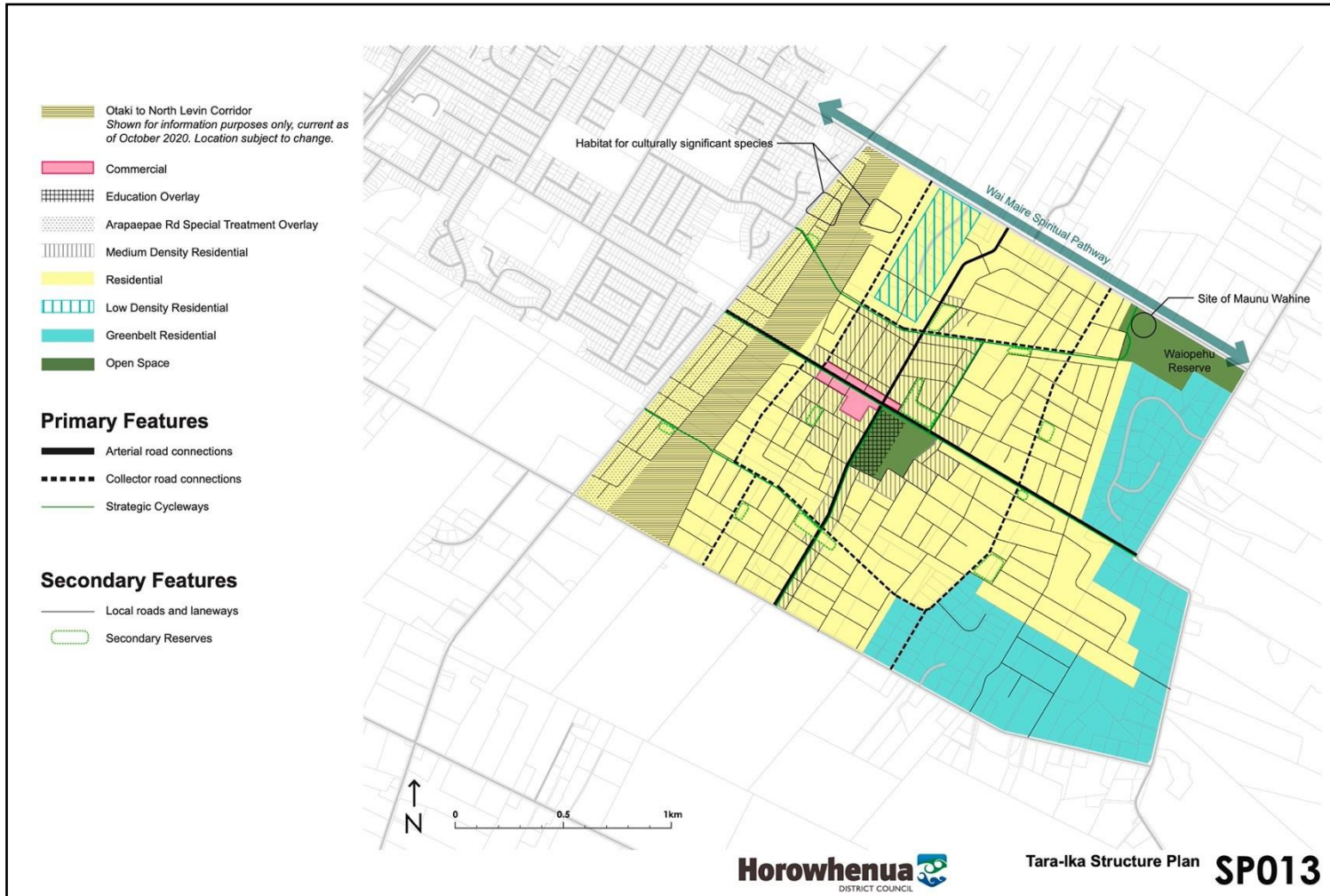


Figure 1: Tara-Ika Structure Plan

- 29 While the designation plans do not recognise Tara-Ika or the proposed Ō2NL crossings (being the EWA and two strategic cycleways), the traffic assessments made by Waka Kotahi for the Ō2NL project and reported in the technical material of Mr Peet do make allowance for the vehicle movements generated by the completed Tara-Ika development. These also include the effects of traffic movements using the EWA.
- 30 This means the submitted effects assessment for Ō2NL is inconsistent with the submitted notice of requirement plans for the project.
- 31 These matters are relevant, because there is a need to ensure that the intended connectivity between Tara-Ika and the Levin urban area is provided for.
- 32 The published notice of requirement plans raise a possibility that Ō2NL could be constructed without providing the connectivity to/from Tara-Ika. While this is assumed to be a hypothetical scenario, it nonetheless cannot be discounted without confirmation from Waka Kotahi. Such a scenario would result in significant changes to the overall volumes and distribution of traffic activity leading to development itself being stifled. This would also be in direct conflict with Waka Kotahi's own objectives for ensuring community connectivity and encouraging alternative modes of travel to the private car.

F. PROPOSED CONDITIONS

- 33 I have reviewed the proposed conditions prepared by Waka Kotahi.
- 34 Both the designation (DGA1) and resource consent (RGA1) conditions require that the Ō2NL project be undertaken in 'general accordance' with submitted plans.
- 35 As I have indicated above, these plans do not identify the relevant crossing locations associated with the proposed Tara-Ika development. Logically, these crossings would be constructed as part of the Ō2NL construction.
- 36 Further assessment is required on this matter, and expert caucusing may be of assistance, including in relation to suitable conditions to address this issue.

G. SUBMISSIONS

- 37 I have reviewed the submissions made in response to the Ō2NL notice of requirement. I have summarised the relevant transportation matters and give my current views on these below. I note that I am happy to attend mediation and caucusing on the matters

that submitters have raised, in case I have misunderstood a submission or matter raised.

Submissions in Support

- 38 Many submissions (including those from Transporting New Zealand, Palmerston North City Council, the Horowhenua Company Ltd, Horowhenua NZ Trust, Accelerate 25, Heavy Haulage Association, Automobile Association, Horizons Transport and the Horowhenua District Council) are supportive of the Ō2NL expressway, noting the significant benefits which will be associated with the project.
- 39 These benefits are seen to be improved connectivity, travel reliability and safety, as well as environmental and amenity improvements in the Levin central area. In the context of the recent infrastructural problems associated with Cyclone Gabrielle, improved resilience of the transport network is also now recognised to be a benefit with increased relevance.
- 40 The Horizons Transport submission, while generally supportive, notes a possibility of negative outcomes arising from increased private vehicle use which could work against the achievement of mode share and carbon emission targets within the RLTP. In this regard the submission encourages integration with the existing passenger rail network and other future public transport opportunities.
- 41 In my view, a consequence of the approvals process for a road project like Ō2NL is that the potential effects are necessarily considered in isolation. This means that effects such as increased private vehicle use and CO₂ emissions are inevitable, but these should be viewed in the context of a wider transport strategy which seeks improvements across all modes.

Construction Effects

- 42 A number of submissions raise concerns regarding effects during the construction phase of the project, most significantly dust but also noise, vibration, truck activity, cycle safety and property access.
- 43 In my view, such effects (as relevant to my area of expertise and leaving dust, noise and vibration effects to others) will be appropriately managed through the Construction Traffic Management Plan (“**CTMP**”) process. The CTMP will detail how truck and other activity will be managed to ensure the safety of all road users (including cyclists) and how effects will be managed. This will also detail how property

access will be maintained during construction. Construction activity will be conditional upon the development of a CTMP and its approval by HDC.

Shared User Path

- 44 A significant number of submitters raise issues regarding the proposed exclusion of equestrians from the Shared User Path (“**SUP**”) and inconsistencies in provision with the PP2Ō project to the south.
- 45 In my view, this is primarily a recreational rather than a transportation matter and I leave it to others to address.
- 46 One submitter seeks the removal of the SUP in favour of a route adjacent to the existing SH1 with wider connectivity provided to local services.
- 47 In my view, the provision of the SUP would not preclude the provision of other walking/cycling routes in the Horowhenua District. The ability to provide a route parallel to the existing SH1 may well be restricted by land ownership issues. Regardless, it would in my view be unreasonable to expect Waka Kotahi to provide such a route as part of the Ō2NL project.

Tara-Ika & Connectivity Across Ō2NL Alignment

- 48 Submissions by James McDonnell Ltd and Kevin Daly note the silence of the notice of requirement with regard to the provision of connectivity across Ō2NL between Tara-Ika and Levin and a ‘dis-connect’ between the plans for Tara-Ika and those for Ō2NL. Logically, the overbridges required to provide this connectivity should be constructed at the same time as Ō2NL.
- 49 I agree. As I have described above, I regard it as incomprehensible from a traffic and transportation effects management perspective that Waka Kotahi has apparently ignored the Tara-Ika proposals for the purposes of the notice of requirement. Good planning would ensure the close integration of these two projects for which the intentions have been very clear.

Ō2NL Geometry and Northern Connections

- 50 A submission from Errol Christiansen raises concerns regarding the geometry of the expressway and in particular the radius of horizontal curves and sizing of roundabouts.
- 51 In my view, the requirement for the project design to fully satisfy a safety audit process will ensure that such aspects are thoroughly reviewed and tested.
- 52 Errol Christiansen and Roger McLeay both suggest that the northern termination point of the expressway should be extended to address alignment and safety concerns with the existing SH1 to the north of Levin. Mr McLeay also suggests that the proposed SH57 roundabout should be a priority intersection which gives priority to SH57 as the road carrying higher traffic volumes.
- 53 I disagree with both proposals. Wherever the northern termination point is located, further benefits could have been obtained by extending the project further – eventual upgrades of SH1 further to the north are not precluded by the proposed termination point.
- 54 The form of any intersection is not solely governed by the balance of forecast traffic movements. While roundabouts may generate a greater number of overall crashes, the frequency of fatal and serious crashes is significantly lower, as a result of the reduced speeds needed by all traffic movements to negotiate the intersection. On this basis, I support the proposed construction of the Ō2NL / SH57 intersection as a roundabout.

Tararua Road Level Crossing

- 55 The submission from KiwiRail states that the proposal for an at-grade railway crossing at the western end of Tararua Road is less than ideal, when this will be the principal route to/from the south. The submission notes an acknowledgement from Waka Kotahi that this is a short-term measure only and that a medium-longer term solution is still under development – the preference of KiwiRail is for grade-separation at this location.
- 56 I understand that this issue has been the subject of extensive discussions between Waka Kotahi, KiwiRail and HDC. The underlying issue relates to the responsibility for the medium to longer-term solution. In this regard, my view is that there is a need for

some form of binding agreement between the parties which identifies the likely form and timing of an upgrade and attributes costs between the parties.

Other Matters

- 57 A submission from Beven Smith seeks investment in an electrified rail network, rather than Ō2NL.
- 58 In my view, this is not 'either/or'. The road and rail networks serve largely different travel needs. The construction of Ō2NL would not preclude upgrades to the rail network.
- 59 A submission from Dakin Bramwell raises a concern regarding increases in traffic activity on Tararua Road post-construction, and the possibility of congestion.
- 60 Tararua Road (west of Arapaepae Road) will see significant increases in traffic activity as this will become the sign-posted route between central Levin and the south. Modelling work reported by Waka Kotahi indicates that these increases can be accommodated without unacceptable levels of congestion, but this also requires an agreed strategy for the treatment of the railway crossing (as described above).
- 61 Janice Jakeman raises concerns regarding the availability of adequate sightlines to ensure safety for access to a property on Muhunoa Road East.
- 62 The provision for safe vehicle turning on all existing roads as a result of changes arising from the construction of Ō2NL will be ensured via the safety audit process.
- 63 A submission from the Prouse Trust Partnership raises a concern that amenity will be adversely affected as a result of a loss of access from the Queen Street East frontage of its property.

64 My understanding is that access will be provided to the Prouse property, by means of a short access road and turning area, as shown by **Figure 2** below.



Figure 2

65 A submission from Jan Windleburn opposes the closures of Kimberley Road and Arapaepae Road, especially in the context of planned growth in this area. It is suggested that Ō2NL should be elevated in this area.

66 Vehicle movements associated with development of the area between Tararua Road and Kimberley Road (east of Arapaepae Road) will be primarily accommodated by Tararua Road and its intersection with Ō2NL. Other movements will be accommodated by the proposed service road running along the eastern side of the expressway alignment in this area.

67 It is acknowledged that existing movements along Kimberley Road (east) and Arapaepae Road will be required to make a detour following the construction of Ō2NL. However, I agree with Waka Kotahi that the provision of an overbridge in this area would not be justified based upon the relatively small number of vehicle movements involved.

H. DISCUSSION AND CONCLUSION

- 68 There is one key issue raised in response to the transportation material accompanying the notice of requirement to HDC, and that relates to connectivity across the Ō2NL alignment between Tara-Ika and the existing Levin urban area.
- 69 To date, close collaboration has existed between Waka Kotahi and HDC regarding the co-ordination of development (Tara-Ika) and infrastructure (Ō2NL expressway).
- 70 In this context, it is surprising that the Ō2NL notice of requirement material presents a confusing position with regard to the Tara-Ika development, and provides little confidence that the proposed designation will provide for the high standard of east-west connectivity necessary to prevent Ō2NL becoming a line of severance.
- 71 Assurances are required that the east-west connectivity as identified by the Tara-Ika Structure Plan and PC4 will be provided for by the Ō2NL proposal. I look forward to further discussions between the parties, and mediation or expert caucusing (including in relation to appropriate conditions) as appropriate to address this matter.

Tim Kelly

27 April 2023

APPENDIX 10

URBAN DESIGN – GRAEME MCINDOE

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of notices of requirement by Waka Kotahi NZ Transport Agency (Waka Kotahi) to Kāpiti Coast District Council and Horowhenua District Council for designations to construct, operate, maintain and improve a new state highway and shared use path and associated infrastructure, between Taylors Road (to the north of Ōtaki) and State Highway 1 north of Levin

SECTION 198D REPORT OF GRAEME MCINDOE – URBAN DESIGN

**KĀPITI COAST DISTRICT COUNCIL AND
HOROWHENUA DISTRICT COUNCIL**

28 April 2023

A. OUTLINE OF REPORT

- 1 This report, required by section 198D of the Resource Management Act 1991 (“**RMA**”), addresses the issues set out in section 171 of the RMA, to the extent that they are relevant to the notices of requirement lodged with the Kāpiti Coast District Council (“**KCDC**”) and Horowhenua District Council (“**HDC**”) (together and separately as appropriate, the “**NoR**”).
- 2 The notices of requirement given by Waka Kotahi NZ Transport Agency (“**Waka Kotahi**”) to KCDC and HDC are for a designation to construct, operate, maintain and improve a new state highway and shared use path and associated infrastructure, between Taylors Road (to the north of Ōtaki) and State Highway 1 north of Levin. The project is known as the Ōtaki to North of Levin Highway Project (the “**Ō2NL Project**” or “**Project**”).
- 3 In addition, Waka Kotahi has separately applied for resource consents (“**Applications**”) relating to the Ō2NL Project to Manawatū-Whanganui Regional Council (“**Horizons**”) and Greater Wellington Regional Council (“**GWRC**”) respectively.
- 4 This report addresses urban design matters with regard to the NoR lodged with KCDC and HDC¹.
- 5 In preparing this report, I have also been informed by expert advice from the following technical advisors for KCDC and HDC:
 - (a) Julia Williams - Landscape, Visual and Natural Character; and
 - (b) Tim Kelly – Traffic and transport, HDC.
- 6 While this report is prepared pursuant to section 198D of the Resource Management Act (“**RMA**”), I have in accordance with section 42A(1A) and (1B) of the RMA attempted to minimise the repetition of information included in the NoR and where I have considered it appropriate, adopt that information.

¹ I have also reviewed the NOR lodged by Waka Kotahi with HDC in February 2022 being the NOR *O2NL Queen Street East to Tararua Road Section (Final) Complete February 2022*.

B. QUALIFICATIONS / EXPERIENCE

- 7 My name is Graeme McIndoe. I am a Registered Architect and qualified urban designer and the founding director at specialist urban design firm McIndoe Urban Ltd. I established my own urban design practice in 1992, founded McIndoe Urban in 2013 and have 40 years professional design experience.
- 8 I have a MA in Urban Design, BArch (Hons 1) and BBSoc. I am a Fellow of the New Zealand Institute of Architects. My relevant experience is described below.
- 9 My advisory positions and publications include:
- a. 2000-23 Chair since 2005 of WCC's waterfront TAG;
 - b. 2007-23 Founding and ongoing member of Eke Panuku Development Auckland's TAG design review panel;
 - c. 2011-23 Chair of the joint Nelson City/Tasman District Council urban design panel;
 - d. 2013-20 Member of Auckland Council's urban design panel;
 - e. 2014 Chair of the TAG for the Canterbury Earthquake Memorial Project;
 - f. 2013-14 Chair of the Heritage Advisory Team for the Christchurch Town Hall restoration;
 - g. 2005 Principal co-author of the MfE's *The Value of Urban Design: the economic, environmental and social benefits of urban design*; and
 - h. 2005 Principal co-author of the MfE's *Urban Design Toolkit*.
- 10 My recent experience in large scale urban and neighbourhood planning includes:
- a. Tara-Ika master-planning and PC4 urban design advice for HDC (2018-22);
 - b. Waitārere master-planning for HDC (2019-21);
 - c. Wynyard Precinct and Viaduct Harbour Precinct on Auckland's waterfront variously for Eke Panuku and VHHL (2019-23);

- d. I have been peripherally involved in my firm's planning for PNCC of the 7000+ dwelling Kakatangiata growth area at the western edge of Palmerston North (2019-ongoing); and
 - e. Three development projects on the Kāpiti Coast, of sizes ranging from 500 to 1300 dwellings (2022-23).
- 11 I have provided urban design advice and evidence on the following projects, including roading-related Boards of Inquiry:
- a. For Auckland Council and Eke Panuku Development Auckland on the Auckland motorway 'East-West Link' (2015);
 - b. For Eke Panuku on infrastructure planning and 'Design Requirements' for the America's Cup AC36 (2018-20);
 - c. For Wellington City Council on the Basin Bridge (2013);
 - d. For Save Kāpiti on the Mackays to Peka part of the Kāpiti Expressway (2012),
- 12 In the years from 1992-2009, I coordinated and taught the research and lecture-based 'Urban Design History Theory and Method' course and urban design 'Studio' at the Victoria University School of Architecture and Design. Since leaving my permanent 0.5 position as a Senior Lecturer at VUW, I have continued to be a guest lecturer and masters level external examiner in urban design.
- 13 My role in relation to the Ō2NL project involves providing urban design review of the NoR Proposal as it has emerged. I am familiar with site and surrounding area:
- a. I was on Waka Kotahi's 24 August 2022 guided tour of the entire expressway route with other technical experts for HDC, KCDC, Horizons Regional Council and Greater Wellington Regional Council.
 - b. I am particularly familiar with the Tara-Ika area because in collaboration with Local Landscape Collective and other technical consultants including Mr Mike Cullen, I was a principal co-designer of the Tara-Ika masterplan and subsequent PC4 structure plan for HDC. Prior to Waka Kotahi confirming the route described in the NoR, we designed a masterplan concept for each of the three route options then under consideration and undertook a detailed multi-criteria analysis of each. Once Waka Kotahi had confirmed the route, we

integrated that into the masterplanning, and then structure planning, for Tara-lka.

- c. I was also HDC's urban design expert for the PC4 process, providing urban design evidence and attending the hearing on its behalf. I have subsequently provided a detailed review for HDC of the NoR plans and documents (including earlier documents) as they have been supplied since December 2021.

C. CODE OF CONDUCT

- 14 I confirm that I have read and agree to comply with the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023. I confirm that I have stated the reasons for my opinions I express in this report, considered all the material facts that I am aware of that might alter or detract from those opinions, and that the report and the issues I have addressed are within my area of expertise.
- 15 Statements expressed in this report are made within the scope of my expertise, except where I rely on the technical advice I have referred to in paragraph 5 of this report.
- 16 I have all the information necessary to assess the NoR within the scope of my expertise and am not aware of any gaps in the information or my knowledge.

D. EXECUTIVE SUMMARY

- 17 The key conclusions of my report are:
 - a. I consider that the whole of corridor approach to landscape and design, which responds to cultural and ecological drivers and considers the rural receiving environment, is sound².
 - b. The proposed street connections at the north and south boundaries of Tara-lka (HDC Plan Change 4 urban growth area) at Queen Street East and Tararua Road are well located and configured.
 - c. The proposed shared path walkway and cycleway is a positive recreational amenity and active transport asset, and at Tara-lka it is well-located on the eastern side of the expressway.

² I have read and support Ms Williams' expert evidence in this regard.

- d. The configuration described by the NoR and shown on the General Arrangement Plans (Volume III – Drawing set, Sheets 5 to 7) fails to integrate transportation and land use at Tara-Ika and is not consistent with aspects of the Ō2NL’s Cultural and Environmental Design Framework (“**CEDF**”).
- e. In not providing sufficient cross-corridor connections at Tara-Ika (as shown on PC4 Structure Plan 013), the configuration is not consistent with relevant principles and guidance for neighbourhood spatial planning including Waka Kotahi’s Intended Project Outcomes and Urban Design Principles; Bridging the Gap; the New Zealand Urban Design Protocol (of which Waka Kotahi is a signatory), and the project’s CEDF.
- f. The lack of east-west connectivity at Tara-Ika will lead to avoidable increased vehicle dependency and use, and to consequent adverse health, social and environmental effects. Specific effects will include increased carbon emissions, compromise to the planned neighbourhood and community services at the centre of Tara-Ika, and social severance, particularly for those communities located to the west of the expressway on both sides of Arapapae Road.
- g. The location and configuration of the proposed expressway as it passes through Tara-Ika would be acceptable only if the East West Arterial (“**EWA**”) street connection and two strategic cycleway and pedestrian bridge connections as described in PC4³ are provided. These connections are essential mitigation for placing the Ō2NL expressway in this location through a planned urban area.
- h. Given the process and cost challenges of retrofitting them, cross-connections at Tara-Ika should in my opinion be integrated with the design and construction of the Ō2NL.

18 I understand that HDC and Waka Kotahi are in discussions about these matters and I fully endorse those occurring. I note that I am also happy to attend expert caucusing and mediation to progress discussion of them, including in relation to appropriate conditions and the like.

³ As shown on PC4 Structure Plan 013.

E. SCOPE OF REPORT

- 19 My report focuses only on issues related to urban design and covers the following topics:

General design approach along the length of the Ō2NL

- 1) General observations;
- 2) Cultural and Environmental Design Framework (CEDF);
- 3) Application of the CEDF;
- 4) Taylors Road Interchange;
- 5) Views eastward to the ranges across Tara-Ika ;
- 6) Geometry of stormwater management areas.

Integrating transport and land use planning at Tara-Ika

- 7) Planning for the future;
- 8) PC4 Structure Plan E-W link;
- 9) Timing of construction of connections across the Ō2NL;
- 10) Waka Kotahi's assessment of connectivity effects on Tara-Ika;
- 11) Contribution to a well-functioning environment;
- 12) Greenhouse gas emissions.

Relationship of NoR at Tara-Ika with Relevant Documents

- 13) Relation to Waka Kotahi's Intended Project Outcomes;
- 14) Relation to Waka Kotahi's 'Avoid-Shift-Improve' Framework;
- 15) Relation to Waka Kotahi's CEDF Urban Design Principles;
- 16) Relation to the CEDF's Section 3.3 "Create an Enduring Legacy";
- 17) Relation to Waka Kotahi's 'Bridging the Gap' Urban Design Guidelines;
- 18) Relation to the New Zealand Urban Design Protocol.

Submissions

- 19) Strategic benefit of regional connectivity;
- 20) Cross-corridor connectivity;
- 21) Shared pathway;
- 22) Change to existing roading geometry;
- 23) Bridge and intersection design.

Comment on proposed conditions

- 24) Certainty of delivery of a suitably integrated and high quality outcome; and
- 25) Coordination of cross-connections with Ō2NL design and construction.

- 20 In preparing this report, I have reviewed the following documents lodged with the NoR:
- a. NOR Ō2NL Queen Street East to Tararua Road Section (Final) Complete February 2022.
 - b. Volume II Supporting Information and Assessment of Effects on the Environment
 - c. Ō2NL AEE 03 Appendix Three CEDF Consent Version
 - d. Ō2NL AEE 03 Appendix Five Draft Conditions
 - e. Final Technical Assessment M – Built Heritage
 - f. Drawing sets including:
 - i. 02 – General Arrangements
 - ii. 03 – Geometrics
 - iii. 05 – Geotech details
 - iv. 06 – Stormwater – Drainage
 - v. 07- Structures
 - vi. 09 – Planting
 - vii. 10-Photos Simulations

F. GENERAL DESIGN APPROACH ALONG THE LENGTH OF THE Ō2NL

General observations

- 21 The NoR describes a generally positive configuration and design approach and in my opinion has the following positive attributes:
- a. A whole of corridor approach to landscape design which responds to cultural and ecological drivers, and with consideration of the rural receiving environment.
 - b. Street connections at the north and south boundaries of Tara-Ika at Queen Street East and Tararua Road are well located and configured.

- c. The location of the Tararua Road interchange which provides for vehicle access to and from Taitoko/Levin at a planned future area of industrial zoning is logical, and far superior to directing heavy traffic along the residentially focused Queen Street East.
- d. The shared path walkway and cycleway is a positive recreational amenity and active transport asset, and it is well-located on the eastern side of the expressway at Tara-Ika in order to connect with local streets and have easy access to the planned neighbourhood centre there.

Cultural and Environmental Design Framework (CEDF)⁴

22 The CEDF is comprehensive, describing in general terms the process that has been undertaken, sound cultural and environmental aspirations and detailed direction for design. However, I have had the benefit of seeing and commenting on various iterations of the CEDF and it continues to contain multiple often overlapping but different lists of criteria and principles⁵:

- 1) At page 7, *Core principles* include eight values and five principles;
- 2) At page 8, *Cultural and Environmental Indicators and Concepts* ;
- 3) At page 10: *Waka Kotahi Design Principles for landscape* (10 principles);
- 4) At page 10: *Waka Kotahi Design Principles for urban design* (10 principles);
- 5) At page 11: *Toitu Te Taiao: Waka Kotahi Preliminary Draft Principles* (for sustainability);
- 6) At page 52 further 'Design principles' with headings '*Tread lightly on the Whenua*' and '*Leave a positive Enduring Legacy*';
- 7) At page 53 principles for *Tread lightly on the Whenua*' are described;
- 8) At page 54 further design principles to 'Create an Enduring Legacy are described;

⁴ *Appendix Three CEDF Consent Version October 2022*

⁵ This issue was identified in my Urban Design Review Memos #2 (21 Jan 2-22) and #3 (25 July 2022).

9) At page 55, a diagram demonstrates how set of principles for 'Preserve, Restore, Enhance and Create are woven together.

23 Many of these are profound, and all appear relevant. However, for efficiency of application and effectiveness, an integrated and comprehensive set or sets may be best. It is often the case that the more overlapping principles there are, the greater the risk that they are not effectively applied. Listing these in an un-numbered narrative form as is the case with many of these does not assist with referencing or their application in practice.

24 While the CEDF⁶ appears to comprehensively address cultural values, other matters relating to the design of the urban environment through which the expressway passes are not addressed in Chapter 3: Design Principles. These include matters relating to achieving a liveable urban neighbourhood.

Application of the CEDF

25 The CEDF is identified as being a work in progress, and is proposed by Waka Kotahi to be developed further following confirmation of the NoR and the granting of the regional consents. However because of this, it remains somewhat indeterminate and is somewhat 'loose' as the primary means of design control:

- a. Cultural and Environmental Indicators identified (at CEDF page 8) are to be reviewed and completed with mana whenua. While it is entirely appropriate that these indicators are developed with mana whenua, this means that the Consent Version may change following approval being obtained, and without the benefit of wider review.
- b. The multiple lists of principles and criteria as identified above should be refined and coordinated and in my opinion these should be set (i.e fixed) through the approval process. The design itself is not fixed and can/will be developed. But there should be no possibility of losing the important underlying principles.

⁶ CEDF, at pages 7, 11, 52, 53, 54, 55.

- 26 Proposed Designation Condition DGA6 requires an 'Outline plan' to be provided including 'a Design Review Audit to be completed in accordance with Condition DTW5' and "the design report required by Condition DRN3". DTW5 is:

Cultural and Environmental Design Framework

- a) The Project must be consistent with the Design Principles in Chapter 3 of the '*Cultural and Environmental Design Framework*', Consent Version, dated October 2022.
- b) Design Review Audits, set out in Chapter 4 of the '*Cultural Environmental Design Framework*', to confirm that the Project is consistent with the Design Principles must be undertaken:
- i. prior to the commencement of construction; and
 - ii. every three (3) months until the Project is open for public use.
- c) A Design Review Audits required by clause (b) may describe design elements of the Project with reference to, but not limited to, Chapter 4 of '*the Cultural and Environmental Design Framework*', Consent Version, dated October 2022.
- d) A Design Review Audit required by clause (b) must be provided to the District Council on request.

The Design Review Audit process is internal, and this condition provides only for information supply to the District Council. It does not appear to provide for any certification by the District Council. Therefore there is little scope for project oversight and no apparent scope for project input by HDC or KCDC.

- 27 The Project as described in the drawings is not consistent with the generally sound Design Principles in Section 1.2 and Chapter 3 of the CEDF. This is in my opinion a fundamental problem that must be addressed.

Taylor's Road Interchange

- 28 The proposed interchange roundabout at Taylor's Road provides for access to and from the south to the expressway, with a cross section just north of the existing Taylor's Road including five parallel carriageways. These are:
- a. Taylor's Road extension, two way, two lanes;
 - b. Expressway off-ramp, one-way north, one lane;
 - c. Expressway, two way, four lanes;
 - d. Expressway on-ramp, one-way south, one lane; and

- e. Property access track, two way, single wide lane, associated with route of walkway/cycleway.

29 This is primarily a matter for traffic engineering design review, and is addressed in the transport report prepared by Mr David Dunlop for KCDC. However from an urban design perspective, this configuration and the roundabout that connects the Taylors Road extension, SH1, and the expressway on and off ramps to and from the south, appears geometrically complicated.

30 At the south end of the Ō2NL, the geometry of the underpass cross-connection being constructed at Ch 34950 at the edge of the Waitohu Stream as part of existing works appears to be based on utilising an overbridge to provide a route under the expressway. Stantec's *General Arrangement Plan – Indicative*, Sheet 18 (dated 10.10.22) shows that this part of the configuration is outside the proposed designation boundary, and is noted on this drawing as "*Peka to Otāki design shown indicatively for reference*". My view is that:

- a. The route is convoluted and hampers legible, convenient and efficient connection between Otāki township and the residential areas to the north-west.
- b. Considering 'Space Syntax' analysis⁷, this road configuration requires three 'axial shifts' between Taylors Road and the old SH1, as opposed to not more than one which would be desirable. That will compromise 'spatial integration' between Otāki and the rural areas to the north-west, and lead towards an element of 'spatial segregation'. It is unclear as to whether this configuration can be influenced by the current NoR process.

Views eastward to the ranges across Tara-Ika

31 The NOR states that: *The potential landscape and visual impacts of the proposed designation will be mitigated by: [3 means including:]*

planting a band of low/buffer vegetation (such as flax) alongside the highway with planting plans and specifications setting out approaches and appropriate

⁷ 'Space Syntax' is an analytical methodology developed in the UK in the mid-1980s to determine the degree of 'spatial integration' and/or 'spatial segregation' of areas within urban settings. The Space Syntax software does this by analysing amongst other things the number of 'axial shifts' on the journey between destinations. The principle of axial shifts can be considered without recourse to the software.

*species to soften the views of the highway and traffic, while maintaining visual connections, particularly to the Tararua Range.*⁸ (p92)

- 32 Maintaining visual connections to the Tararua Ranges along the length of the alignment also places vehicles in view from the residential areas adjacent, risking exacerbating the visual impact of vehicles on Tara-Ika. One of the fundamental guiding principles for the planning of Tara-Ika is to recognise the special landscape values derived from views of the Tararua Ranges, and that is achieved with views down streets deliberately aligned on the Tararua Ranges.⁹ Views between streets will inherently be restricted by the residential development provided for by PC4, with dwellings of up to three storeys across the western part of the area and intervening between the Ō2NL and the ranges. Bridges over the Ō2NL in locations described by PC4 were seen at the time of structure planning Tara-Ika as providing elevation for bridge users to gain excellent views eastward towards the ranges.
- 33 I also support the concept of acoustic bunding along the edge of the Ō2NL at Tara-Ika as recommended by Ms Wilkening. For reasons noted above, this would have minimal to no effect on the extent of views from the expressway to the ranges. However, in combination with appropriate landscape design and planting, bunds would mitigate the negative visual as well as acoustic effects of the expressway traffic as it passes through this urban area. Bunds would contribute to achieving (or alternatively - 'not undermining') a well-functioning urban environment here.

Geometry of stormwater management areas

- 34 The stormwater management areas appear arbitrarily geometrically shaped. Following discussion with Mr Lister of Isthmus Group (who is advising Waka Kotahi), I understand that the general locations and areas of the stormwater ponds/detention areas are defined by the NoR, however their precise shape and design will be subject to further work. The ponds/detention areas in the Tara-Ika area¹⁰ should be elongated so they are more effective as a buffer zone to the residential (that is, extend the length of the buffer) and naturalised in shape for visual integration. The current geometric shapes, including some with chamfered corners, are likely to appear utilitarian rather than as the landscape amenity asset they should also be.

⁸ Refer NOR O2NL Queen Street East to Tararua Road Section (Final) Complete February 2022, page 92

⁹ HDC, *Tara-Ika Master Plan* 18 November 2020, pages 18,19

¹⁰ As shown on General Arrangement Plans Sheets 5 and 6

G. INTEGRATING TRANSPORT AND LAND USE PLANNING AT TARA-IKA

Planning for the future

- 35 Prior to Waka Kotahi confirming their chosen Ō2NL route option, I was involved in initial concept planning for HDC of the three Waka Kotahi route options and multi-criteria analysis (“**MCA**”) from a land use planning perspective for each.¹¹ These were options N4 (which became Waka Kotahi’s chosen route), N5 and N9. In this MCA of expressway-related Tara-Ika development options, we found that the selection of alignment N4 near to and parallel with SH57 introduced amenity, connectivity and severance challenges that did not occur with the also parallel but more easterly alignment.
- 36 Our planning for Tara-Ika for HDC addressed those constraints and in providing for corridor and connections, integrated land use planning with Waka Kotahi’s planned future transport infrastructure. Such an approach is in my opinion good structure planning practice, sensible, and also essential.
- 37 However, Waka Kotahi has not in my opinion reciprocated with a similar future-focused and enabling approach to project planning and design of the expressway as it passes through Tara-Ika. That appears to be because the Tara-Ika area and development is not considered by Waka Kotahi to be lawfully part of the ‘existing environment’. I understand this is a legal and planning matter on which I have no opinion and make no comment. However, from an urban design and planning perspective, the spatial planning outcome of not providing PC4’s planned cross-connections at Tara-Ika is unacceptably poor.
- 38 This lack of planning for the future also contradicts one of Waka Kotahi’s Cultural and Environmental Indicators listed at page 54 of the CEDF which is to “Create an Enduring Legacy”. That includes the following:
- *“Improving safety and resilience into the future”,*
 - *“Enhancing local connectivity”;*
 - *“Supporting Taitoko’s growth and planned urban development – increasing Horowhenua’s accessibility as a place to live; and*
 - *Providing for walking and cycling journeys with different purposes for all ages considering the likely sequence of destinations for locals and visitors.*

¹¹ This was a multi-disciplinary assessment carried out by McIndoe Urban, Local Landscape Collective, Urbacity, and Morphum

This principle focuses on a future state (rather than what has been consented or is the 'existing environment') and it also raises matters which are relevant to cross-connections.¹²

Cross-corridor connectivity at Tara-Ika

- 39 Providing good connectivity within and between urban areas is a core neighbourhood planning concept. Small urban blocks are best to facilitate walking. In a residential neighbourhood, blocks might be typically up to 200m or 250m in the long direction and much shorter in the other. Without PC4's planned cross-expressway connections, the block length enforced by and along the Ō2NL at Tara-Ika is 2000m, which is between eight to ten times what is usually considered to be a maximum. That is from an urban design, structure and neighbourhood planning perspective unacceptable for the reasons described in more detail below.
- 40 The principal link is the East-West Arterial ("**EWA**") as an overbridge connecting that part of Tara-Ika to the east of the expressway with Arapaepae Road, on the alignment of Liverpool Street. That then allows for connection north and or south along Arapaepae Road and from there to the west along existing and future connections.
- 41 Recognising the likely process and cost challenges of achieving multiple street bridges, the Tara-Ika Structure Plan also introduces only two pedestrian and cycle bridges providing for PC4's Strategic Cycleways at the points more or less mid-way between these road connections. This reduces the spacing between cross-connections to 500m. That spacing is wider than is ideal but in these circumstances is in my opinion acceptable.¹³
- 42 By allowing connection to Meadowvale Drive, the northernmost of these Strategic Cycleways provides direct connection between Tara-Ika and Waiopahu College. This is important to facilitate convenient pedestrian and cycle movement for Tara-Ika students to and from school, and at the same time reduce the need for the use of cars (see Figure 1).

¹² I am citing 'Creating an Enduring Legacy' here only to confirm Waka Kotahi recognition of the principle of planning for the future. The relation of the proposal to this is discussed in detail later.

¹³ Should the Ō2NL not be located here, Tara-Ika would have been planned with more frequent E-W street connections to and from Arapaepae Road.

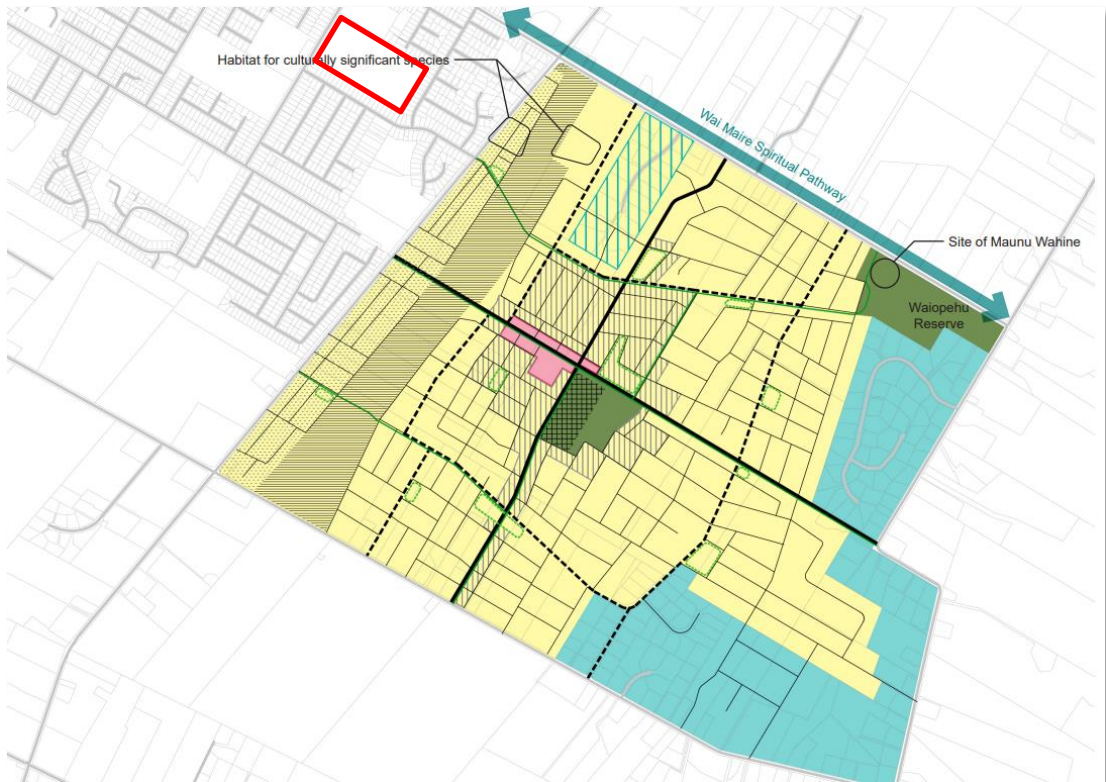


Figure 1: Tara-Ika Structure Plan Decision Version 14 June 2022. This shows the arterial road connection (bold line running E-W) on the alignment of Liverpool Street. Strategic cycleways are shown with green lines. (I have overlaid a red rectangle which identifies Waiopahu College.)

43 To illustrate how important these cross-connections are, the distance from the centre of Tara-Ika to the eastern entry to Waiopahu College from Featherston Street is measured. Waiopahu College is not the only destination, however it is an indicator of a known community destination which illustrates the impact of not providing sufficient connectivity.

- a. Via the EWA, Arapaepae Road and Meadowvale Drive, the distance between these destinations is approximately 1.87km;
- b. Via the northern strategic cycleway Arapaepae Road and Meadowvale Drive, it is approximately 1.66km; and
- c. Via Queen Street East connection to Featherston Street, the distance between these destinations is approximately 2.4km.

44 Considering the journey between these representative points, the Queen Street East route is 530-740m longer than the routes which use PC4's planned cross-corridor

connections. This is appreciably greater and inconvenient for a cyclist but well beyond the usual limits of walkability.

Waka Kotahi assessment of connectivity effects on Tara-Ika

45 The Queen Street East to Tararua Road Section NOR records¹⁴:

Landscape and visual

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;

That statement is incorrect as, by omitting to provide the cross connections, the NoR fails to recognise or provide for the PC4 development pattern.

46 Effects on Tara-Ika severance and connectivity appear to be underrated in the NoR. From an urban design perspective, there are what appear to be two inaccuracies¹⁵:

- a. Impact on community and property connectivity across and to the Ō2NL project is assessed as “*Minor adverse effect on the basis that connectivity is maintained.*” In my view this is not the case, unless the configuration also includes the three E-W connections in the PC4 Structure Plan that are located between Queen Street East and Tararua Road. (This statement would be accurate only if the PC4 planned urban development of Tara-Ika is ignored (as appears to be the case here), and only existing connections at Queen Street East and Tararua Road are considered.)
- b. “Impacts on active modes (and particularly pedestrians and cyclists)” are assessed as: “*Positive effect as a result of the provision of the SUP and improved safety (including through reduced traffic on the existing network).*” The shared use path facility is acknowledged, and it does provide for north-south movement. But given that the two strategic cycleway connections linking Tara-Ika to the existing urban area to the west are neither mentioned nor shown in the NoR, in my opinion this positive rating is not justified.

¹⁴ Refer NOR *Ō2NL Queen Street East to Tararua Road Section (Final) Complete February 2022*. at page 68 – Table 13. I note that Table 13 of the Queen St East to Tararua Road section NOR provides far greater detail with respect to effects that are minimised or avoided through project shaping than is provided in Table 38-1 of Volume II – AEE for the Ō2NL Project.

¹⁵ Refer NOR *Ō2NL Queen Street East to Tararua Road Section (Final) Complete February 2022* at page 70

47 The Tararua Road and Queen Street East overbridge links are insufficient by themselves to provide for suitable connection between the existing urban area of Levin and its extension at Tara-Ika.

Contribution to a well-functioning environment

48 Urban design research provides compelling evidence on the benefits of connectivity as a contributor to a well-functioning environment. The following illustration (Figure 2) is from the Value of Urban Design: *The value of mixed use and connectivity: illustrating the linkages*.¹⁶ This summarises the findings from multiple empirical research studies and indicates the benefits of connectivity.

49 Furthermore, the same research uncovered compelling evidence on the effects of vehicle dependence and increased vehicle use and this is illustrated in Figure 3.¹⁷ These findings are material when considering the effects of a not properly connected and therefore not well-functioning environment:

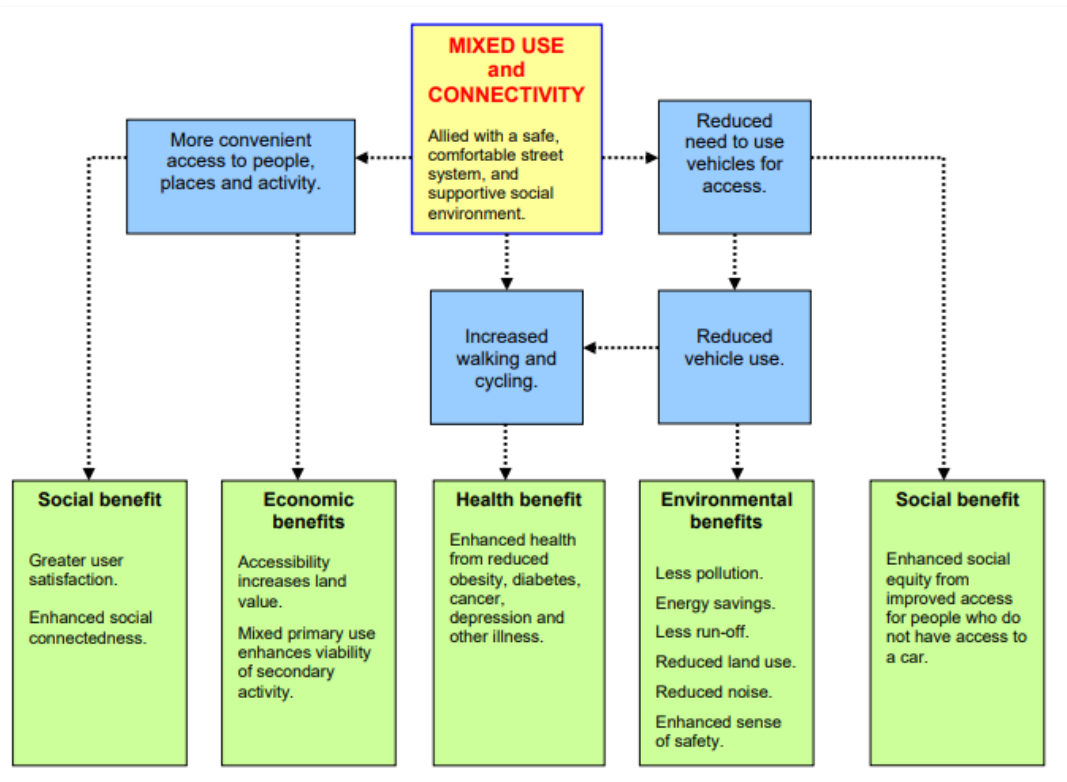


Figure 2: The benefits of mixed use and connectivity (from the Value of Urban Design research).

¹⁶ MfE (June 2005) *The Value of Urban Design: The economic, environmental and social benefits of urban design*. (page 66)

¹⁷ I produced this illustration in 2005 as part of the Value of Urban Design project. It summarised research findings but was not used in the final report.

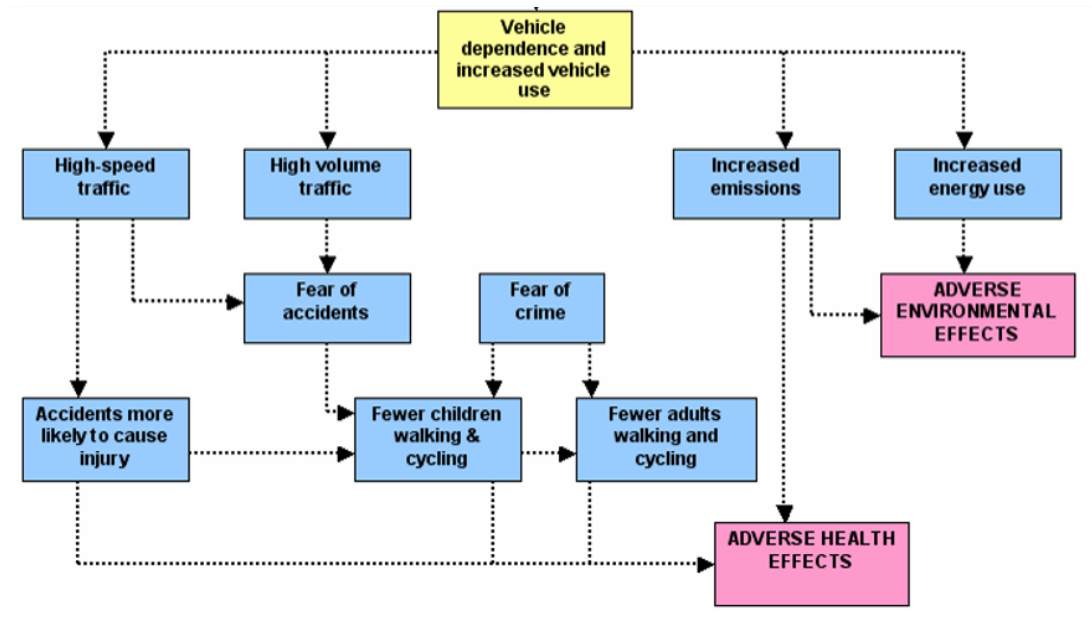


Figure 3: The effects of vehicle dependence and increased vehicle use (derived from the findings of the Value of Urban Design research).

50 The NPS-UD speaks of well-functioning urban environments:

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.

51 The absence of planned cross connections at Tara-Ika precludes two of the three planned active mode routes here, with the consequence of restricting potential for convenient active transport. This compromise to spatial integration by extension restricts community connections. It will also restrict the catchment of and accessibility to the local services planned at the centre of Tara-Ika. This compromises the ability to achieve a well-functioning environment.

52 NPS-UD Policy 1 states that: *Planning decisions contribute to well-functioning urban environments, which are urban environments that, as a minimum* (my emphasis): *have or enable a variety of homes that* are consistent with all of seven identified

policies.¹⁸ I consider that in relation to the urban area of Levin including Tara-Ika, the Ō2NL is not consistent with two of these seven NPS-UD policies:

- a. Without the planned EWA and two strategic pedestrian/cycleway cross connections Tara-Ika, the NoR will not be consistent with *NPS-UD Policy 1 (iv): “have good accessibility for all people between housing, jobs, community services, natural spaces, and open spaces, including by way of public or active transport*
- b. Without those links the Ō2NL (as part of an emerging urban environment) will result in effects which mean it will not be consistent with Policy 1 (vi) “*support reductions in greenhouse gas emissions*”. This is because the required longer local travel distances will compromise active travel and lead to more vehicle use.

Greenhouse gas emissions

53 The NPS-UD also addresses greenhouse gas emissions relating to urban environments:

Objective 8: New Zealand’s urban environments: support reductions in greenhouse gas emissions; and are resilient to the current and future effects of climate change.

54 Because of the severance caused at Tara-Ika by the Ō2NL Project, it is likely that more people will use vehicles to move in an east-west direction between Tara-Ika and the established part of Levin than would otherwise be the case if the planned cross connections were made. This will unnecessarily increase future greenhouse gas emissions. Given the constraints of retrofitting bridges over an existing expressway, some or all of this avoidable increase in greenhouse emissions is likely to be in perpetuity. A proportion of these emissions would be able to be avoided if the planned east-west connections were to be included in the Ō2NL project, and travel distances consequently shortened.

55 In relation to greenhouse gas emissions, the NoR document identifies approaches to addressing climate change including reducing greenhouse gas emissions with

¹⁸ While it is not the mission of the Ō2NL to provide for homes, its proposed existence here is inextricably linked with and impacts on the provision of homes by others at Tara-Ika and the ability to achieve a well-functioning environment there.

consideration of operational and enabled emissions. These intentions are described below with my highlights:

3.5.1.3 Enabled emissions

*The Toitū Te Taiao 'Avoid-Shift-Improve' framework to achieve 'sustainable urban access' has been applied to consider the potential opportunities to **reduce the enabled emissions** resulting from use of the new state highway, acknowledging that while the proposed SUP provides mode choice, the greatest potential for reduction is through **integration of land use and transport planning** and providing connections to existing cycling and walking paths. The 'Avoid-Shift-Improve' framework assessment is set out in Table 1 below. ...*

While much of the integrated planning work to achieve this integration is outside of the scope of the Project, the infrastructure built or processes resulting from the Ō2NL Project provide building blocks for this integration to occur.

*Waka Kotahi will continue both through statutory planning processes but also through future **integrated master planning processes** and the improvement programme to **work with stakeholders to achieve the sustainable urban access critical to reducing enabled emissions**.¹⁹*

56 These intentions are not delivered by the proposed general arrangement:

- a. The absence of the two of the three PC4 planned strategic cycleway and pedestrian connections across the expressway²⁰ compromises active transport and will encourage greater (rather than reduced) vehicle use.
- b. This will embed unnecessary expenditure of energy and consequent carbon cost due to the need to for residents to travel further by vehicle to get to and from destinations, and/or use a vehicle when they might otherwise walk or cycle.
- c. The intended integration of land use and transportation has not been achieved, notwithstanding that HDC plans for Tara-Ika (that is, Tara-Ika Structure Plan 013) have now been confirmed.²¹

¹⁹ Refer Volume II AEE, Section 3.5.1.3, page 19

²⁰ These are in addition to the planned Queen Street East overbridge.

²¹ I note that PC4 is still subject to appeals which are expected to be resolved prior to the hearing for the Ō2NL Project. Appeals do not challenge the Tara-Ika Structure Plan 013, therefore for all intents it is considered operative.

H. RELATIONSHIP OF NoR AT TARA-IKA WITH RELEVANT DOCUMENTS

57 The NoR proposal at Tara-Ika is not consistent with Waka Kotahi's own directions and expectations for cross-corridor connectivity as described below.

Relation to Waka Kotahi's Intended Project Outcomes

58 The Queen Street East to Tararua Road Section NoR²² identifies intended project outcomes. All five are identified below and these are from an urban design perspective sound and supportable:

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.*

59 But three of these: means of facilitating growth (at Tara-Ika); integrating with the Tara-Ika Growth Area; and achieving a well-connected and resilient urban development, will in my opinion not be achieved.

Relation to Waka Kotahi's 'Avoid-Shift-Improve' Framework

60 Waka Kotahi identifies the intent of this framework which relates to 'Enabled emissions' as described above. Waka Kotahi identify the following 'avoid' approach in table 3-1²³:

Avoid/reduce the need to travel, or the time or distance travelled by car while improving accessibility, for example, through integrated land use and transport planning for urban form that supports well connected multi-modal access to local services and employment.

²² Refer NOR O2NL Queen Street East to Tararua Road Section (Final) Complete February 2022, section 4.5, page 11

²³ Refer Volume II AEE, Section 3.5.1.1, page 19-20

61 The planned configuration of the proposal as it passes through Tara-Ika is not consistent with any part of this approach, unless the three planned cross-corridor connections identified in PC4 are provided. Furthermore, Waka Kotahi's tabulated analysis in relation to this does not mention Tara-Ika.

Relation to Waka Kotahi's CEDF Urban Design Principles

62 Waka Kotahi lists 10 urban design principles in the CEDF²⁴. This list is suitably comprehensive and a good basis for assessing the merits and suitability of the project. The NoR does not in my opinion follow five of these principles:

1. *Designing for the context*

Assessment: Not achieved. The NoR neither describes nor takes into account the PC4 planned urban context of Tara-Ika.

2. *Integrating transport and land use*

Assessment: Not achieved. The planned interchange at Tararua Road is well-located. However planned and important direct connections between Tara-Ika neighbourhood centre and the wider urban area including areas to the west which it would support, and also Waiopēhu College which will serve the residents of Tara-Ika, are not provided.

3. *Contributing to good urban form*

Assessment: Not achieved. The NoR does not recognise planned urban form as described by HDC PC4 for Tara-Ika.

5. *Supporting community cohesion*

Assessment: Not achieved. The Ō2NL severs and segregates rather than links the urban areas of Levin that are on both sides. Absence of convenient and direct local connections across between Tara-Ika and the already built urban neighbourhoods of Levin to the west, and between that part of Tara-Ika to the west of the expressway and the proposed Tara-Ika town centre to the east, severely compromises the potential for community cohesion. The planned physical disconnect between neighbourhoods will lead to separated communities.

6. *Maintaining local connectivity*

²⁴ Cultural and Environmental Design Framework (Appendix 3 CEDF, Consent Version) page 10

Assessment: Not achieved. While existing connections at Queen Street East and Tararua Road are maintained in modified form, local connectivity as described on the PC4 Tara-Ika Structure Plan 013 has not been provided.

- 63 The CEDF correctly identifies that “*a project which dismisses one or more principles entirely is unlikely to lead to satisfactory urban design outcomes.*”²⁵ Waka Kotahi’s NoR dismisses half of its own urban design principles and is by that measure an unacceptably poor urban design outcome.

Relation to the CEDF’s Section 3.3 “Create an Enduring Legacy”

- 64 Principles for designing for the future are described in the CEDF at section 3.3 ‘Create an Enduring Legacy’ (page 54). While these are appropriate and sound, the design of the project does not follow several principles that relate to local connectivity and supporting growth. These and my related assessment are recorded below. (The principles are not numbered, and text in italics is as written and highlighted in the CEDF.)

Enhancing local connectivity:

— *Repurposing existing SH1 and SH57 as an enhanced local spine (with safer speeds and better amenity) linking the Horowhenua’s communities, and tying local roads into a network*

Assessment: Not achieved. While the project connects to existing local roads, the planned future EW connection and strategic cycle routes at Tara-Ika are not provided. At Tara-Ika the road system is therefore not tied into a network.

— *Reconfiguring the local network to provide a north-south route to the east of the highway and north of the Ohau River (connecting Levin— Tara-Ika— Kimberley Reserve—Muhunua East—Ohau and in addition to the planned HDC east-west link from Tara-Ika to Levin).*

Assessment: Not achieved. The principle is sound but the Ō2NL plan does not provide for the planned HDC east-west link.

— *Creating a foot/cycle shared path network integrating a new path along the highway and to complement a wider shared use path [in conjunction with HDC]*

²⁵ Volume II, Appendix 3: CEDF, page 10.

Assessment: Not achieved. The principle is sound, but the Ō2NL plan does not provide for HDC's planned strategic cycleway connections across the corridor.

*Enhancing **access** and opportunities for people of the Horowhenua, as part of the region, district and local community:*

— *Supporting Levin **growth** and planned urban development— increasing Horowhenua's accessibility as a place to live*

Assessment: Only partly achieved. At a strategic regional scale, the Ō2NL project enhances accessibility to Levin. But at a local scale, the Ō2NL plan does not adequately support HDC's planned major area for growth within Levin.

— *Providing for walking and cycling journeys with different purposes for all ages considering the likely sequence of destinations for **locals and visitors***

Assessment: Only partly achieved. The proposed shared path provides new and potentially excellent north south movement. However the *Volume III Drawings and Plans* do not, other than maintaining the existing connection along Queen Street East, show all of the strategic cycleway and walkway cross-connections necessary to connect the likely sequence of destinations for locals at Tara-Ika.

Relation to 'Bridging the Gap' Waka Kotahi Urban Design Guidelines

- 65 The proposed configuration is not consistent with Waka Kotahi's own guidelines relating to severance which are referred to at pages 16 and 17 of the CEDF. 'Bridging the Gap' Waka Kotahi Urban Design Guidelines (2013) note: "*Roads can sever communities or separate community facilities from their catchment area. Where this happens, roads can have enduring social and economic effects.*" (page vii). This proposal establishes, rather than addresses, severance.
- 66 "Bridging the Gap' also identifies 10 urban design principles, and in my opinion the proposal is not consistent with four of these identified below:
- *3.3 Integrate transport and land use*
 - *3.4 Contribute to good urban form*
 - *3.6 Avoid severing communities*

- 3.7 *Maintain local connectivity .. “local road, pedestrian and cycle connections across and along the highway especially where such links provide access to community facilities.”* An identified aim: *“provide connectivity across the road corridor, especially where the road runs between or through urban or recreational areas.”*

Relation to the New Zealand Urban Design Protocol

67 The CEDF identifies that the *“landscape and urban design principles, as integrated within the project are consistent with the New Zealand Urban Design Protocol; to which Waka Kotahi is a signatory”*.²⁶ The Protocol establishes high-level intentions for good quality urban design. However, the proposed NoR configuration at Tara-Ika fails to address these intentions as identified below.

- a. Successful towns and cities are liveable: *“Liveable places provide choices in housing, work, transport and lifestyle opportunities. They are easy to move around, with accessible services and a variety of integrated transport options that include walking and cycling.”* (Protocol, page 13)

The absence of the planned street connection and walking and cycling connections between Tara-Ika and the adjoining urban area to the west contradicts this intention.

- b. *“Environmentally responsible”, including “minimising energy use, and maximising the efficiency of land use and infrastructure”*. (Protocol, page 14)

The movement inefficiencies introduced by absence of the EWA and strategic cycleway connections across the corridor is inconsistent with environmental responsibility as defined by the Protocol.

- c. Context: *“Quality urban design ...ensures incremental development contributes to an agreed and coherent overall result.”* (Protocol, page 18)

Omitting to draw or respond effectively to Tara-Ika contradicts this and is not consistent with the direction provided by PC4 (including directive provisions that are not subject to appeal). From an urban design perspective, given the urban context through which it passes and which it must respond to by design, neither is the overall result coherent.

²⁶ Volume II AEE, Appendix Three: CEDF, page 10.

- d. Shared vision and good governance: *“A successful town or city has a clear sense of direction and a widely shared vision. There is genuine engagement with communities and leadership at many levels. Creative ideas are encouraged and freely exchanged between people and government.”* (Protocol, page 16)

The NoR does not describe a shared vision. While there has been discussion with HDC, the NoR neither includes nor responds to the Tara-Ika Structure Plan.

- e. *“Connections”* (Protocol, page 21)

Apart from at Queen Street East and Tararua Road, the Tara-Ika component of the expressway does not provide necessary east-west connections and therefore forces access constraints, will increase vehicle use and active mode travel distances. This is inconsistent with the Protocol.

- f. *“Custodianship: Quality urban design ..uses design to improve the environmental performance of infrastructure”.* (Protocol, page 23)

Absence of the E-W and strategic cycleway connections compromise the environmental performance of this infrastructure and will lead to unnecessary greenhouse gas emissions.

I. SUBMISSIONS

- 68 I have been through the summary of submissions, and those that are or may be relevant to urban design evidence are noted below.

Strategic benefit of regional connectivity

- 69 Sam Hadley-Jones (Electra Limited) supports the proposal in full because of positive impacts for Horowhenua, specifically bringing Horowhenua closer to Wellington, making the district more attractive for suburban development.
- 70 The NZ Automobile Association (#78) makes a possibly related submission in support of the Ō2NL (that it connects regions which is critical to efficiency of the national economy and social well-being and resilience of NZ. See para [7]-[8] of that submission).

71 While this is a growth benefit, it also may have implications of induced traffic, encouraging people to live further from their place of work in Wellington City and travel further by car to get there.

Cross corridor connectivity

72 Lynette Bailey (#37) supports the proposal in full with reference to “Social outcomes” and “Connectivity”.

73 Lindsay Poutama (#53) supports the enhanced connection due to the shared pathway and Adrian Gregory (S64) touches on connectivity in comparison to Otaki.

74 Kevin Daly (#48) comments regarding cycle and pedestrian access for Tararua Road and Tara-Ika (see “4” and “5”), and also comments on the ‘Liverpool Street bridge’.

75 James McDonnell Limited (#72) at Attachment 1 address the importance of the EWA and seek that this is provided as part of the Ō2NL designation, and reinforce the importance of the Strategic Cycleways:

- a. Submitter #72 at Attachment 1 also identifies *that “it is efficient and practical to include these crossings of Ō2NL within the Ō2NL Notice of Requirement, rather than through a separate process at a later date, as this will enable integration of the crossings into the design and will ensure certainty that they are provided.”* I agree on the importance of process coordination to ensure cross-connections are provided.
- b. Paul Edmond, Urban Designer (on behalf of James McDonnell Limited), has provided further comment on the masterplanning work undertaken as part of PC4, and how the east-west arterial at Liverpool Street, including a crossing of the new State Highway, is essential to providing connectivity and a well-functioning urban environment in the Tara-Ika Growth Area. This is provided as Attachment 3 to submission #72. Mr Edmond notes that *“the distances between the three crossings are significant”*, and hence that the shared pedestrian/cycle bridges are required to provide connectivity between Tara-Ika and those parts of Levin to the east. I agree with these comments.

Shared pathway

76 A large number of submitters including three horse-riding advocacy groups and approximately 15 individuals support the proposal to construct a shared pathway

alongside the highway but do not support that it excludes horse riders. They consider it should be a 'multi-use' pathway. From an urban design perspective, it is generally desirable in principle to provide for multiple non-motorised users where these uses are compatible. Whether horse riding is compatible with the planned cycle and pedestrian use and how any shared multi-use path may be configured will need to be addressed by others.

J. COMMENT ON PROPOSED CONDITIONS

Certainty of delivery of a suitably integrated and high quality outcome

- 77 In the NoR, Waka Kotahi propose that the suite of conditions will include the following:
- *an interactive and collaborative approach has been, and will continue to be, used to develop the design and the methods to avoid, remedy or mitigate actual and potential effects;*
 - *Waka Kotahi will maintain on-going engagement with the Project Iwi Partners, the Councils, directly affected parties, other key stakeholders and the community;*²⁷
- 78 These are desirable intentions, however:
- a. Given Waka Kotahi's approach to date which has failed to effectively recognise and provide for cross-connections at Tara-Ika, it is unclear whether an effective integrated and collaborative approach has actually been followed.
 - b. Valid engagement includes responsiveness to matters raised by Council. To my knowledge, in relation to urban design matters, there has been no response to feedback given, and at this point in time before Workshop 3 and based on this NoR, no apparent responsiveness in design. I understand that there are discussions underway between HDC and Waka Kotahi, to which I am not privy, and I support those continuing.
 - c. There is no robust monitoring and certification pathway currently proposed, and this should be included.
 - d. As currently proposed, the conditions are written with no obligation for Waka Kotahi to make any design refinements in response to the outcome of any engagement process that may be required.

²⁷ Volume II AEE, Section 61, page 314

79 Further work is required to ensure conditions, designation and general arrangement plans and the CEDF adequately address the above issues.

Coordination of cross-connections with Ō2NL design and construction

80 From my experience with project implementation and from a practical feasibility and cost perspective, the ideal would be that the design and construction of the Tara-Ika PC4 Structure Plan cross-connection bridges is concurrent and coordinated with construction of the Ō2NL project. This will lead to cost savings, and potentially a single lead contractor responsible for the entire project would avoid the contractual complications of multiple parties on the same site.

81 Conversely, I consider that if provision is not made for these links in the design of the project and if their construction is not coordinated with expressway construction, there is a high risk that they may not be provided. The process complication and cost may be insurmountable.

82 Should the development of Tara-Ika begin before construction of the Ō2NL, I consider it desirable but not essential that the PC4 strategic connections across the Ō2NL route are provided temporarily and at-grade, prior to construction of the Ō2NL.

K. CONCLUSION

83 My overarching conclusions are recorded in the Executive Summary. I note again that I welcome the opportunity to caucus with other relevant experts, particularly in relation to discussing amendments to the conditions that would address the concerns I have raised in this report. I also welcome the opportunity to attend mediation with the submitters and parties as the direct referral process progresses, and to be apprised of the outcome of discussions between Waka Kotahi and HDC in due course.



Graeme McIndoe

28 April 2023

APPENDIX 11

CONTAMINATED LAND – SARAH NEWALL

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of applications by Waka Kotahi NZ Transport Agency (Waka Kotahi) to Manawatū-Whanganui Regional Council and Greater Wellington Regional Council for resource consents, and notices of requirement to Kāpiti Coast District Council and Horowhenua District Council for a designation, to enable the construction, operation, maintenance and improvement of new state highway, shared use path and associated infrastructure, between Taylors Road (to the north of Ōtaki) and Stage Highway 1 north of Levin.

**COMBINED SECTION 87F and 198D REPORT OF SARAH NEWALL
– CONTAMINATION**

**MANAWATŪ-WHANGANUI REGIONAL COUNCIL, GREATER
WELLINGTON REGIONAL COUNCIL, KĀPITI COAST DISTRICT
COUNCIL AND
HOROWHENUA DISTRICT COUNCIL**

28 APRIL 2023

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A. OUTLINE OF REPORT

1. This report, required by section 87F and 198D of the Resource Management Act 1991 (“**RMA**”) addresses site contamination matters with regard to the resource consent applications lodged with the Manawatū-Whanganui Regional Council (“**Horizons**”) and Greater Wellington Regional Council (“**GWRC**”) and the notices of requirement (“**NoRs**”) lodged with the Kāpiti Coast District Council (“**KCDC**”) and Horowhenua District Council (“**HDC**”) (the “**District Councils**”).
2. The NoRs and resource consent applications lodged by Waka Kotahi NZ Transport Agency (“**Waka Kotahi**”) provide for the construction, operation, maintenance and improvement of a new state highway and shared use path and associated infrastructure, between Taylors Road (to the north of Ōtaki) and State Highway 1 north of Levin. The project is known as the Ōtaki to North of Levin Highway Project (the “**Ō2NL Project**”).
3. While this report is pursuant to section 87F and 198D of the RMA, I have in accordance with section 42A(1A) and (1B) attempted to minimise the repetition of information included in the application and where I have considered it appropriate, adopt that information.

B. QUALIFICATIONS / EXPERIENCE

4. My name is Sarah Helen Newall. I am a Site Contamination Specialist with HAIL Environmental Limited. I have been in that position since February 2021.
5. I hold a Bachelor of Science with Honours (Geology) from Victoria University of Wellington and am certified through the Environmental Institute of Australia and New Zealand (EIANZ) Certified Environmental Practitioner scheme (CEnvP). I am a member of the Waste Management Institute of New Zealand (WasteMINZ) and the Australasian Land and Groundwater Association (ALGA).
6. I have over 15 years’ experience in the New Zealand contaminated land industry. Throughout that time, I have worked for clients across a broad

range of industries and disciplines, including but not limited to the oil industry, local and central government, defence, horizontal infrastructure and private developers.

7. Most relevant to the Ō2NL Project, I was the contaminated land advisor to the construction joint venture for the Transmission Gully (TG) project from 2013 to 2016, and one of the contaminated land advisors to the Waikato Expressway (Hamilton section (HamEx)) project from 2016 to 2020.
8. I regularly advise on the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (the “**NES-CS**”), including obtaining and administering NES-CS consents over large sites and corridors. This has come from my work with TG and HamEx, and also with the New Zealand Defence Force (NZDF), where I led a project to obtain site-wide NES-CS consents for both RNZAF Base Ōhakea and Linton Military Camp. These sites also hold site-wide earthworks consents from Horizons and I continue to provide site contamination advice to NZDF in the context of these and the NES-CS consents.
9. Before entering the contaminated land industry, I was a compliance officer with Hawke’s Bay Regional Council from 2004 to 2007. Part of my role with HAIL Environmental is providing regional, city and district councils with technical peer-review of site contamination matters associated with resource consent applications and compliance. I provide this service to Hawke’s Bay Regional Council, GWRC, Palmerston North City Council, and Waipa, Central Hawke’s Bay and Tararua District Councils.
10. I am familiar with the site and surrounding area. I visited the site along with other HDC, KCDC, Horizons and GWRC experts on 24 August 2022. I also resided on the Kapiti Coast between 2013 and 2016 and have driven the existing state highway often.

C. CODE OF CONDUCT

11. I confirm that I have read and agree to comply with the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note

2023. I confirm that I have stated the reasons for my opinions I express in this report and considered all the material facts that I am aware of that might alter or detract from those opinions.

12. I have addressed the following issues in this report:
 - (a) Waka Kotahi's proposed approach to addressing the contaminated land matters associated with the Ō2NL Project; and
 - (b) The adequacy of the existing contaminated land technical assessment that was lodged with the NoR and resource consent applications.
13. Statements expressed in this report are made within the scope of my expertise.
14. I have all the information necessary to assess the application within the scope of my expertise and am not aware of any gaps in the information or my knowledge.

D. EXECUTIVE SUMMARY

15. The key findings and conclusions of my report include:
 - (a) Any and all consents (both district and regional) that may be required to regulate works on contaminated land as part of the Ō2NL Project are specifically excluded from the applications.
 - (b) Therefore, all my comments on the documents reviewed only relate to the Ō2NL Project's proposed conditions.
 - (c) In my opinion, the Preliminary Site Investigation (the **PSI**) and the Technical Assessment have the following key shortcomings, which will need to be addressed before contaminated land related resource consents are applied for, outside of this current consenting and NoR process:
 - (i) The information reviewed and investigation work completed to date is unlikely to provide a complete and accurate account of potentially contaminating current and

historical land use activities over the Ō2NL Project area, because:

- i. regional council contaminated land databases will not be complete,
- ii. the reviewed aerial imagery had gaps of several decades, and
- iii. a full site walkover has not been completed, as technical experts for Waka Kotahi have not been able to access all of the land within the designation corridor as yet. In my experience, this is not uncommon at this stage of a large linear infrastructure project.

This means there are likely to be Ministry for the Environment (“**MfE**”) Hazardous Activities and Industries List (“**HAIL**”) sites that have not been identified, and therefore the list of sites requiring further investigations, as currently set out in proposed condition REW4, is likely to be too narrow, and not representative of the true number of sites to which the NES-CS and regional rules may apply.

- (ii) The risk screening system that has been used to assess the identified HAIL sites and inform the preliminary conceptual site model (“**CSM**”), does not appear to be fit for purpose.

- (d) Given these shortcomings, I am not satisfied that the PSI provides an accurate or robust conceptual site model, and therefore I do not consider it to be adequate for its intended purpose.

16. Given the above, I have a low to moderate level of confidence in the conclusions set out in Technical Assessment I – Contaminated Land (the “**Technical Assessment**”) lodged with the application. In this report

I have provided recommendations for where I see additional work as necessary.

E. SCOPE OF REPORT

17. My report focuses only on issues related to site contamination. I have set out the issues I address at paragraph 12 above.
18. In preparing this report, I have reviewed the following information:
 - (a) Technical Assessment I – Contaminated Land;
 - (b) Appendix I.1 – PSI;
 - (c) Volume II Part A: Intro and Background (**Volume II Part A**);
 - (d) Volume II Part D: Statutory Approvals Required (**Volume II Part B**);
 - (e) Volume II Part G: Assessment of Effects (**Volume II Part G**);
 - (f) Volume II Part I: Statutory Assessment (**Volume II Part I**);
 - (g) Volume II Appendix 1: Rule Assessment (**Volume II Appendix 1**);
 - (h) Volume II Appendix 5: Draft Conditions (**Volume II Appendix 5**);
 - (i) Response to request for additional information pursuant to section 92 of the Resource Management Act 1991 – HDC and KCDC (the **DC s92 response**); and
 - (j) Response to request for additional information pursuant to section 92 of the Resource Management Act 1991 – Horizons and GWRC (the **RC s92 response**).

F. BACKGROUND

19. District and regional councils have different regulatory functions and instruments with respect to site contamination matters.

20. District councils, whose role relates to the human health effects arising from site contamination, regulate specific activities on contaminated land to protect human health via the NES-CS. The activities include, but are not limited to, disturbing (and disposing of) soil and changing land use.
21. Per Regulations 5(1) to 5(7), the NES-CS applies when one or more of the specific activities is proposed on a 'piece of land', **and** where that 'piece of land' is being, has been, or is more likely than not to have been, used for activities or industries featuring on the HAIL.
22. Regional councils are concerned with the environmental effects arising from site contamination and regulate these effects through rules in regional plans. For the Ō2NL Project, relevant GWRC rules may include, but may not be limited to, rules R51, R80, R81, R82 and R83 of the proposed Natural Resources Plan ("**PNRP**"), and relevant Horizons rules may include, but may not be limited to rules 14-24 through 14-28 of the Manawatū-Whanganui One Plan ("**One Plan**").
23. Both district and regional council roles with respect to site contamination are addressed in this report.

G. REVIEW OF APPLICATION

Project and setting

24. The concept and features of the proposed Ō2NL Project are comprehensively explained in the application documents, specifically in Section 1.4 of Volume II Part A. I adopt these and do not repeat them here.
25. The current land-use setting of the NoR is also well described. As this is material to this report, an excerpt from the PSI included with the Technical Assessment is included here:¹

The existing environment within the proposed designation boundary is characterised by agricultural land uses, comprising dairy and sheep farming, extensive areas of market

¹ Ōtaki to North of Levin, Preliminary Site Investigation, prepared for Waka Kotahi, September 2022 by Stantec. Section 2.2.2, 'Current site uses', page 9.

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gardening, pockets of orchards, glasshouses, poultry farms, and a vineyard. The topography is typically gently rolling, with various streams running in a general east to west direction across the area of the proposed designation... The agricultural land is interspersed with pockets of lifestyle or rural-residential development.

Consenting approach

26. Although paragraph 5 of the Technical Assessment acknowledges the potential that contaminated land exists within the Ō2NL Project corridor, consents (both district and regional) that may be required to regulate works on contaminated land as part of the Ō2NL Project are specifically excluded from the application.

27. Regarding district council consents, Section 4.5 'Aspects and approvals not covered' of Volume II Part A, states the following:

There are future consents, authorisations and approvals that are not sought at this time and are therefore not addressed in this documentation. These include:

a. Resource consent [under the] Resource Management (National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NES-CS)...

28. Regional council contaminated land related consents are not mentioned in Section 4.5 of Volume II Part A. However, Section 19 'Resource consent' of Volume II Part D, states:

All regional resource consents required for the Ō2NL Project are being sought as part of this application, whether they are explicitly specified or not.

If, after detailed design is complete, further or different consents are required these will be sought at the time.

29. On its face, this suggests that the application purports to apply for all regional council consents. However, on review of the application, it becomes apparent that the intention of Waka Kotahi is to apply for

consents that may be required under the One Plan and PNRP at a later date.² Further, Section 19.7 of Volume II Part D states:

Waka Kotahi will undertake detailed site investigations (DSIs) including soil testing of sites traversed by the Ō2NL Project in subsequent design phases and once land access becomes available. Informed by the DSI results, if necessary Waka Kotahi will then apply for any resource consents required by the NES-CS regulations **and/or the relevant Regional Plans** [my emphasis added]. Waka Kotahi will share the results of the DSI with the relevant district and regional council when they are completed.

30. The Technical Assessment also states:³

Resource consent for activities managed under the NEC-CS and any relevant Regional Plan rules is not being sought at this stage of the process. Instead, consents will be sought, as required, in accordance with the outcomes of the recommendations in this report.

31. As I understand it, technical investigations have not been progressed by Waka Kotahi to the point that it is accurately known where the NES-CS and regional rules apply, and to what extent. This means that Waka Kotahi does not presently know what consents are required or which areas of the proposed works they would cover.
32. It appears from the excerpt from the application set out in paragraph 29 that the technical investigations have not progressed due to constraints on site access, with land acquisitions not having yet been completed by Waka Kotahi. In my experience, this is not uncommon at this stage of a large linear infrastructure project.
33. Waka Kotahi has therefore excluded site contamination consenting from the application (that is, they have simply not applied for consent under the NES-CS, or the relevant contaminated land rules of the regional

² See sections 19.2 and 19.7, 'Discharges to land and water' of Volume II Part D. The relevant rules of the One Plan or the PRNP are also not included in the summary of resource consents sought under the application.

³ At paragraph 4.

plans) and proposes to seek these approvals later, as required, once further investigations have been completed.

34. Waka Kotahi has stated through the DC s92 response that this proposed approach does not pose a material issue/risk to other disciplines' designs or the detailed design of the Ō2NL Project as a whole. Specifically, it stated:⁴

The NoR is based on a concept design to allow an envelope of effects to be assessed and consented, and the extent of the land required for the Project to be defined sufficiently for the NoRs to be given. Detailed design stages undertaken subsequent to the confirmation of the NoRs will incorporate the findings of a range of updated investigations (for example, site specific geotechnical assessments and detailed site investigations). Any material findings from the contaminated land investigation will be factored into that detailed design process.

35. Based on discussions with Waka Kotahi to date and their explanation of the proposed project design process, and experience with other new alignments (e.g. Transmission Gully), I consider it is a reasonable approach to deal with site contamination matters, both district and regional, outside the present application, once site access is possible.
36. However, while I agree in principle with the consenting approach adopted by Waka Kotahi, I have concerns with the adequacy of the investigation completed to date (the PSI). I address this in paragraphs 37 to 104 below.
37. My concerns and comments about the adequacy of the PSI are material, in that they inform the wording of conditions which will direct the process for further work.

⁴ Ōtaki to north of Levin Highway Project- – Response to request for additional information pursuant to section 92 of the Resource Management Act 1991, Waka Kotahi to Horowhenua and Kāpiti Coast District Councils, 22 December 2022, question 180, page 32.

Technical report – Preliminary Site Investigation (PSI)

38. Waka Kotahi has provided a contaminated land technical assessment as part of its application, and a PSI.⁵ The technical assessment and PSI contain more or less the same information. I did not observe any information in the technical assessment that was not in the PSI, therefore my review has focused on the PSI. Notwithstanding, any comments I provide will also apply to the Technical Assessment.
39. The requirements of a PSI are set out in MfE's Contaminated Land Management Guideline No. 5 'Site Investigation and Analysis of Soils', revised 2021 ("**CLMG5**") and 1 'Reporting on contaminated sites in New Zealand', revised 2021 ("**CLMG1**").
40. Section 2.2 of CLMG1 states the purpose of a PSI, which is to understand:
- (a) whether there has been (or there is more likely than not to have been) a potentially contaminating land use,
 - (b) the nature and source of probable contaminants,
 - (c) the possible locations of contamination,
 - (d) known or potential exposure pathways by which identified receptors could be exposed to the contaminants under current or know proposed future land use,
 - (e) known or potential human and ecological receptors that could be exposed to contaminants.
41. In addition, a PSI will provide an initial assessment of the applicability of relevant contaminated land legislation and/or district and regional rules, setting out further work required, if necessary, to refine resource consenting requirements further.
42. Appendix A of CLMG1 also includes a 'Table of Contents' for a PSI. It is referenced as being associated with assessing NES-CS applicability,

⁵ Technical Assessment I: Contaminated Land.

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however, the general format as shown in CLMG1 is widely adopted for PSIs, regardless of the intended purpose.

43. My review of the PSI with this application focused on whether the purpose as per CLMG1 has been achieved, whether the necessary information has been included, and whether the PSI is adequate.

PSI review

44. The submitted PSI has identified thirty-five 'potential HAIL sites': five outside, but in the vicinity or adjacent to the proposed designation, and thirty within the proposed designation.
45. These sites were identified through reviews of GWRC's 'selected land use register' ("**SLUR**") and Horizons' 'sites associated with hazardous substances' ("**SAHS**") databases, review of current and historical aerial imagery and a partial site walkover.
46. All five sites outside the designation feature on the Horizons SAHS. Of the five, three (HAIL IDs 10, 11 and 33) were adjacent to the main designation boundary with the remaining two (HAIL IDs 34 and 35) '*near*' or '*close to*' proposed materials supply sites.
47. HAIL IDs 10, 11 and 33 were assessed as '*Low risk – Outside designation and hydraulically downgradient of works. Therefore, mobilization of contaminants to the Project unlikely*'. Based on the information presented regarding the location, scale and nature of the HAIL activities, proximities to designation/material supply site boundaries and likely groundwater flow direction, I agree that it is unlikely that contaminants from these sites (if present) may have migrated into or onto the designation in sufficient quantities that would require additional investigation.
48. However, I do note that the feature observed at HAIL ID 11 was incorrectly identified as an underground fuel storage tank, when the photographs in the report clearly identify it as a domestic wastewater treatment system, which is not a HAIL activity. It is not clear whether the fuel tanks identified in Horizons records are indeed present at the site at a different location, or whether they are no longer present.

49. HAIL IDs 34 and 35 were identified as former landfills, although HAIL ID 34 is mentioned as being listed in error in the SAHS, and HAIL ID 35 was assessed as:

Low risk – Outside material supply site boundary and hydraulically downgradient of works. This site is not to be disturbed as part of the works. The extents of the landfill is visible on site and known to the landowner.

50. Of the 30 sites within the designation, 20 were identified as market gardens (one with glass houses), 7 as orchards (one potentially with a small waste pit), one as a quarry (with fuel storage), one as a former landfill, and one as a poultry farm.
51. However, I am not satisfied that all HAIL sites within the Ō2NL Project area have been identified. I am therefore not satisfied that the PSI is complete and that it achieves the purpose of CLMG1. I elaborate on this in the following paragraphs.
52. One of the key shortcomings of the PSI is that a full site walkover had not been undertaken.
53. Regarding the partial site walkover that was undertaken, the PSI report stated (my emphasis):⁶

... due to access constraints, it was not possible to view all horticultural or pastoral land, nor the quarry and historic landfill next to the Ōhau River, nor parts of the route that were not intersected by the existing road network, as part of the site visit.

These will be reviewed in more detail once access is granted.

54. Viewing the alignment from existing roads does not constitute a site walkover, however, the bolded sentence of the paragraph above could be read as suggesting that there is the intention to revise and update the PSI once full site access is granted.

⁶ Ōtaki to North of Levin, Preliminary Site Investigation, prepared for Waka Kotahi, September 2022 by Stantec. Section 2.2.1, 'Site inspection', page 9.

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55. On that point, HDC and KCDC asked Waka Kotahi the following question during the s 92 process:

Following the process set out in the NES-CS, and as full site walkover has not yet been undertaken, could the Applicant please comment if it would be more appropriate to first require the PSI to be revised and updated following a complete site inspection, and then require DSIs for all identified pieces of land where the PSI cannot conclude that it is 'highly unlikely that there will be a risk to human health if the change of use is made' (Regulation 8(4) and/or that the soil disturbance component cannot meet permitted activity thresholds (Regulation 8(3))?

56. Contrary to the implication in the section of the PSI quoted at paragraph 53 above, Waka Kotahi's answer was:⁷

Waka Kotahi considers that the PSI is complete for its intended purpose and does not require subsequent revision.

57. Section 3.3.7 of CLMG1 states that *'the investigation should build up a weight of evidence, from as many reliable sources as possible'*.
58. In this PSI, where a full site inspection was not complete, sites were assessed as being (potentially) HAIL or not, based on review of regional council SLUR/SAHS information, and current and historical aerial imagery. Both information sources are useful; however, they also have their limitations.
59. Section 3.1.2 of the PSI states *"for any PSI it has to be assumed that Council records may be incomplete and therefore a wider search of historical photographs is important"*.
60. I agree – in my experience, Horizons' SAHS is not comprehensive, and I would not consider it to be complete, and in that regard a 'reliable

⁷ Ōtaki to north of Levin Highway Project- – Response to request for additional information pursuant to section 92 of the Resource Management Act 1991, Waka Kotahi to Horowhenua and Kāpiti Coast District Councils, 22 December 2022, question 181, page 33.

source' of information. GWRC's SLUR is more comprehensive, however, it is still unlikely to be complete.

61. I also agree that reviewing historical aerial imagery is important. However, aerial imagery only captures features and activities that were occurring at the time an image was taken. As there are typically years or even decades between images, it is possible that HAIL features and/or activities may not have been captured at all.
62. Section 3.1.2.1 of the PSI lists the dates for images that were '*available for all or part of the route*'. They were:
- 1939-1942
 - 1961-1965
 - 1970-1979
 - 1999-2000
 - 2010-2011
 - 2015-2016
 - Drone footage from March 2021
63. This shows that there were some decades where no aerial images were reviewed, including (more or less) the 1940s, 1950s, 1980s, 1990s and 2000s.
64. Aerial imagery available through Retrolens does not appear to have been accessed and reviewed.⁸ As this is readily available information, this should have been done. To illustrate, I found imagery on Retrolens for HAIL ID 1 (45 South Manakau Road) from the late 1940s through to the late 1980s, which would supplement the imagery already reviewed. It is likely that similar imagery is available for the whole alignment.
65. In my opinion, the likely gaps in the SLUR/SAHS, and in the aerial images reviewed means Waka Kotahi have not provided the '*weight of*

⁸ Retrolens Historical Image Resource: retrolens.co.nz.

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evidence, from as many reliable sources as possible, as required by CLMG1. The issues are compounded by the fact that a full site walkover was not completed by Waka Kotahi's technical advisors.

66. An example of uncertainty within the PSI is evident at paragraph 71 of the Technical Assessment, which states: 'Sheep dips may possibly be present on some farm properties through which the Ō2NL Project passes, although there is no record of these in either Horizons or GWRC records'.
67. In my experience, sheep dips are rarely included on regional council HAIL records, unless that particular council has undertaken a specific sheep dip identification project, which to the best of my knowledge, Horizons and GWRC have not.
68. In any case, an absence of regional council information does not indicate that sheep dips are not present. Sheep dips can be significant sources of contamination; HAIL Environmental has investigated dips with effects over as much as a hectare. The absence of this information is a potentially significant uncertainty, which is indicative of the general lack of clarity about the activities undertaken on the Ō2NL Project land due to a full site inspection not having been completed at this stage of the process.
69. Considering the information gaps in the PSI, I am not confident that the 35 'potential HAIL sites' identified to date (30 within the proposed designation and 5 adjacent) are in any way a complete account of the potential HAIL sites over full extent of the Ō2NL Project.
70. This is an important consideration given the scope of proposed condition, REW4. This condition specifically lists the sites requiring further investigation, based on the findings of the PSI. My concern is that if potential HAIL sites have not been identified through the PSI process due to gaps in the investigation, then the sites that require further investigation listed in condition REW4 may also be incomplete.
71. As a result, there is a risk that there could be HAIL sites that are not identified, investigated, or appropriately consented (and managed according to consent requirements) for the Ō2NL Project.

72. Section 3.3 of the PSI 'Unknown Sites', recognises that previously unidentified HAIL sites or areas of contamination may be encountered during the Ō2NL Project. In such instances, it suggests an unexpected discovery protocol is followed, which may involve investigation, sampling and analysis of the material encountered.
73. I agree that having an unexpected discovery protocol is important: and it is standard practice for large-scale earthworks projects such as the Ō2NL Project.
74. However, having an unexpected discovery protocol is not a substitute for identifying HAIL sites through site investigations. Rather, that protocol should be in place to address the sites/areas that realistically could not be identified through a PSI and/or DSI, such as historical small-scale farm tips, which may not have a surface expression and may not be visible on aerial photographs.
75. Therefore, in my opinion, further work is required to achieve greater certainty about the presence and location of HAIL sites within the Ō2NL Project corridor. Currently, the PSI is incomplete and should be revised (or updated through evidence) following additional work, not least a full site walkover.
76. Paragraph 21 of the Technical Report states the following:
- The presence of asbestos – cement sheet roofing material has been identified at one site and the removal of this material will need to be managed by a licensed operator. I recommend that all buildings built prior to 1990 that are to be removed as part of the works be inspected for the presence of asbestos by a suitably qualified person prior to being demolished.
77. I agree that an asbestos survey should be completed by a licensed asbestos surveyor of all buildings within the Ō2NL Project area build prior to 1990, that will be removed or demolished as part of the Project.
78. Further to this, I recommend that the findings of the asbestos survey are incorporated into the revision of the PSI or produced in evidence, as HAIL category E1 includes 'sites with buildings containing asbestos products known to be in a deteriorated condition'.

Risk screening methodology

79. Section 4.1 of the PSI describes how a risk screening system (“**RSS**”) has been used to inform the CSM. The RSS ranks the 35 potential HAIL sites identified to date as either ‘low’, ‘low-medium’, ‘medium’, ‘medium high’ or ‘high’ risk, based on *‘the likelihood and the nature of contamination existing at the site from a particular activity’*. The intention of the risk ranking is *‘to be a prioritisation tool to direct future site investigations and soil management during soil disturbance’*.
80. Section 4.1 of the PSI states that the RSS used ‘has been based on the Ministry for the Environment Contaminated Management Guideline No 3: ‘Risk Screening System’.
81. I am familiar with this guideline, and know that for each site, ‘scores’ associated with specific site information are entered into the tool (which is often in spreadsheet form). This requires the user to know certain information about the site and potential contaminants, including (but not limited to) toxicity, quantity and mobility of contaminants, whether contaminants are contained, what the surface cover is, soil permeability and whether groundwater is used.
82. Without completing site inspections, and with limited information about the sites, much of the information required for the assessments would not be known, and therefore many assumptions would have needed to have been made.
83. The PSI does not contain the RSS spreadsheets for the sites, or any workings or assumptions made, so I have not been able to review and comment on these.
84. HDC and KCDC asked Waka Kotahi the following question during the s 92 process:

The PSI states that the risk screening system is based on the Ministry for the Environment (MfE) Contaminated Management Guideline No 3: ‘Risk Screening System’. Could the Applicant please provide the template and workings of the risk screening, including the parameters adopted and the inputs?

85. Waka Kotahi's response was:⁹

This information is not required to better understand the nature or extent of effects given that no applications have been made during this process. This is a technical approach matter that can be discussed by the relevant experts during and as part of the preparation of any future application for resource consent under the NES-CS.

86. I agree that the suitability or not of the RSS is not a strictly a matter for these applications, however, it is something that will need to be addressed as part of the contaminated land work that is required to determine future consenting requirements.

87. Using the RSS, the 35 identified HAIL sites have been ranked as follows:

Low: 22

Low-medium: 4

Medium: 7

Medium-high: 1

High: 1

88. The 'medium', 'medium high' and 'high' risk sites comprise the list of sites set out in proposed condition REW4, which require further investigation. The eight 'medium' and 'medium-high' risk sites were all market gardens or other horticultural land. One also involved asbestos containing building materials. The one 'high' risk site was a suspected landfill.

89. Further investigation of the remaining 26 'potential HAIL sites' which are ranked as 'low' or 'medium low' risk has not been recommended in the PSI. Although it is not explicitly stated in the PSI, following the process proposed by Waka Kotahi effectively means that no further

⁹ Ōtaki to north of Levin Highway Project – Response to request for additional information pursuant to section 92 of the Resource Management Act 1991, Waka Kotahi to Horowhenua and Kāpiti Coast District Councils, 22 December 2022, question 182, page 33.

consideration of the NES-CS or regional rules is considered necessary for these sites.

90. Many of the 26 sites ranked 'low' or 'low-medium' risk were market gardens and orchards, assessed as HAIL category A10 'Persistent pesticide bulk storage or use, including sports turfs, market gardens, orchards, glass houses or spray sheds'.
91. The justification for the ranks given to these sites was that they were established 'post 1980' or 'post 2000'. The PSI does not elaborate further on why market gardens and orchards established post-1980/2000 are considered 'low' or 'low-medium' risk, however, I have assumed it is because persistent pesticides such as DDT had been phased out by this time and so are unlikely to be present in soils at the sites.
92. If this is the case, and if this does not factor in any other HAIL activities being or previously being present, it is reasonable to consider that soils in more modern market gardens and orchards are unlikely to contain contaminants such as DDT at the same concentrations as similar sites established in, say, the 1950s.
93. However, while this may mean the risk to human health is low on these sites, the same cannot necessarily be said for risk to the environment.
94. Copper-based sprays are routinely applied to modern-day orchards and market gardens. Copper, although not a human health contaminant, does persist in soil and is ecotoxic.
95. MfE has recently released the document 'Hazardous Activities and Industries List guidance, Identifying HAIL land'. Commentary regarding HAIL category A10 includes the following:

This category is intended to apply to any land that has been subjected to the use of persistent pesticides, or where persistent pesticides have been stored in bulk. The category includes specific activities, namely sport turfs, market gardens, orchards, glass houses or spray sheds. However, the category is defined by the bulk storage of persistent pesticides and their use. Plant production, including viticulture, silviculture and

horticulture, typically involves the application of pesticides to reduce crop damage, the characteristics of which may include toxicity, ecotoxicity and, in some cases, persistence in the environment. Therefore, careful consideration of the likelihood of contamination should be given where persistent pesticides have been used at sites other than those listed above. **Orchards that have only ever used copper-based chemicals would be captured by this activity. While not toxic to humans, copper can be toxic to organisms in water or soil** [my emphasis added].

96. 'Toxicity to organisms in water or soil' is otherwise known as 'ecotoxicity'.
97. Therefore, it is possible that sites that have been ranked as 'low' or 'low-medium' risk (and therefore assessed as not requiring further investigation) may actually require consideration with regard to regional plan rules, including (but not limited to) rules 14-26 to 14-28 of the One Plan.
98. For example, rule 14-27 'Discharges of contaminants onto or into land that will not enter water', which may be relevant in the context of earthworks and movement/re-use of material within the Ō2NL Project, contains the following condition:

The discharge must not cause any increase in the concentration of **hazardous substances** [my emphasis added] or pathogenic organisms on or in any land.
99. The One Plan defines 'hazardous substance' as including, among other things, ecotoxicity.¹⁰ These effects are not currently considered through the RSS. Therefore, in my view, the RSS appears to be rather a blunt instrument, without the nuances it needs to accurately determine applicability of the NES-CS and regional plan rules.
100. In my opinion, there is no need to use the RSS at all.

¹⁰ Horizons Regional Council One Plan, Glossary: 'Hazardous Substances', <https://www.horizons.govt.nz/publications-feedback/one-plan/glossary/glossary>.
Section 87F and 198D Report – Ōtaki to north of Levin Highway Project (Ō2NL Project)

101. The framework for assessing NES-CS applicability is set out in the NES-CS itself, without the need for adopting a separate RSS. In summary, the process is as follows:

- (a) If the PSI determines it is 'more likely than not' that a site (or part thereof) has had HAIL use(s), the NES-CS will apply to those HAIL areas, referred to as 'pieces of land'.
- (b) Where a 'change of land use' is proposed on a 'piece of land', if the PSI determines 'it is highly unlikely that there will be a risk to human health if the activity [change of land use] is done to the 'piece of land', the activity is permitted. If this test cannot be met, then further assessment, through a detailed site investigation (DSI), will be required to determine ongoing applicability of the NES-CS.
- (c) Where 'soil disturbance' is proposed on a 'piece of land', there are thresholds associated with matters such as disturbance and removal volumes, and time. If these can be met, the activity [soil disturbance/removal] is permitted. It is a reasonable assumption that the permitted activity thresholds will not be met for 'pieces of land' within the Ō2NL project, therefore further assessment of the 'pieces of land', through a DSI, will be required to determine ongoing applicability of the NES-CS.

102. Assessing the applicability of the relevant rules of the regional plans requires understanding of:

- (a) site use and history,
- (b) the specific wording and intent of the rules, including definitions of words/terms used in the rules, and
- (c) the proposed works (earthworks, cut to fill, plans for soil movement/re-use/disposal etc).

PSI review summary

103. In summary and in my opinion, the key shortcomings of the PSI are:
- (a) The information reviewed and investigation work completed to date is unlikely to provide a complete and accurate account of potentially contaminating current and historical land use activities over the Ō2NL Project area, because:
 - (i) regional council SLUR/SAHS databases will not be complete,
 - (ii) the aerial imagery reviewed had gaps of several decades, and
 - (iii) a full site walkover was not completed.

This means that there are likely to be HAIL sites that have not been identified. The list of sites requiring further investigations, as currently set out in proposed condition REW4, is therefore likely to be too narrow, and not representative of the true number of sites to which the NES-CS and regional rules may apply.

- (b) The RSS that has been used to assess the HAIL sites that have been identified and inform the CSM, does not appear to me to be fit for purpose. For example, it deems some sites 'low' risk and not requiring further investigation/consideration when these sites may actually have relevance when considering the regional plan rules.
104. Given these shortcomings, I am not satisfied that the PSI is adequate or accurate in the context of CLMG1, and it does not provide an accurate or robust CSM.

H. PROPOSED CONDITIONS

105. Waka Kotahi has proposed a condition (REW4) that sets out a proposed process for addressing site contamination matters moving forward.

106. REW4(a) lists 9 sites where, based on the findings of the PSI, Waka Kotahi proposes to complete detailed site investigations (DSI) when site access allows.
107. In my opinion, because the PSI is incomplete, the list of sites proposed for further investigation in REW4(a) may also be incomplete.
108. Therefore, to set out a clear and robust process for addressing contaminated land matters, in my opinion, REW4(a) should read as follows:

Site contamination and asbestos

- (a) Before earthworks and land disturbance authorised by these resource consents begin, and once full access to the project designation is possible, the existing Preliminary Site Investigation (PSI) will be revised based on a full site walkover, and the requirements of clauses b) – g) will be met.
- (b) The revised PSI will be completed and reported on in accordance with the Ministry for the Environment (MfE) 'Contaminated Land Management Guidelines (CLMG) Nos. 5: Site Investigation and Analysis of Soils' and 1: Reporting on Contaminated sites in New Zealand (CLMG5 and CLMG1, both revised 2021).
- (c) The revised PSI will identify the sites within the project designation (and any other sites that will be disturbed as part of the project) requiring further investigation (i.e., detailed site investigation (DSI)) to assess and satisfy consenting requirements under the relevant regional plans and/or the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (the NES-CS).
- (d) The revised PSI will be informed in part by an asbestos survey, which will be completed by a licensed asbestos surveyor, of all buildings constructed before 1990 within the Ō2NL project corridor, which will be

removed, demolished or disturbed in any way as part of the works.

- (e) The revised PSI will be provided to GWRC, Horizons, KDCD and HDC before the DSI required by clause c) is undertaken.
- (f) The DSI required by clause c) will be completed and reported in accordance with CLMGs 5 and 1 and will also confirm the following:
 - (i) the resource consents required for the project under the relevant regional plans and the NES-CS,
 - (ii) the assessment criteria either adopted or derived for the project,
 - (iii) further phases of work required before project works begin, including, but not necessarily limited to additional investigation and/or remediation.
- (g) Following the completion, and based on the results of the DSI required by clause c) all resource consents identified as being required under clause d)1 will be obtained from the relevant consenting authorities.
- (h) A project Contaminated Soil Management Plan (CSMP) will be drafted for inclusion into the resource consent applications required by clause e). The CSMP will be produced in accordance with CLMG1.
- (i) If required, a Remedial Action Plan (RAP) will be provided with the resource consent applications required by clause e). The RAP will be produced in accordance with CLMG1.

109. Finally, I note that REW4 is listed as a regional council condition and there is no equivalent in the district council condition set. As outlined in this report, site contamination is a relevant matter for both district and

regional councils, so in my view REW4 should sit in both the district and regional council condition sets.

I. SUBMISSIONS

110. Only 1 submission addresses contaminated land matters – Submission 49 from Karen and Stephen Prouse.
111. Section 12 of that submission under the heading ‘contaminated land’, requests that the property at 1015 Queen Street East is added to the list of sites in condition REW4, that require further investigation. This is based on an alleged ‘large asbestos shed - previously painted with a high possibility of contaminated soil’.
112. The revision to condition REW4 I have proposed above will ensure that an asbestos in buildings survey is completed across the whole Ō2NL project corridor, with the findings incorporated into a revision of the PSI, which will in turn be used to determine further investigations. This should address the issues raised by this submission.

Sarah Helen Newall CEnvP

28 April 2023

APPENDIX 12

AIR QUALITY – PETER STACEY

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of applications by Waka Kotahi NZ Transport Agency (Waka Kotahi) to Manawatū-Whanganui Regional Council, Greater Wellington Regional Council for resource consents, and notices of requirement to Horowhenua District Council and Kāpiti Coast District Council, to enable the construction, operation and maintenance of a new state highway, shared use path and associated infrastructure, between Taylors Road (to the north of Ōtaki) and Stage Highway 1 north of Levin.

SECTION 87F and 198D REPORT OF PETER WARWICK STACEY

AIR QUALITY

MANAWATŪ-WHANGANUI REGIONAL COUNCIL, GREATER WELLINGTON REGIONAL COUNCIL, HOROWHENUA DISTRICT COUNCIL AND KĀPITI COAST DISTRICT COUNCIL

28 APRIL 2023

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A. OUTLINE OF REPORT

1. This report, required by section 87F and 198D of the Resource Management Act 1991 ("**RMA**"), addresses the potential effects of discharges to air arising from the activities the subject of resource consent applications lodged with Manawatū-Whanganui Regional Council ("**Horizons**") and Greater Wellington Regional Council ("**GWRC**"), and notices of requirement ("**NoRs**") lodged with Horowhenua District Council and Kāpiti Coast District Council (the "**District Councils**"), respectively.
2. The NoRs and resource consents applied for by Waka Kotahi NZ Transport Agency ("**Waka Kotahi**") are required to authorise the construction, operation and maintenance and improvement of a new state highway, shared use path and associated infrastructure between Taylors Road (to the north of Ōtaki) and State Highway 1 north of Levin. The project is known as the Ōtaki to North of Levin Highway Project (the "**Ō2NL Project**").
3. In preparing this report, I have relied on the expert advice from the following experts advising Horizons and GWRC:
 - (a) James Lambie – Terrestrial Ecology, and
 - (b) Sarah Newall – Contaminated Land Discharges.
4. While this report is prepared for the purposes of sections 87F and 198D of the RMA, I have in accordance with sections 42A(1A) and (1B), attempted to minimise the repetition of information included in the application and where I have considered it appropriate, adopt that information. For completeness, I note that I refer to the four local authorities collectively as the "**regulatory authorities**" within my report.

B. QUALIFICATIONS / EXPERIENCE

5. My name is Peter Warwick Stacey. I am the Managing Director at Air Quality Consulting NZ Limited. I have been in that position since December 2021.

6. I hold a Bachelor of Science from The University of Auckland and a Graduate Diploma in Business from Auckland University of Technology.
7. I am a Member of the Clean Air Society of Australia and New Zealand and a Certified Air Quality Professional.
8. I have more than 20 years of experience assessing air discharges from a wide range of activities. My work experience relevant to the applications includes:
 - (a) Expert witness for Agrifeeds, Glencore and ADM NZ Limited (s127 parties) as part of an appeal to the Environment Court regarding Bay of Plenty Regional Council's Plan Change 13. As part of this project, I undertook an independent assessment of the dust effects from bulk handling of stock food material. This information was then presented as evidence before the Court (2020-2022).
 - (b) Expert witness for Waikato Regional Council as part of a direct referral application to the Environment Court in relation to Waka Kotahi's State Highway ("**SH**") 1 / SH29 Intersection Upgrade Project at Piarere. As part of this work, I reviewed Waka Kotahi's air quality assessment and prepared and presented evidence before the Court (2022).
 - (c) Air Quality Assessment for Waka Kotahi in relation to the Peka Peka to Ōtaki ("**PP2Ō**") expressway project. As part of this project, I was responsible for undertaking atmospheric dispersion modelling of transport emissions and reporting the findings (2012-2014).
 - (d) Expert witness for Doug's Opuā Boatyard, presenting evidence before the Environment Court as part of an appeal against Northland Regional Council's decision to decline to grant an air discharge consent. As part of this work, I assessed dust and odour emissions from boatyard activities and determined the potential effects on the adjacent reserve, public walkway and nearby residential properties (2019-2022).

- (e) Air quality delivery work plans for various stages of the City Rail Link works, including the design and implementation of a monitoring programme to determine whether works are causing significant nuisance dust effects (2018-2020).
 - (f) Air quality assessment of emissions from Ballance Agri-Nutrient's fertiliser manufacturing plant in Mount Maunganui. This project required a detailed study of emissions using atmospheric dispersion modelling and empirical analysis of monitoring results (2015-2019).
 - (g) Air quality assessment for Wellington International Airport's Runway Extension Project and development of appropriate dust mitigation measures (2017).
 - (h) Air quality assessment to support the application to expand the Brookby Quarry, where fugitive dust emissions were the primary pollutant of concern (2013-2014).
9. I am skilled in using a range of atmospheric dispersion models, such as CALPUFF/CALMET, TAPM, AERMOD, GRAL, CALROADS, LandGEM and AUSPLUME) and have applied these skills to air quality assessments for a broad range of clients.
10. In addition to the above, since 2010 (13 years), I have been responsible for obtaining air discharge consents for a large number of different activities within New Zealand.
11. I have been engaged by the regulatory authorities to provide air quality expertise in reviewing the NoRs and resource consent applications prepared by Waka Kotahi in relation to the construction and operation of the Ō2NL Project.
12. I am familiar with the site and surrounding area. I visited the site along with other Horizons and GWRC experts on 3 August 2021. I have also visited sections of the project alignment as part of my previous involvement with the PP2Ō Project.

C. CODE OF CONDUCT

13. I confirm that I have read and agree to comply with the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023. I confirm that I have stated the reasons for my opinions I express in this report, and considered all the material facts that I am aware of that might alter or detract from those opinions.
14. I have addressed the following issues in this report:
- (a) The potential air quality effects on the surrounding environment relating to discharges from the construction and operation of the Ō2NL Project;
 - (b) A review of the air quality assessment provided by Waka Kotahi and a summation of the effects of the proposal;
 - (c) A review and provision of amendments to the resource consent conditions proposed by Waka Kotahi; and
 - (d) Submissions as they relate to issues concerning air quality.
15. Statements expressed in this report are made within the scope of my expertise, except where I rely on the technical advice which I have referred to in paragraph 3 of this report.
16. I have all the information necessary to assess the application within the scope of my expertise and am not aware of any gaps in the information or my knowledge.

D. EXECUTIVE SUMMARY

17. The key conclusions of my report include:

Effects from Construction Activities

18. There are approximately 400 properties located within 200 m of the Ō2NL Project Area that have the potential to be affected by dust from construction activities.

19. Properties between 50m and 150m of the Ō2NL Project area have the greatest potential to be affected by dust, if the dust control measures recommended in the Air Quality Assessment are not implemented. For properties within 50m of Ō2NL Project areas, even with the use of these dust control measures there is the potential that residual dust effects at these properties will be such that residents are likely to notice increased dust levels and potentially be annoyed. Without understanding the proposed dust control measures for the construction phase of the Ō2NL Project, it is not possible to conclude that implementation of the Dust Management Plan will effectively mitigate the potential dust effects on the nearby properties.
20. To ensure certainty around the level of effect anticipated by the Air Quality Assessment (and therefore application), I am of the opinion that the conditions should be strengthened so as to provide for an appropriate level of air quality effect(s) across all phases of the Ō2NL Project. Consequently, I have recommended a number of changes to the resource consent conditions. In my view, these changes will provide a greater level of certainty that adverse effects on the environment can be mitigated. These recommendations include:
- (a) A requirement to undertake dust monitoring at high-risk locations (i.e. within 50m of dwellings or crops sensitive to dust,¹ where significant dust could be generated from the Ō2NL Project).
 - (b) Dust monitoring triggers used to instigate investigations and implement contingency measures.
 - (c) A requirement to upgrade roof-collected drinking water systems for properties within 200m of the Project Area.
 - (d) Development of a procedure to undertake regular visual dust inspections and identify triggers for the implementation of appropriate remediation activities, such as regular house cleaning, laundry services etc.

¹ I consider that "sensitive crops" be defined as either: 1) crops where dust could adversely affect pollination or 2) crops that cannot be easily 'washed' and where the presence of visible dust is likely to adversely affect their market value when sold.

Effects from the implementation of the Ō2NL Project

21. It is estimated that there will be a reduction in concentrations of air contaminants as a result of the operational stage of the Ō2NL Project for most locations. For areas within 200m of the Ō2NL Project, there is predicted to be a relatively small increase in the ambient concentration of air pollutants as the Ō2NL Project moves closer to receptors. The concentrations of air pollutants at these locations are predicted to be below the relevant human health air quality assessment criteria, although concentrations are, however, generally predicted to reflect minor increases in areas located within 200m of the Ō2NL Project.
22. No mitigation measures have been proposed as part of the implementation of the Ō2NL Project and I agree that mitigation is not necessary.
23. Overall, I consider that the effects from vehicle emissions associated with the operation of the Ō2NL Project will have a less than minor effect.

E. SCOPE OF REPORT

24. My report focuses only on issues related to the potential effects associated with discharges to air and the necessary control measures to minimise the effects of these discharges. It covers the following topics:
 - (a) Project Background;
 - (b) Receiving Environment;
 - (c) Regulatory Framework;
 - (d) Assessment of the Potential Effects from the Ō2NL Project;
 - (e) Draft Construction Air Quality Management Plan;
 - (f) Resource Consent Conditions; and
 - (g) Submissions.
25. I note that the management of discharges of contaminants to air associated with the construction and operation of the Ō2NL Project will

be subject to the provisions of the RMA. The Manawatū-Whanganui One Plan ("**One Plan**") and the Greater Wellington Proposed Natural Resources Plan ("**PNRP**") set out the objectives and policies of Horizons and GWRC in relation to discharges to air. Similarly, the Kapiti Coast District Plan and Horowhenua District Plan contain provisions regarding the management of dust and odour beyond the boundary. Mr Curtis describes the plan requirements in his Air Quality Assessment for Waka Kotahi.² Mr St Clair and Ms Anderson address these requirements for the regulatory authorities in their s87F and s198D reports.

F. PROJECT BACKGROUND

26. The Ō2NL Project involves the construction, operation, use, maintenance, and improvement of approximately 24 kilometres of new four-lane median divided state highway (two lanes in each direction) and a Shared Use Path ("**SUP**") between Taylors Road, Ōtaki (and PP2Ō) and SH1 north of Levin.
27. Mr Curtis from Pattle Delamore Partners Limited, has prepared an air quality technical assessment for the Ō2NL Project (the "**Air Quality Assessment**"), which assesses the potential for effects associated with discharge to air. The Air Quality Assessment also includes a range of recommended measures to mitigate the effects of the air discharges.
28. The Air Quality Assessment provides a comprehensive assessment of the potential effects from the following aspects of the project, which include:
 - (a) Discharges (primarily dust) from construction activities; and
 - (b) Discharges from vehicles once the project is operational, including nitrogen dioxide ("**NO₂**"), carbon monoxide ("**CO**"), volatile organic compounds ("**VOCs**") such as benzene, and particulate matter in different size fractions – e.g. PM₁₀ and PM_{2.5}.

² At paragraphs 92 to 107.

29. I have also reviewed and relied on the following information from Waka Kotahi:
- (a) Ō2NL Project, Volume II - Notices of Requirement for a Designation and Application for Resource Consents: Supporting Information and Assessment of Effects on the Environment, 1 November 2022 ("**AEE**").
 - (b) Ōtaki to North of Levin Highway Project Drawings Set.
 - (c) Ō2NL Project – Response to request for additional information pursuant to section 92 of the Resource Management Act 1991, 23 December 2022 (the "**Section 92 Response**").
30. My review of the NoRs and resource consent applications primarily focuses on the Air Quality Assessment and the conditions proposed by Waka Kotahi. Together, they provide all of the necessary information to assess air discharges associated with the Ō2NL Project and determine the potential for adverse effects.

G. RECEIVING ENVIRONMENT

31. The receiving environment is well described in the Air Quality Assessment.³ This description includes information on the surrounding land use, topography, meteorology and existing air quality. Having reviewed this information, I consider Mr Curtis has appropriately characterised the existing environment for the purposes of informing the air quality assessment.
32. Regarding the existing air quality, I agree with Mr Curtis' conclusion that for some of the pollutants, the estimation of ambient concentrations is likely to be conservative, i.e. an overestimate of actual concentrations.⁴ This provides for a conservative baseline to assess the change in air quality associated with the Ō2NL Project.
33. Sensitive receptors have been defined based on the definition provided in the One Plan (Policy 15-2), being a location where people or

³ At paragraphs 108 to 142.

⁴ At paragraphs 138 and 141.

surroundings may be particularly sensitive to the effects of air pollution. This definition is also consistent with the guidance provided in the Ministry for the Environment (“MfE”) Good Practice Guide for assessing discharges to air from industry (“MfE GPG Industry”) which is typically adopted when undertaking air quality assessments in New Zealand.⁵

34. In my opinion, Mr Curtis has appropriately captured within his assessment all of the receptors within 200m of the designation that fall under the One Plan and MfE GPG Industry definition. This includes the location of a number of submitters on the application in relation to air quality, including the proposed Tara-Ika residential development and locations of heritage value, such as the Prouse Homestead.
35. I also agree that it is appropriate to only include receptors within 200m of the designation boundary as effects beyond this distance are unlikely. Not only will nuisance dust settle out of the air within this distance, but mitigation is also proposed to be implemented to reduce dust discharges.

H. REGULATORY FRAMEWORK

36. The One Plan and the PNRP include guidelines for a number of air pollutants relevant to this project. The guidelines essentially reflect those set out in the National Environmental Standards for Air Quality (“NES-AQ”), MfE Ambient Air Quality Guidelines (“NZAAQG”) and World Health Organisation Air Quality Guidelines. The standards/guidelines have been reviewed and adopted as assessment criteria in Mr Curtis’ assessment in the order of priority recommended in MfE GPG Industry.
37. In addition to these regional guidelines, there are the following regional standards/objectives that are relevant to the Ō2NL Project:
 - (a) One Plan – Table C.3: In relation to dust, *“a discharge must not cause any noxious, offensive or objectionable dust beyond the property boundary.”*

⁵ Ministry for the Environment Good Practice Guide for Assessing Discharges to Air from Industry, November 2016.

(b) PNRP – Objective O41 *"The adverse effects of odour, smoke and dust on amenity values and people's wellbeing are minimised"*.

38. In terms of the One Plan standard, I consider that providing concentrations of PM₁₀ and PM_{2.5} associated with the Ō2NL Project do not cause the relevant ambient air quality criteria to be exceeded and that dust discharges do not cause nuisance effects (i.e. soiling effects on properties), therefore, this standard will be met.

39. To comply with the PNRP objective, air discharges would also need to comply with the ambient air quality assessment criteria identified in Mr Curtis' assessment and not cause nuisance effects.

40. In my view, the requirements of the One Plan and PNRP are captured by proposed resource consent condition, RAQ1(a). This condition provides:

Discharges to air from works authorised by these resource consents must not cause noxious, dangerous, offensive or objectionable effects at any point beyond the boundary of the Project Area.

41. I note that the "Project Area" is defined as *"the area within the boundaries of the proposed designations and immediate surrounds"*, which is consistent with other similar projects. In my view, this is appropriate to describe the Ō2NL Project boundary.

42. The Horowhenua District Plan and Kapiti Coast District Plan contain a variety of policies and objectives in relation to air quality. The following are of relevance to the Ō2NL Project:

(a) Kāpiti Coast District Plan

Relevant Objective: DO-O14: Access and Transport

"To ensure that the transport system in the District:

...

4) avoids, remedies or mitigates adverse effects on land uses;"

Relevant Policy: TR-P4 Effects of Transport on Land Use/Development

"The potential adverse effects of developments, operation, maintenance and upgrading of the transport network on land use and development will be avoided, remediated or mitigated by:

...

2) *Avoiding the significant adverse effects of earthworks associated with the transport network;*

3) *Ensuring that the development will:*

a) *Minimise degradation of amenity values;*

...

h) *Avoid unacceptable levels of emissions to air"*

Relevant Policy: EW-P1: Earthworks

"Earthworks activities excluding extractive industries, the removal and replacement of underground storage tanks, and earthworks defined in and regulated by the NESPF will:

4) *be managed to ensure adverse effects on natural landforms, residential amenity values and rural character values are remedied or mitigated."*

(b) Horowhenua District Council District Plan

Relevant Objective: Land Transport – Chapter 10 - 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."

Relevant Policy: Land Transport – Chapter 10 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."

43. Similar to my approach to the regional plan requirements, I consider that the district planning objectives and policies will be met if compliance with RAQ1(a) can be achieved, with the definition of effects in RAQ1(a) sufficiently broad to cover aspects such as 'smoke' and protects effects on 'amenity' and 'character' values. Methods for, and the feasibility of, achieving compliance with RAQ1(a) are discussed further below.

I. ASSESSMENT OF THE POTENTIAL EFFECTS FROM THE Ō2NL PROJECT

44. The key findings of the Air Quality Assessment are summarised below.

Construction

45. The primary potential air discharge from the construction of the Ō2NL Project will be dust. Specifically, dust has the potential to be generated from the following sources:
- (a) stripping and stockpiling of topsoil;
 - (b) excavation of cut material;
 - (c) placement of fill;
 - (d) stockpiling of soil/cut material;
 - (e) material supply sites and stockpiling of sand and aggregate;
 - (f) traffic movements on the haul roads; and
 - (g) rehabilitation of completed areas.
46. Overall, Mr Curtis has determined that the Ō2NL Project has the potential to cause nuisance dust emissions over a wide area due to the scale of earthworks required and their spatial extent. Key findings from his assessment include:

- (a) The receiving environment is likely to have a high sensitivity to dust-soiling effects. This classification is due to the relatively large number of people close to the proposed alignment (as outlined in Table C.22 of the Air Quality Assessment).⁶
- (b) There are approximately 400 properties determined to be within 200m of the designation boundary. Mr Curtis' assessment has been undertaken on the basis that Waka Kotahi will acquire all properties within the designations.
- (c) Properties beyond 200m of the designation boundary are unlikely to experience any construction dust-related nuisance as the dust settles within this distance.
- (d) Properties within 200m of the designation boundary have the potential to be affected by construction dust, with the probability of being affected increasing as the distance from the designation boundary decreases.
- (e) Properties between 50–200m from the designation boundary are unlikely to experience dust nuisance effects if the mitigation measures recommended are implemented.
- (f) Approximately 130 properties could be located within 50m of the proposed designation boundary, and unmitigated dust discharges at these properties could result in nuisance effects that have the potential to be considered offensive or objectionable. The recommended mitigations are likely to reduce these effects, however, they are still likely to be more than minor. The assumed number of properties within 50m of dust-generating activities is considered "*highly conservative*" by Mr Curtis, as he notes that it does not account for the distance between construction works and the designation boundary.⁷
- (g) Mr Curtis proposes that best practice mitigation measures will be used to control dust as proposed via resource consent conditions and a Construction Air Quality Management Plan ("**CAQMP**"),

⁶ Technical Assessment C – Air Quality, Table C.22 (page 56).

⁷ Technical Assessment C – Air Quality, paragraph 159.

which will reduce effects on properties within 50m. However, despite these measures, Mr Curtis concludes it is likely that the residual dust effects at these properties will be such that residents are likely to notice increased dust levels and potentially be annoyed.

- (h) For the 270 properties (approximately) located more than 50m (but less than 200m) from the designation boundary, the unmitigated dust nuisance effects are unlikely to be considered offensive or objectionable. Regardless, these dust emissions should be mitigated through the consent conditions and the CAQMP to ensure that residents are unlikely to notice any changes in dust levels.
 - (i) Impacts on ecological areas are considered to be "Low" to "Very Low". This is based on information provided in the Terrestrial Ecology report (Technical Assessment J of the AEE), which notes that there are no locations identified that are highly sensitive to dust.
 - (j) Mr Curtis considers there is a low potential for crops to be affected by dust. However, it is possible that some crops, or portions thereof, grown extremely close (less than 20m) to construction activities, may be downgraded (seen as less desirable) if they are seen to be "dirty".
47. I agree with the conclusions that Mr Curtis has reached, on the basis that appropriate mitigation is implemented, as I discuss in more detail below. The only aspect I am unable to support is Mr Curtis' view that the number of receptors identified within 50m of dust-generating activities is "highly conservative". I would simply classify this approach as being "conservative", as there is insufficient detail in the application to determine the exact distances between receptors and dust-generating activities.
48. To reduce the potential for dust emissions to cause noxious, dangerous, offensive or objectionable effects, a range of mitigation measures have been recommended in the Air Quality Assessment, with the intent that

they will be required through consent conditions and detailed in the CAQMP.

49. The mitigation measures proposed by Mr Curtis are summarised in the Air Quality Assessment.⁸ These measures are broadly categorised as follows:
- (a) General Measures – project-wide control measures, such as vehicle speed restrictions.
 - (b) Complaints Analysis – measures to analyse and interpret complaints and determine if dust nuisance effects have occurred. The relevant section also includes a range of measures that are recommended to rectify dust nuisance, such as house cleaning, provision of laundry services, upgrades to roof drinking water systems and temporary relocation of residents.⁹
 - (c) Odour – measures for mitigating odour discharges should odorous material be encountered during excavation activities.
 - (d) Earthworks – measures to mitigate dust during earthworks. These include a range of measures such as minimising stockpile drop heights, using vehicle wheel washes etc.
 - (e) Stockpiled Materials – measures to minimise dust associated with stockpiled material: including minimising works during high-risk meteorological conditions, restricting stockpile heights etc.
 - (f) Construction Yards – measures to minimise fugitive dust emissions from activities undertaken in construction yards. These measures include storing fine material in bunkers, use of water misting systems etc.
 - (g) Haul Roads – mitigation measures to control fugitive dust discharges as vehicles travel along the haul roads. Measures include regular haul road watering, chemical stabilisers to bind dust, and vehicle speed restrictions.

⁸ At paragraphs 276 to 288.

⁹ At paragraph 277.

- (h) Construction vehicle exhaust emissions – measures to minimise vehicle-related emissions. Measures include ensuring engines are appropriately maintained, tyres are correctly inflated and minimising haulage distances.
 - (i) Wind Monitoring – establishment of wind triggers that, if exceeded, trigger additional mitigation measures.
 - (j) Visual Monitoring – a visual monitoring programme to identify dust discharges, activities that could result in dust, and inspecting control measures to ensure that maintenance is not required.
50. As I discuss later in this report, I agree with all of the recommendations set out in the Air Quality Assessment.¹⁰ However, while I support the mitigation recommended by Mr Curtis, there is insufficient information on the specific mitigation or monitoring proposed by Waka Kotahi to demonstrate the effectiveness of the mitigation to control dust and odour effects. I discuss this in greater detail below.

Implementation

51. The Air Quality Assessment includes a combination of screening-level and complex road traffic dispersion modelling to assess the change in air quality associated with vehicle emissions. Predicted ambient concentrations of the principal air pollutants related to vehicle emissions have been compared against the standards and guidelines contained in the NES-AQ and NZAAQG.
52. The findings of this assessment show reductions in the concentration of vehicle air pollutants in the township of Ōhau, along the existing SH1 and the Levin town centre. This reduction is primarily related to reduced traffic volumes along the existing SH1 and where the highway passes through Levin.
53. For areas within 200m of the Ō2NL Project, there is predicted to be a relatively small increase in the ambient concentration of air pollutants as the Ō2NL Project moves closer to receptors. The concentrations of air

¹⁰ At paragraphs 276 to 288.

pollutants are predicted to be below the relevant human health air quality assessment criteria, although I note that concentrations are generally predicted to reflect minor increases in areas located within 200m of the Ō2NL Project.

54. No mitigation measures have been proposed by Mr Curtis to minimise the effects of vehicle emissions, as ambient concentrations are predicted to be well below levels that could cause adverse effects.

J. PRE-LODGEMENT REVIEW

55. During August 2022, prior to the lodgement of the application, I was provided with the opportunity to provide comments on the draft Air Quality Assessment. In response, Mr Curtis updated the report to reflect the majority of my recommendations. As a result, there are limited areas where I disagree with either the assessment methodology, assessment criteria, technical parameters adopted, the majority of the recommended mitigation measures or the overall findings of the assessment.
56. I generally agree with the statement at page 8 of the Air Quality Assessment that Mr Curtis' assessment has been undertaken using best practice methods, best available data, and adopting (mostly) recommendations of relevant best practice guides.
57. However, as I discuss further below, I have concerns that the resource consent conditions proposed by Waka Kotahi to mitigate the effects of the Ō2NL Project do not capture the breadth of mitigation measures recommended by Mr Curtis. In particular, there remains no firm commitment from Waka Kotahi that all recommended measures will be adopted and incorporated into the CAQMP. There is also uncertainty around how and when mitigation (when offered) will be delivered through management plans, and whether it will be sufficient to manage air quality effects.
58. When considering the management of air quality effects, as I note above, one resource consent condition provides a meaningful compliance standard. Condition RAQ1 provides that dust shall "*...not cause noxious, dangerous, offensive or objectionable effects at any point beyond the boundary of the Project Area*". However, in my

experience, this type of condition is often challenging for regulatory authorities to enforce, and is generally triggered after some form of effect has already occurred.

K. REVIEW SUMMARY

59. The Air Quality Assessment has been prepared in accordance with a range of New Zealand-based guidance documents that have been used on similar construction projects in New Zealand, such as the PP2Ō and Mackays to Peka Peka expressways. These guidance documents are considered to represent best industry practice. On that basis, I am comfortable with the methodology adopted by Mr Curtis.
60. The measures recommended by Mr Curtis to control construction dust emissions are also largely consistent with my opinion of what constitutes industry best practice.
61. The one significant exception involves Mr Curtis' recommendations around dust monitoring. Mr Curtis has recommended dust monitoring only where it is necessary to respond to complaints/concerns from residents. However, as I discuss further below, I consider that dust monitors should be continuously available for use in order to provide valuable feedback to assess the effectiveness of control measures, establish baseline dust levels, and help identify if dust nuisance effects are occurring at receptor locations.
62. In addition to continuous dust monitoring, there should be more specificity via consent conditions in respect to how properties that rely on roof-collected water and could be affected by dust, will be protected from the potential for drinking water to be affected.
63. I also consider that there should be consent conditions which require measures to identify and respond to instances where dust has created some sort of nuisance effect i.e. triggers to instigate the cleaning of properties impacted by dust or identifying crops that have been downgraded due to dust deposition.
64. These additional conditions are discussed further below.

65. Overall, I agree with the conclusions Mr Curtis has reached in the Air Quality Assessment subject to the proviso that all of the mitigation measures recommended within his report are implemented, alongside the additional conditions (as per my recommendations) requiring the use of continuous dust monitors, upgrades to roof-collected water systems and methods for identifying and remediating properties significantly affected by dust. I have also made recommendations as to additional content that should be included in the CAQMP.

Residual Effects

66. Notwithstanding the proposed mitigation, as Mr Curtis acknowledges in the Air Quality Assessment: *"Despite these measures, in my opinion it is likely that the residual dust effects at these properties will be such that residents are likely to notice increased dust levels and potentially be annoyed."*¹¹
67. I agree with this statement. Even when using best practice dust mitigation measures, there are likely to be times when the effective use of mitigation measures will lapse or be insufficient (such as during periods with very high wind speeds). This limitation, combined with the small buffer (<50m) at some locations along the alignment, will mean that there will always be the potential for some form of residual effect to occur.
68. In my opinion, if dust nuisance effects occur due to significant dust deposition, remediation measures will need to be employed, such as house cleaning and provision of laundry services, etc. While Mr Curtis has recommended these remedial measures are included in the CAQMP, I consider it more appropriate to have this requirement recorded within the resource consent conditions.
69. In addition to the use of dust monitors, I consider that the conditions of consent should better identify the triggers for identifying that dust is not being adequately controlled and that some form of effect has the potential to occur. This information could then be relayed to the Ō2NL Project team as SMS/email alerts to trigger additional dust

¹¹ At paragraph 5.

mitigation/contingency measures. I also recommend that the wind/rain and visible dust triggers identified in Table C.4 and PM₁₀ trigger in C.5 of the Air Quality Assessment be captured as consent conditions.

70. Mr Curtis notes that approximately 130 properties could be located within 50m of the proposed designation boundary. Given the potential risk associated with the large number of receptors, I consider that there needs to be a higher level of certainty that the mitigation measures proposed by Mr Curtis will be adopted and implemented on the project. I consider that this is best achieved through a CAQMP, as defined by detailed consent conditions, with 'bottom lines' which the activity must achieve.
71. I have discussed the potential for ecological areas to be affected by dust with James Lambie, who addresses terrestrial ecology for Horizons and GWRC. He agrees with the Air Quality Assessment conclusion that there are no areas which are particularly sensitive to dust deposition. Mr Lambie's general view is that as long as dust is managed below nuisance thresholds then dust deposition is likely to have only a minor effect on ecological areas.
72. I discussed with Ms Newell the possibility for areas along the alignment to contain contaminated material and the potential for dust generated from construction activities at these locations to cause adverse effects.¹² I understand that prior to any earthworks or land disturbance, preliminary site investigations will be updated based on a 'full' walk-over of the project alignment. Should contaminated areas be identified, Waka Kotahi will be required to obtain the necessary consents to remove this material.
73. As part of these consent applications a Contaminated Soil Management Plan ("**CSMP**") will need to be prepared. My expectation is that the CSMP will be required to include appropriate mitigation measures to ensure that dust containing contaminated material will not cause adverse effects. However, I consider it would also be prudent to include these measures in the CAQMP. I would recommend that this should

¹² Ms Newall has prepared the s87F and 198D reports for the Regulatory Authorities regarding contaminated land.

include measures such as pre-wetting material prior to excavation and covering of trucks.

L. DRAFT CONSTRUCTION AIR QUALITY MANAGEMENT PLAN

74. While I agree with the overall findings of Mr Curtis that construction effects can in principle be managed, I have not been able to assess the surety of those conclusions through review of the management measures proposed to form part of any plan. I am unable to determine whether it is possible for effects to be managed to an appropriate level without review of a draft management plan. To ensure certainty of outcome, I am of the opinion that the conditions should be strengthened so as to provide for an appropriate level of air quality effect(s) across all phases of the Ō2NL Project.

75. Among other things, I requested as part of a section 92 request by Horizons and GWRC that Waka Kotahi provide a draft CAQMP for review to ensure that the mitigation measures proposed by Mr Curtis are carried forward and adopted as part of the Ō2NL Project. This information was considered important, in part, because the assessment of the effects prepared by Mr Curtis is contingent on these being adopted.

76. Waka Kotahi responded with the following response.

The potential impacts of construction activities on air quality are managed through the conditions of consent that establish standards that must be achieved. The methods and monitoring necessary to achieve these standards are to be included in a Construction Air Quality Management Plan. The content of this Plan is specified in Schedule 2 to the Conditions.

Waka Kotahi anticipates that, because the Construction Air Quality Management Plan relates to construction management, the Plan will be prepared by the construction contractor for the Project. At this time, the certification of the Construction Air Quality Management Plan provides the reassurance that the relevant standards are achieved through appropriate management and monitoring practices.

77. While I appreciate some of the difficulties associated with providing a draft CAQMP at this point in the process, I understand that draft CAQMPs were provided as part of the resource consent applications for the other sections of the Kāpiti Expressway (namely PP2Ō and Mackays to Peka Peka) and the Transmission Gully motorway. All of these projects share various similarities to the Ō2NL Project, such as the types of dust-generating activities, relative scale and duration of activities and the proximity to receptors and SUP's. I do not see any reason for this project to be treated differently.
78. The resource consent conditions proposed by Waka Kotahi relating to air discharges are RAQ1, RAQ2, RAQ3, RAQ4, and RAQ5, together with sections of Schedule 2, which set out the CAQMP objectives.
79. Essentially, Waka Kotahi's recommendation is that a CAQMP is to be prepared, in accordance with Schedule 2, immediately before construction, with the CAQMP to be certified by the Regional Councils.
80. While I appreciate that this certification approach has been successfully adopted on other Waka Kotahi projects, given the number of receptors (upwards of 130) that could be affected by dust discharges and so as to provide submitters with a greater level of assurance that appropriate mitigation will be implemented, I remain of the opinion that a CAQMP should be provided at this stage of the Ō2NL Project.
81. In my view, this information would provide more certainty that discharges can be mitigated in a manner that prevents adverse effects. Furthermore, given the community concern regarding the Ō2NL Project, I consider this approach provides a greater level of transparency and comfort to the various stakeholders that air discharges will be appropriately managed and dust effects mitigated.

M. RESOURCE CONSENT CONDITIONS RECOMMENDED BY WAKA KOTAHI

82. I have reviewed the resource conditions proposed by Waka Kotahi and as previously mentioned the only one significant performance standard that I can identify is RAQ1: *"Discharges to air from works authorised by these resource consents must not cause noxious, dangerous, offensive*

or objectionable effects at any point beyond the boundary of the Project Area".

83. Based on my experience with other similar types of projects, I understand that this type of condition has been historically difficult to enforce, given the subjective nature of the performance standard. As I have noted above, the adverse effects will often also already have occurred on the environment.
84. To provide the various stakeholders more certainty that this requirement will be met, I have recommended that additional triggers be developed and incorporated as standalone consent conditions. These additional conditions include:
- (a) A requirement to undertake dust monitoring at high-risk locations (i.e. within 50m of dwellings or crops sensitive to dust, where significant dust could be generated from the Ō2NL Project).
 - (b) The use of dust monitoring triggers to instigate investigations and implement contingency measures.
 - (c) A requirement to upgrade roof-collected drinking water systems for properties within 200m of the Ō2NL Project Area.
 - (d) Develop a procedure to undertake regular visual dust inspections and identify triggers for the implementation of appropriate remediation activities, such as regular house cleaning, laundry services etc.
85. Mr Curtis states, at paragraph 228 of the Air Quality Assessment, that real-time monitoring has not been proposed as he considers the proposed visual monitoring to be sufficient and appropriate. However, Mr Curtis acknowledges that it could be used to respond to any serious and validated concerns raised through visual monitoring or in the event of repetitive complaints. If this monitoring was required, Mr Curtis recommends that this is in the form of PM₁₀, wind speed and wind direction monitoring.
86. I agree with Mr Curtis that this type of monitoring is appropriate for the Ō2NL Project. In my opinion, PM₁₀ monitoring can be used to cover both

the potential health effects associated with dust and to identify whether dust concentrations are at levels that could lead to nuisance effects.

87. I consider that this form of monitoring should be undertaken for locations within 50m of construction activities that are likely to be difficult to manage i.e. in the case of large, exposed areas, intensive activities, receptors predominately downwind of construction areas etc.
88. Given the large number of receptors that might fall within the scope of this definition, the number of monitors required might need to be rationalised (i.e. 3 to 4 mobile monitors available for the Ō2NL Project), with monitors only placed at locations most likely to be affected by dust. If dust concentrations can be managed to acceptable levels at these locations, it provides confidence that dust can be managed across the wider Ō2NL Project area. I consider that the location and timing of monitoring should be defined in a monitoring plan appended to the CAQMP, and certified by the Regional Councils.
89. In terms of a PM₁₀ trigger value, I consider that a value of 150 µg/m³ as a 1-hour average, should be adopted, as this is consistent with the recommendation provided in MfE Good Practice Guide for Assessing and Managing Dust (“**MfE GPG Dust**”).¹³

N. RECOMMENDED AMENDMENTS TO RESOURCE CONSENT CONDITIONS

90. The following section of this report provides my recommended amendments to the proposed resource consent conditions.

Construction Air Quality Management Plan Conditions

91. I have recommended a number of changes to the conditions proposed by Waka Kotahi. I have set these out further below. In particular, I have focused on the content of the management plan and the triggers to assess the performance of mitigation measures, to implement additional mitigation and to rectify dust nuisance effects.

¹³ Ministry for the Environment Good Practice Guide for Assessing and Managing Dust, November 2016.

92. First, the CAQMP should make reference to the construction air quality management guidance contained in the following documents, which has been relied on for the purpose of the Air Quality Assessment and will be implemented in the Ō2NL Project:
- (a) MfE GPG Dust; and
 - (b) Guide to assessing air quality impacts from state highway projects (version 2.3) published by Waka Kotahi, October 2019.
93. Secondly, I consider that Condition RAQ3 should be redrafted so that, in addition to the requirements of Schedule 2, the CAQMP should be prepared *"in general accordance with the mitigation measures presented in the Air Quality Assessment"*. This will link the mitigation measures recommended by Mr Curtis, which the Air Quality Assessment was contingent on, with the actual measures that are to be used on the project to control air discharges and their effects.
94. Thirdly, I have recommended some additional requirements that should be included in the scope of the CAQMP, in addition to Schedule 2 of the proposed conditions. I have reproduced Schedule 2 below and added my recommendations.
95. Some rationalisation of the requirements may need to be undertaken as there may be some overlap between the two sets of requirements (NOR and resource consents).

Schedule 2 requirements:

The Construction Air Quality Management Plan must include, but not be limited to:

- (a) *methods and procedures to manage dust as a result of construction activities, including triggers for the implementation of such measures, that may include:*
 - (i) *chemical stabilisation or suppression;*
 - (ii) *revegetation of exposed surfaces;*
 - (iii) *the use of water;*

- (iv) *the covering or otherwise enclosing of materials;*
 - (v) *approaches to the location and management of stockpiles;*
 - (vi) *methods and timeframes to stabilise earthworks;*
- (b) *the identification of triggers and contingency measures to address identified and verified adverse effects on sensitive receptors;*
- (c) *procedures for assessing, mitigating and remedying the effects any odorous material that is discovered as a result of construction activities, including methods to:*
- (i) *remove the material to reduce the exposure of odorous sources; and*
 - (ii) *mask the odour;*
- (d) *procedures for responding to process malfunctions and accidental dust discharges;*
- (e) *reference to the complaints management procedures set out in Condition RCM2 and details of contingency measures to respond to complaints;*
- (f) *reference to the construction vehicle management and maintenance procedures in the Construction Traffic Management Plan;*
- (g) *methods for on-going visual dust monitoring, including the visual inspection of surfaces on neighbouring sites and the maintenance of records alongside observed weather conditions.*
- (h) *methods to monitor and contingency measures to respond to effects of dust deposition:*
- (i) *at the dwelling, known as 'Ashleigh', located at 1024 Queen Street East where the design and implementation of this monitoring is undertaken in conjunction with a*

suitably qualified and experienced conservation architect; and

- (ii) *ii. at any rainwater collection tank that is used for drinking water purposes.*

Additional recommended CAQMP requirements

96. I am of the opinion that a number of additional requirements should be included in the CAQMP. These include:
- (a) A description of the construction works as they relate to potential effects on air quality;
 - (b) Environmental purposes and key performance indicators of the CAQMP;
 - (c) Identification and characterisation of air contaminants and potential emissions sources associated with the works (including dust, odour and engine emissions);
 - (d) A description of the environmental setting of the works, and local meteorological conditions;
 - (e) A review of the risk of air quality impacts associated with emission sources;
 - (f) Specific measures to identify and mitigate the potential for dust emissions to cause visibility effects on trains using the north island main trunk line;¹⁴
 - (g) Procedures and measures to control air emissions, at a minimum, these should be based on the procedures and measures described in the Air Quality Assessment;¹⁵
 - (h) Details of an air quality monitoring plan, including:

¹⁴ In response to a concern by Kiwirail Holdings Ltd – see the section on submissions below

¹⁵ At paragraphs 276 to 288.

- (i) Provision for the use of continuous particulate monitors across the Ō2NL Project area, to provide continuous feedback in real-time to Ō2NL Project staff;
 - (ii) Identification of the monitoring methods, principles for siting monitors, and/or areas where continuous monitors and weather monitors will be located;
 - (iii) Establishment of a project weather monitoring station – as set out in RAQ2; and
 - (iv) Trigger levels for continuous monitoring of wind speed and particulate matter concentrations (PM₁₀) and describe procedures for the notification to staff of trigger level exceedances, investigation of causes of the exceedance and implementation of response actions. The trigger levels should align with those set out in Tables C.4 and C.5 of the Air Quality Assessment. However, should these not provide adequate protection, with effects being observed at a value below these limits, a review process should be initiated to establish more appropriate values.
- (i) Contingency measures for responding to dust triggers, accidental or unforeseen emissions to air, plant or equipment malfunctions causing air quality impacts or ineffectiveness of measures in controlling dust and air quality emissions which may cause adverse effects;
 - (j) Specific procedures for responding to discharges of odour (including in the event of excavation of contaminated sites);
 - (k) Specific procedures for identifying contaminated material and implementing suitable measures to mitigate dust from this source;
 - (l) Procedures for managing dust generating activities located close (<50m) to locations where crops are being grown that are

sensitive to dust. This should include measures to identify and remediate effects on crops adversely affected by dust deposition;

- (m) Roles and responsibilities for implementing the procedures and measures described in the CAQMP; and
- (n) A quality assurance/quality control programme for the procedures and measures described in the CAQMP to ensure risks of air quality impacts are appropriately managed, including procedures for review, audit and update or procedures and measures described in the CAQMP.

Dust and Wind Monitoring Conditions

- 97. As discussed previously, I recommend that dust monitoring should be used to understand the effectiveness of mitigation measures and trigger the use of additional mitigation should concentrations exceed a value of $150 \mu\text{g}/\text{m}^3$ as a 1-hour average.
- 98. In addition to dust monitoring, I consider that if weather conditions breach the MfE GPG Dust trigger limits (defined in Table C.4 of the Air Quality Assessment) and dust generating activities are being undertaken within 50m of sensitive receptors or crops sensitive to dust, additional mitigation measures should be implemented.
- 99. In my opinion, new conditions should be imposed on the resource consents to deal with the following matters:
 - (a) Preparation of a monitoring plan: which covers at a minimum, the dust monitoring programme methods, including background monitoring, calibration and maintenance of dust monitors (as required); the location and maintenance and operation of the meteorological station.

The monitoring plan should be shared with community liaison group before the start of the project. Monitoring data must be provided on an ongoing six monthly basis.

The monitoring plan should ensure that monitoring is undertaken whenever significant dust generating activities are located within

50m of activities that have the potential to cause nuisance effects.

The monitors shall be placed between construction activities and the nearest sensitive receptor locations. It may be appropriate to use one monitor to achieve this for locations with numerous sensitive receptors are close to construction activities providing that it represents worst-case dust concentrations. The monitoring plan should be included within the CAQMP.

- (b) Trigger concentration: which indicates the potential for excessive construction-related dust at or beyond the Ō2NL Project area is a real time PM₁₀ concentration of ≥ 150 micrograms per cubic metre, as a rolling 1-hour average, which is updated every ten minutes.
- (c) Visible dust/dust or wind monitoring triggers: If at any time, including outside normal operating hours, visible dust is blowing beyond the Ō2NL Project area boundary, or if the dust or wind monitoring triggers are breached Waka Kotahi must:
 - (i) Cease all activities except dust suppression measures;
 - (ii) Continue all dust suppression activities including but not limited to the immediate watering of both active and inactive exposed surfaces;
 - (iii) Investigate possible sources of the dust; and
 - (iv) Only resume activities (other than dust suppression) once there is no longer visible dust blowing beyond the site boundaries and when the monitoring trigger in Condition 9 is no longer being breached or it has been established that the breach of the trigger was related to other sources i.e. cropping activities.
- (d) Dust generating activities: dust generating activities (except dust suppression measures) within 50 metres of a sensitive receptor location must not be undertaken when:

- (i) Wind speed reaches or exceeds 10 m/s (during two consecutive 10-minute periods);
 - (ii) Dust generating activities would be directly upwind of a sensitive receptor (10-minute average wind direction);
and
 - (iii) There has been no rain in the previous 12 hours.
- (e) Suspension of activities: If the available mitigation methods are unsuccessful in controlling dust emissions and may cause significant adverse effects on receptors beyond the Ō2NL Project area, the activities causing the discharge shall be suspended until adequate mitigation can be put in place.

Roof Collected Water Systems

100. The Air Quality Assessment provides recommendations that on a case-by-case basis, roof-collected water systems could be upgraded to minimise the impact of construction dust on drinking water supply.¹⁶ However, in my opinion, the nature and scale dust generating activities, proximity of construction works to properties and the level of community concern regarding this issue, as observed based on the number of submissions raised on this issue, means more certainly needs to be provided that the Ō2NL Project will not cause roof-collected water systems to be adversely affected.
101. This would be best achieved through a resource consent condition, requiring roof-collected water systems for properties located within 200m of the designation boundary to be upgraded to an appropriate standard. I understand that at a minimum this is likely to require a first flush system and tanks to be fitted with a floating inlet.
102. By implementing these improvements, I consider that any dust deposition associated with the Ō2NL Project is unlikely to affect the

¹⁶ See section 277b(i).

quality of residences' drinking water the condition I recommend should satisfy the concerns raised regarding this issue.¹⁷

Dust Nuisance Effects

103. Mr Curtis concludes that even with the use of best practice mitigation, there is the potential for properties located within 50m of construction activities to experience dust nuisance effects. I have recommended a resource consent condition requiring regular visual inspections of properties and where a significant adverse effect has been observed requiring that these effects are rectified i.e. cleaning of gutters, windows etc.
104. I consider that as part of the CAQMP a procedure should be developed to undertake regular visual inspections and identify triggers for the implementation of appropriate remediation activities, such as regular house cleaning, laundry services, etc.
105. I note that Schedule 2 outlines methods to monitor and contingency measures to respond to effects of dust deposition at the Ashleigh homestead. Again, this requirement should form a condition to provide more certainty that the requirements will be undertaken.

O. SUBMISSIONS

Review of Submissions

106. A review of the submissions shows there are 19 submissions that reference effects on air quality, primarily from dust. Of these submissions, four are in support, three are neutral and 12 are opposed to the application.
107. The main issues raised in the submissions include the following:
 - (a) Effects of dust on roof-collected water systems;

¹⁷ Submissions: 9 (Mrs Helen Naylor), 11 (Adam & Richard McCallum), 23 (Stephen and Miriam Main), 29 (Maria Storey), 36 (Dakin and Ally Branwell), 40 (Rochelle and Matthew Apatu), 47 (Janice Jakeman), 48 (Kevin Daly), 49 (Karen and Stephen Prouse).

- (b) Effects of nuisance dust on properties;
- (c) Amenity effects from construction dust;
- (d) Effects on air pollution, and health and wellbeing;
- (e) Dust from heavy vehicle movements;
- (f) More specificity around dust control measures;
- (g) Traffic along Tararua Road;
- (h) Operational emissions from the SH1N/SH57 intersection;
- (i) Effect of road gradient at Queens Street East Overpass on air quality modelling; and
- (j) Dust affecting the visibility of trains.

108. I have provided a summary of each submission received in relation to air quality effects in Appendix A.

Response to Submissions

109. Of the 19 submissions concerned with air quality effects, 9 raise concerns regarding the effect of dust deposition contaminating their roof-collected water supply. I share a similar concern based on the lack of certainty around the outcomes to be achieved through conditions put forward by Waka Kotahi. However, I am comfortable that if a new resource consent condition is included, requiring all properties within 200m of the Ō2NL Project area to be upgraded to a sufficient standard that will prevent dust from affecting their fresh water supply, that this concern will mitigate those concerns.

110. A number of the submissions raise concerns that dust discharges will cause either nuisance, amenity or health effects. These submissions often mention a lack of specificity around the dust control measures that will be used on the Ō2NL Project.

111. While I consider that the effects from dust can be managed to prevent adverse effects, I acknowledge that, for some properties located very

close to the Ō2NL Project, alignment there could still be residual effects. I agree there is a lack of certainty over the dust effects. For this reason, I have recommended a range of changes to the resource consent conditions, including (as detailed above):

- (a) Additional conditions regarding the requirements of the CAQMP to ensure that they are consistent with the measures recommended in the Air Quality Assessment.
 - (b) Requirement to undertake dust monitoring at high-risk locations (i.e. within 50m of dwellings or crops sensitive to dust, where significant dust could be generated from the Ō2NL Project).
 - (c) Dust and weather monitoring triggers used to instigate investigations and implement contingency measures.
 - (d) A requirement to upgrade roof-collected drinking water systems for properties within 200m of the Project Area.
 - (e) Develop a procedure to undertake regular visual dust inspections and identify triggers for the implementation of appropriate remediation activities, such as regular house cleaning, laundry services etc.
112. Some of the submissions raised concerns regarding pollution from the vehicles once the project is operational. These related to the Tararua Road interchange, the SH1N/SH57 intersection and the effect of the road gradient at Queens Street East Overpass. While these project features have the potential to cause localised increases in air quality at these locations, the findings presented in the Air Quality Assessment showed air quality to be within acceptable 'safe' limits. On the information before me, I agree that any increases are unlikely to result in adverse effects. However, I recommend that further information from Mr Curtis is provided with regard to these particular locations to better understand the magnitude of the effect. This would provide a greater level of assurance that air discharges will not cause adverse effects.
113. I note that the gradient of the Queen Street East Overpass was not considered in the atmospheric dispersion model (i.e. road was assumed

to be flat) and therefore air pollutant predictions near this location are likely to be under-reported. However, based on my experience, even if this parameter was included in the model the predicted increase in pollutant concentrations is likely to be low, noting that some of the increase emission is offset by the increased height of discharge and improved dispersion. I do not have access to the atmospheric dispersion model. It would be helpful when addressing this submission if Mr Curtis provided updated modelling to confirm that emissions from vehicles using the overpass will not cause adverse effects.

114. KiwiRail Holdings Limited are concerned that dust emissions may cause visibility issues for trains using the North Island main truck line. In my experience, ambient dust concentrations would have to be at very high levels for visibility effects to occur. Furthermore, I would not expect dust concentrations to reach these levels providing the control measures recommended by Mr Curtis are appropriately implemented on the Ō2NL Project.
115. To address this concern, I recommend that the CAQMP include specific measures to identify and mitigate the potential for dust emissions that could cause visibility effects on trains using the north island main trunk line. This requirement is noted under the list of additional requirements I have recommended for inclusion in the CAQMP.¹⁸

Peter Warwick Stacey

28 April 2023

¹⁸ See paragraph 95.

APPENDIX A

Summary of Submissions relating to Air Quality

#	Submitter Name and Address	Position	Summary	Comments
1	Ben Summers (Nestbox) – 217 Kimberley Road/345 Arapaepae South Road, Levin	Opposes the application	Concerned of the effects of dust during and after construction. Requests that sufficient preventative measures are implemented to avoid effects.	I estimate that this submitter is approximately 50–100m from the designation boundary.
2	Sjaan Henry Miles – 82 Waihou Road, Levin	Opposes the application	Concerned about the impact of air pollution on health and the surrounding environment.	I estimate that this receptor is approximately 50–100m from the designation boundary.
8	Wendy McAlister– Miles and Dion Miles – 195 Muhunoa East Road, Ōhau	Opposes the application	Concerned regarding amenity effects from dust during construction.	I estimate that this receptor is <50m from the designation boundary.
9	Mrs Helen Naylor – 45 Wi Tako Street, Manakau Levin	Both supports and opposes application	While Ms Naylor supports the overall objectives of the project, she is concerned that dust from construction activities will contaminate roof–collected tank water. She is also concerned about the costs of cleaning tanks/replacement of pumps. Furthermore, she would like Waka Kotahi to provide preventative measures to all households that rely on roof water supply in the 'dust risk zone'. These could include isolating the tanks from the roof and providing tanker water during construction or installing filters.	I estimate this receptor is 150–200m from the designation boundary.
10	Mr Gary Williams – 107 South Manakau Road	Supports the application	Concerns regarding dust from heavy vehicle movements – would like more specific mitigation measures and communication with communities as works are undertaken.	I estimate this receptor is >200m from the designation boundary.

#	Submitter Name and Address	Position	Summary	Comments
11	Adam & Richard McCallum – 213a Muhunoa East Road, Ōhau	Opposes the application	They are concerned that dust will contaminate their roof-collected water system. If dust cannot be adequately controlled, they want their tank and filters to be cleaned on a six monthly basis and have any contaminated water replaced.	I estimate that this submitter is approximately 100m from the designation boundary.
22	Glenys Anderson – 413 Arapaepae South Road, RD1, Levin	Opposes the application	They sight concerns that dust discharges will prevent them from being able to open their windows and doors for fresh air and to enjoy their outside living spaces. They have requested that Waka Kotahi provide solutions to mitigate this potential, such as installing double glazing and ventilation (heat pump).	This submitter is approximately <50m from the designation boundary.
23	Stephen and Miriam Main – 28 Mountain View Drive, RD 3 Otaki	Neutral (neither supports or opposes the application)	Concerned that dust concentrations will increase during construction. They note that while mitigation will be in place, it will not eliminate dust. They are concerned that the increased concentration of dust in the air will cause a build-up of particulate matter in the water guttering and water storage tanks, leading to an extra burden on the filtration system. Filters and UV light systems will have reduced life and tanks will require cleaning at increased cycles. Consequently, there will be an increased financial burden on the householder.	I estimate this receptor is 100–150m from the designation boundary.
25	Maria Storey – 24 Arapaepae Road North, Levin	(not specifically stated – however I assume she Opposes the application)	Concerned that dust will cause adverse effects on health and wellbeing.	I estimate this receptor is 150–200m from the designation boundary.
29	Maria Storey – 677a State Highway 1, Levin	Opposes the application	Concerned that dust will contaminate the roof-collected water supply. Requests that measures are implemented to stop dust from nearby spoil areas.	I estimate this receptor is >200m from the designation boundary.
36	Dakin and Ally Branwell – Location not specified	Opposes the application	Concerned regarding the dust pollution generated by construction earthworks and the effects of nuisance dust and contamination of roof-collected drinking water. They are also concerned that increased traffic movements on Tararua Road will cause increased air pollution. They request that dust emissions are kept to near-zero levels. They requested that a	

Section 87F and 198D Report – Ōtaki to north of Levin
Highway Project (Ō2NL Project)

#	Submitter Name and Address	Position	Summary	Comments
			'sound and safe' construction plan that allows pollution to be kept to a minimum.	
40	Rochelle and Matthew Apatu – 73 Wakefield Road, RD1, Levin	Neutral (neither supports or opposes the application)	Concerned that dust will contaminate the roof-collected water supply.	I estimate this receptor is 150–200m from the designation boundary.
47	Janice Jakeman – 197 Muhunoa East Road, Ohau	Opposes the application	Concerned that dust will contaminate the roof-collected water supply. Requested water filters for collection water and house and wind washing and gutters cleaned as required.	I estimate this receptor is <50m from the designation boundary.
48	Kevin Daly – 257 and 267 Tararua Road, Levin	Opposes the application	Concerned that dust will cause nuisance effects (soiling of houses and vehicles) and the effect on roof collected drinking water. Requested a resource consent condition requiring house and roof washdown services during construction.	I estimate this receptor is <50m from the designation boundary.
49	Karen and Stephen Prouse – 1024 Queen Street East, Levin	Opposes the application	<p>Concerned that modelling shows a 'negative effect' on air quality at their property. They note that there were no modelled changes in air quality on the ascent and descent approaches to the overbridge at Queen St East. They have recommended that this issue is investigated and mitigated.</p> <p>In terms of construction dust, they consider that there will be increased emissions near the Ashleigh property and homestead. Furthermore, they are concerned that roof water collection will be affected by dust. They are also concerned that construction dust will negatively impact the exterior paint of Ashleigh and cause premature deterioration of the paint surface. To mitigate effects, they seek screening for dust, roof washes and water tank cleans, and repainting of Ashleigh if dust and water blasting deteriorate paint surfacing and shorten the life expectancy of recent paint restoration.</p>	I estimate this receptor is approximately 100m from the designation boundary.
52	Mr Roger McLeay – 260 Somme Parade, Aramoho, Whanganui	Supports application	Concerns regarding using a roundabout at the SH1N/SH57 intersection. Considers that a grade-separated interchange would provide a better option from an air quality perspective.	This submitter appears to live outside the Ō2NL Project area.

#	Submitter Name and Address	Position	Summary	Comments
60	Emma and Carl Chalmers – 366 Arapaepae, South Road, RD1, Levin	Neutral (neither supports or opposes the application)	Concerned that they will be unable to open windows to ventilate their property.	I estimate this receptor is approximately 100m from the designation boundary.
70	Sam Hadley-Jones (Electra Limited) – 25 Bristol Street, Levin	Supports application	The submitter sights improved air quality as one of the reasons for supporting the application.	I estimate this receptor is approximately 2,000m from the designation boundary.
73	KiwiRail Holdings Limited (Michelle Grinlinton-Hancock)	Conditional Support of the application	<p>Concerned that excess dust could impact visibility for trains moving along the north island main trunk. The submitted recommended that the proposal is approved with appropriate conditions of consent.</p> <p>The north island main truck line runs through the designation near where a new roundabout will be constructed, which connects the Current SH1 at Heatherlead East Road, north of Levin</p>	

APPENDIX 13

PROPOSED DESIGNATION CONDITIONS – WITH AMENDMENTS

DRAFT

Designations conditions

Recommended amendments identified in s198D Reports are provided in red underline and ~~strikeout~~

Note that not all issues raised in the s198D Reports are addressed in this version. There are still some gaps in the baseline assessment which may (once filled through expert conferencing, mediation and evidence) also result in the need for further or amended conditions, and some amendments recommended in the technical reports do not yet have specific amendments proposed and will need to be the subject of further consideration (see for example the table at paragraph 16 of this report).

The following tables list the designations and the conditions.

Designations			
Reference	Designation	Applicable Conditions	Lapse Period
Horowhenua District Council			
D1	The construction, operation, maintenance and improvement of a state highway and shared user path and associated infrastructure, between Taylors Road (to the north of Ōtaki) and State Highway 1 north of Levin known as the Ōtaki to North of Levin Highway Project.	General and Administration DGA1 to DGA9 Construction Management DCM1 Tangata Whenua Values DTW1 to DTW5 Archaeology DAH1 Communication and Engagement DCE1 to DCE4 Landscape and Visual DLV1 and DLV2 Construction Noise and Vibration DNV1 to DNV4 Construction Traffic DCT1 Shared Path DSP1 Operational Road-Traffic Noise DRN1 to DRN6 Post-Construction and On-Going Operation DPC1	Ten (10) years from the date the designation is included in the Horowhenua District Plan
Kāpiti Coast District Council			
D2	The construction, operation, maintenance and improvement of a state highway and shared user path and associated infrastructure between Taylors Road (to the north of Ōtaki) and State Highway 1 north of Levin known as the Ōtaki to North of Levin Highway Project.	General and Administration DGA1 to DGA9 Construction Management DCM1 Tangata Whenua Values DTW1 to DTW5 Archaeology DAH1 Communication and Engagement DCE1 to DCE4 Landscape and Visual DLV1 and DLV2 Construction Noise and Vibration DNV1 to DNV4	Ten (10) years from the date the designation is included in the Kāpiti Coast District Plan

Designations			
Reference	Designation	Applicable Conditions	Lapse Period
		Construction Traffic DCT1 Shared Path DSP1 Operational Road-Traffic Noise DRN1 to DRN6 Post-Construction and On-Going Operation DPC1	

Designation and resource consent conditions abbreviations, acronyms and terms

Abbreviation/Acronym Term	Term/Definition
Cleanfill material	Material that when buried will have no adverse effect on people or the environment and includes virgin natural materials such as clay, soil and rock, and other inert materials such as concrete or brick that are free of: <ul style="list-style-type: none"> a) combustible, putrescible, degradable or leachable components; b) hazardous substances; c) products or materials derived from hazardous waste treatment, hazardous waste stabilisation or hazardous waste disposal practices; d) materials that may present a risk to human health; e) liquid waste; and f) for the purpose of this Project, any archaeological material or from a wāhi tapu or site of cultural significance.
Complaint	For the purposes of Condition DCE3 and RCM2, a complaint may include more than one complaint made in relation to the same or similar event or activity.
Construction activities	Activities undertaken to construct the Project, excluding establishment works, and including: <ul style="list-style-type: none"> a) temporary and permanent drainage installation; b) reclamation and stream diversion; c) culvert installation; d) earthworks, including cut and fill activities; e) bridge construction; f) pavements and surfacing; g) site reinstatement; h) landscaping; and i) installation of permanent road furniture and ancillary works.
Construction footprint	The area in the Project Area within which construction activities occur.
Detailed site investigation	Has the same meaning as included in the Regulation 3 of the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011
District Council	Horowhenua District Council and/or Kāpiti Coast District Council
dB	Decibel
District Plan	Horowhenua District Plan and/or Kāpiti Coast District Plan

Abbreviation/Acronym Term	Term/Definition
Earthworks	The alteration or disturbance of land, including by moving, removing, placing, blading, cutting, contouring, filling or excavation of earth (or any matter constituting the land including soil, clay, sand and rock); but excludes gardening, cultivation, and disturbance of land for the installation of fence posts.
Establishment works	<p>Preliminary activities undertaken in advance of construction activities commencing, including within a particular stage or geographic area, as follows:</p> <ul style="list-style-type: none"> a) site-wide geotechnical investigations and material reuse testing and earthwork methodology; b) topographical surveys; c) ecological, cultural, archaeological and heritage surveys and relocations; d) baseline monitoring; e) contaminated land testing; f) protection of and/or relocation of utilities; g) formation of site access and haul roads, including temporary stream crossings; h) formation of construction access tracks and/or reconfiguration of existing of access tracks; i) development of the construction yard and main site offices; j) works associated with the abstraction of water needed to construct the Project and associated reservoirs (for storage); k) property fencing and demarcation of areas where construction activities will not occur; l) installation of erosion and sediment control measures associated with establishment works; m) clearance of vegetation associated with establishment works (and clearing buildings and other features); and n) management plan production.
Horizons	Manawatū-Whanganui Regional Council
Incident	For the purposes of Condition RCM3, an incident is an unforeseen event that has not or cannot be prevented and has a consequence in terms of the consent holder's ability to comply with the conditions of these resource consents. An incident may include more than one incident that relates to the same or similar event or activity.
km/h	Kilometres per hour
Land disturbance	The alteration or disturbance of land (or any matter constituting the land including soil, clay, sand and rock) that does not permanently alter the profile, contour or height of the land.
m/s	Metres per second
NZS 6803:1999	New Zealand Standard NZS 6803:1999 ' <i>Acoustics – Construction Noise</i> '.

Abbreviation/Acronym Term	Term/Definition
One Plan	The Manawatū-Whanganui Regional Council's One Plan
PPF/PPFs	Protected premises and facilities
Project	The construction, operation, maintenance and improvement of a state highway and shared path and associated infrastructure between Taylors Road (to the north of Ōtaki) and State Highway 1 north of Levin known as the Ōtaki to North of Levin Highway Project.
Project Area	The area within the boundaries of the proposed designations and immediate surrounds.
Project Iwi Partners	Muaūpoko Tribal Authority and the following hapū of Ngāti Raukawa ki te Tonga: Ngā Hapū o Ōtaki (on behalf of Ngāti Kapumanawawhiti), Ngāti Hikitunga, Ngāti Huia ki Poroutawhao, Ngāti Huia ki Mātau, Ngāti Kikopiri, Ngāti Ngarongo, Ngāti Pareraukawa, Ngāti Takihiku, Ngāti Tukorehe and Ngāti Wehiwehi.
Provided / submitted	The sharing or transfer of a document, plan, outline plan or report to the District Council, Regional Council or Project Iwi Partners by electronic means including via email or a file transfer.
Regional Council	Manawatū-Whanganui Regional Council and/or Greater Wellington Regional Council
Regional Plan	The Manawatū-Whanganui Regional Council's One Plan and/or the Natural Resources Plan for the Wellington Region
RMA	Resource Management Act 1991
Requiring authority or consent holder	Waka Kotahi NZ Transport Agency
Suitably qualified person	A person who is competent and experienced in the relevant field of expertise

Designation conditions

Designation conditions index

Condition Number	Condition
General and Administration	
DGA1	General accordance
DGA2	Compliance with outline plan and management plans
DGA3	Operation and maintenance (Including post-construction removal of conditions)
DGA4	Post-construction review of designation width
DGA5	Lapse period
DGA6	Outline plan: construction activities
DGA7	Revision of an outline plan
DGA8	Establishment works
DGA9	Suitably qualified person
Construction Management	
DCM1	Construction Environmental Management Plan
Tangata Whenua Values	
DTW1	Karakia
DTW2	Tangata Whenua oversight
DTW3	Muaūpoko Management Plan
DTW4	Ngāti Raukawa ki te Tonga Management Plan
DTW5	Cultural and Environmental Design Framework
Archaeology	
DAH1	Archaeology discovery protocol

Condition Number	Condition
Communications and Engagement	
DCE1	Community liaison person
DCE2	Community liaison group
DCE3	Complaints management
DCE4	Communications Plan
Landscape and Visual	
DLV1	Landscape planting
DLV2	Visual effects
Construction Noise and Vibration	
DNV1	Construction noise limits
DNV2	Construction vibration limits
DNV3	Construction noise mitigation
DNV4	Construction Noise and Vibration Management Plan
Construction Traffic	
DCT1	Construction Traffic Management Plan
Operational Road-Traffic Noise	
DRN1	Low-noise road surface
DRN2	Noise barriers
DRN3	Design of low-noise road surfaces and noise barriers
DRN4	Post-construction review of low-noise road surfaces and noise barriers
DRN5	Audio tactile profiled road markings
DRN6	Building modifications

Condition Number	Condition
Post-Construction and On-Going Operation	
DPC1	Monitoring and management
Schedules	
Schedule 1	Referenced drawings
Schedule 2	Objectives and content of the Construction Environmental Management Plan
Schedule 3	Objectives and content of the Muaūpoko Management Plan Ngāti Raukawa ki te Tonga Management Plan
Schedule 4	Objectives and content of the Ngāti Raukawa ki te Tonga Management Plan
Schedule 5	Objectives and content of the Communications Plan
Schedule 6	Methodology for revised assessment of visual effects

Designation conditions

Condition Number	Condition
General and Administration	
<div style="border: 1px solid black; padding: 5px; color: red;"> <p>Note: DGA1 needs to be updated to refer to the Section 92 Response, the memorandum modifying the application in March 2023, and any changes that arise during the Environment Court process.</p> </div>	
DGA1	<p>General accordance</p> <p>a) Except as modified by the conditions below, and subject to detailed design, the Project must be undertaken in general accordance with the following information provided in support of the Notices of Requirement for a Designation dated 1 November 2022:</p> <ol style="list-style-type: none"> i. 'Volume II Notices of Requirement for a Designation and Application for Resource Consents: Supporting Information and Assessment of Effects on the Environment' Part C Project Description; ii. 'Volume III Drawings and Plans' as follows: <ol style="list-style-type: none"> A. Geometrics: General Arrangement Plans; B. Geometrics: Plan and Long Sections; C. Geometrics: Typical Sections; D. Geometrics: Cross Sections;

Condition Number	Condition
	<p>E. Structures; and</p> <p>F. Accommodation Works.</p> <p>b) Where there is inconsistency between the documents listed in clause (a) the requirements of these conditions prevail.</p>
DGA2	<p>Compliance with outline plan and management plans</p> <p>a) The Project must be undertaken in accordance with the most recent version of the following:</p> <ul style="list-style-type: none"> i. an outline plan that has been submitted to the District Council; ii. a Construction Environmental Management Plan required by Condition DCM1, including: <ul style="list-style-type: none"> A. a Construction Noise and Vibration Management Plan required by Condition DNV4; B. a Construction Traffic Management Plan required by Condition DCT1; iii. a Communications Plan required by Condition DCE4; iv. a Muaūpoko Management Plan required by Condition TW3; and v. a Ngāti Raukawa ki te Tonga Management Plan required by Condition TW4.
DGA3	<p>Operation and maintenance (including post-construction removal of conditions)</p> <p>a) Other than as referenced in relation to monitoring required by Condition DPC1, the following conditions relate to the construction of the Project and, once construction activities are complete, these conditions will no longer apply and can be removed as part of a review or change to a District Plan or in accordance with section 181 of the RMA:</p> <ul style="list-style-type: none"> i. General and Administration Conditions DGA6 to DGA9; ii. Construction Management Condition DCM1; iii. Tangata Whenua Values Conditions DTW1 to DTW5; iv. Archaeology Condition DAH1; v. Communications and Engagement Condition DCE1 to DCE4; vi. Landscape and Visual Condition DLV1 to DLV2; vii. Construction Noise and Vibration Condition DNV1 to DNV4; viii. Construction Traffic Condition DCT1; and ix. Shared Path Condition DSP1. <p>b) For the avoidance of doubt, none of the conditions listed in clause (a) prevent or apply to the ongoing operation or maintenance of the Project within the designation where the provisions of section 176A of the RMA apply.</p>
DGA4	<p>Post-construction review of designation width</p> <p>a) As soon as practicable following the Project being open for public use, the requiring authority must:</p> <ul style="list-style-type: none"> i. review the width of the area designated for the Project; ii. identify any areas of designated land that are no longer necessary for the on-going operation or maintenance of the Project; or for on-going mitigation, offsetting, or compensation measures required to address adverse effects of the Project; and iii. give notice to the District Council in accordance with section 182 of the RMA that those parts of the designation identified under clause (a)(ii) are no longer wanted.

Condition Number	Condition
DGA5	<p>Lapse period</p> <p>a) The designation lapses if not given effect to within ten (10) years from the date on which the designation is included in a district plan under section 175 of the RMA.</p>
DGA6	<p>Outline plan</p> <p>a) Except where Condition DGA7 or DGA8 applies, an outline plan or outline plans must be prepared and submitted to the District Council in accordance with section 176A of the RMA.</p> <p>b) An outline plan may be for the entire Project or for one or more stages, aspects, sections or locations of construction activities.</p> <p>c) An outline plan must include the following, where relevant to the particular design or construction matters being addressed:</p> <ul style="list-style-type: none"> i. the Construction Environmental Management Plan required by Condition DCM1 that includes a: <ul style="list-style-type: none"> A. Construction Noise and Vibration Management Plan required by Condition DNV4; and B. Construction Traffic Management Plan required by Condition DCT1; ii. a Design Review Audit completed in accordance with Condition DTW5; iii. the design report required by Condition DRN3; iv. the outcomes, including any recommended mitigation, of consultation with a suitably qualified and experienced person or persons regarding the potential heritage impacts of the Queen Street East pedestrian and cycling connection on 'Ashleigh', located at 1024 Queen Street East; and v. a revised assessment of visual effects required by Condition DLV2.
DGA7	<p>Revision of an outline plan</p> <p>a) The documents and plans referred to in Condition DGA6(c)(i) may be amended to provide updated information or reflect changes in design or construction methods without the need for a further outline plan where the proposed amendment is provided in writing to the District Council at least ten (10) working days prior to the related activities being undertaken and the amendment is in general accordance with the outcome or purpose described in the original outline plan.</p> <p>b) Where clause (a) does not apply an outline plan must be submitted to the District Council.</p>
DGA8	<p>Establishment works</p> <p>a) The requirement for an outline plan for establishment works is waived under section 176A(2) of the RMA.</p>
DGA9	<p>Suitably qualified person</p> <p>a) The following documents or measures that are required to be prepared or undertaken by these conditions must be prepared or undertaken by a suitably qualified person or persons:</p> <ul style="list-style-type: none"> i. the assessment of visual effects required by Condition DLV2; ii. a Construction Noise and Vibration Management Plan required by Condition DNV4; and iii. a Construction Traffic Management Plan required by Condition DCT1.

Condition Number	Condition
Construction Management	
DCM1	<p>Construction Environmental Management Plan</p> <p>a) A Construction Environmental Management Plan must be prepared to achieve the objectives, and include the content, set out in Schedule 2 to these conditions.</p> <p>b) The Construction Environmental Management Plan required by clause (a) must be prepared in consultation with the Project Iwi Partners and the Community Liaison Group required by Condition DCE2.</p>
Tangata Whenua Values	
DTW1	<p>Karakia</p> <p>a) Karakia must be undertaken before:</p> <ol style="list-style-type: none"> i. the commencement of construction activities; and ii. the Project being open for public use.
DTW2	<p>Tangata Whenua oversight</p> <p>a) The requiring authority must invite representatives of the Project Iwi Partners to a site visit at least monthly during construction activities.</p> <p>b) The representatives of the Project Iwi Partners must be invited to the site visit with a minimum of ten (10) working days notice.</p> <p>c) The purpose of the site visit is to provide oversight of construction activities and progress across the whole of the Project.</p> <p>d) Condition DTW2 is complied with where the requirements of clause (b) are met and the Project Iwi Partners do not undertake the site visit.</p>
DTW3	<p>Muaūpoko Management Plan</p> <p>a) A Muaūpoko Management Plan or Plans must be prepared to achieve the objectives, and include the content, set out in Schedule 3 to these conditions.</p> <p>b) Muaūpoko Tribal Authority to endorse a person or persons to prepare the Muaūpoko Management Plan or Plans required by clause (a).</p>
DTW4	<p>Ngāti Raukawa ki te Tonga Management Plan</p> <p>a) A Ngāti Raukawa ki te Tonga Management Plan or Plans must be prepared to achieve the objectives, and include the content, set out in Schedule 4 to these conditions.</p> <p>b) The requiring authority must invite the hāpu of Ngāti Raukawa ki te Tonga to together endorse a person or persons to prepare the Ngāti Raukawa ki te Tonga Management Plan or Plans required by clause (a).</p>
DTW5	<p>Cultural and Environmental Design Framework</p> <p>a) The Project must be consistent with the Design Principles in Chapter 3 of the '<i>Cultural and Environmental Design Framework</i>', Consent Version, dated October 2022.</p> <p>b) Design Review Audits, set out in Chapter 4 of the '<i>Cultural Environmental Design Framework</i>', to confirm that the Project is consistent with the Design Principles must be undertaken:</p> <ol style="list-style-type: none"> i. prior to the commencement of construction; and

Condition Number	Condition
	<ul style="list-style-type: none"> ii. every three (3) months until the Project is open for public use. c) A Design Review Audits required by clause (b) may describe design elements of the Project with reference to, but not limited to, Chapter 4 of '<i>the Cultural and Environmental Design Framework</i>', Consent Version, dated October 2022. d) A Design Review Audit required by clause (b) must be provided to the District Council on request.
Archaeology	
DAH1	<p>Archaeology discovery protocol</p> <ul style="list-style-type: none"> a) In the event that construction activities result in the discovery or disturbance of an archaeological site, kōiwi tangata, wāhi tapu or wāhi taonga, the requiring authority must cease construction activities in the immediate vicinity of the discovery or disturbance and inform: <ul style="list-style-type: none"> i. the Project Iwi Partners; ii. Heritage New Zealand Pouhere Taonga; iii. the District Council; and iv. in the event of kōiwi tangata being discovered, the New Zealand Police. b) Construction activities in the immediate vicinity of the discovery or disturbance must be suspended until: <ul style="list-style-type: none"> i. the measures set out in the Waka Kotahi NZ Transport Agency '<i>Minimum Standard P45 Accidental Archaeological Discovery Specification</i>' (August 2018) are put in place; and ii. Project Iwi Partners have advised that the discovery or disturbance is not of an archaeological site, kōiwi tangata, wāhi tapu or wāhi taonga or work can otherwise recommence; and iii. the District Council has advised that work can recommence because the discovery or disturbance is not of an archaeological site, kōiwi tangata, wāhi tapu or wāhi taonga; and iv. the requiring authority advises the Project Iwi Partners and District Council in writing that an archaeology authority is not required by the Heritage New Zealand Pouhere Taonga Act 2104; or v. an archaeology authority under the Heritage New Zealand Pouhere Taonga Act 2014 has been obtained. c) Clauses (a) and (b) do not apply, and are superseded, where the works are subject to an archaeological authority granted under section 48 of the Heritage New Zealand Pouhere Taonga Act 2014.
Communications and Engagement	
DCE1	<p>Community liaison person</p> <ul style="list-style-type: none"> a) Prior to the commencement of construction activities, and for the duration of construction activities, <u>and up to 6 months following completion of construction</u>, a community liaison person or persons must be appointed by the requiring authority as the main and readily accessible point of contact for people affected by construction activities. b) A community liaison person or persons must be available by telephone during normal business hours and at any time outside of those hours when construction activities are occurring.

Condition Number	Condition
	<p>c) The requiring authority must take appropriate steps to make the community liaison person or persons' telephone and email contact details accessible to all members of the community affected by construction activities.</p>
DCE2	<p>Community Liaison Group</p> <p>a) At least thirty (30) working days prior to the completion of the Construction Environment Management Plan the requiring authority must establish a Community Liaison Group.</p> <p>b) The purpose of the Community Liaison Group is to enable the requiring authority to share information and provide opportunity for the Community Liaison Group to comment on:</p> <ol style="list-style-type: none"> i. the detailed design of the Project, including measures to mitigate the adverse effects of the Project; ii. the Construction Environmental Management Plan required by Condition DCM1; and iii. concerns in relation to the adverse effects of construction activities. <p>c) The Community Liaison Group must hold meetings at least once every three (3) months for the duration of construction activities and up to twelve (12) months following completion of construction.</p> <p>d) The Community Liaison Group must include the following:</p> <ol style="list-style-type: none"> i. the community liaison person set out in Condition DCE1; ii. A representative from the requiring authority; and iii. a representative from the construction contractor. <p>e) The Project Iwi Partners and up to two (2) representatives from the following entities must be invited in writing to participate in the Community Liaison Group:</p> <ol style="list-style-type: none"> i. the District Councils; ii. the Regional Councils; iii. [to be confirmed following further consultation and the receipt of submissions, the list is anticipated to include community groups and business associations; education providers; transport groups] <p>f) The requiring authority must maintain a record of issues raised by the Community Liaison Group and the requiring authority's response to those issues (including reasons in circumstances where no action is taken).</p> <p>g) The Community Liaison Group may decide to meet less frequently or may be discontinued earlier at the agreement of the majority of the members from the entities listed in clause (e).</p>
DCE3	<p>Complaints management</p> <p>a) A register must be maintained of any Complaint received alleging adverse effects from construction activities.</p> <p>b) The register must include:</p> <ol style="list-style-type: none"> i. the name and contact details (if supplied) of the complainant; ii. the nature and details of the complaint; iii. the location, date and time of the complaint and the alleged effect giving rise to the complaint; iv. the weather conditions and wind direction at the time of the alleged effect, where relevant to the complaint. v. other activities in the area, unrelated to the Project, that may have contributed to the complaint; vi. the outcome of the requiring authority's investigation into the complaint; and

Condition Number	Condition
	<ul style="list-style-type: none"> vii. a description of any measures taken to respond to the complaint. c) The District Council must be notified of any complaint received alleging adverse effects from construction activities no more than five (5) working days after receiving the complaint. d) The requiring authority must, within ten (10) working days of the complaint being received, advise the District Council and the complainant of the outcome of the requiring authority's investigation and all measures taken, or proposed to be taken, to respond to the complaint.
DCE4	<p>Communications Plan</p> <ul style="list-style-type: none"> a) A Communications Plan must be prepared to achieve the objectives, and include the content, set out in Schedule 2 to these conditions.
Landscape and Visual	
DLV1	<p>Landscape planting</p> <ul style="list-style-type: none"> a) The landscape planting shown on the Planting Concept Plans: Indicative Typology and the Planting Concept Plans: RMA Purpose Type included in the '<i>Notices of Requirement for a Designation</i>' dated 1 November 2022 '<i>Volume III Drawings and Plans</i>' must be undertaken: <ul style="list-style-type: none"> i. where practicable, prior to commencement of construction activities; or ii. as soon as construction works are completed in the relevant area and seasonal conditions are appropriate; and iii. within eighteen (18) months of the Project being open for public use. b) Landscape planting must be implemented, maintained, monitored and replaced to achieve a 90% survival rate and 80% canopy coverage of the ground at five (5) years following the date that initial planting commenced; and c) The landscape planting must consist of plant material sourced from the rohe in which it is to be planted or be otherwise sourced from the ecological district of the site.
DLV2	<p>Visual effects</p> <ul style="list-style-type: none"> a) The requiring authority must undertake a revised assessment of visual effects of the Ō2NL Project to confirm occupied dwellings where the residual visual effects are assessed to be moderate or greater, where the assessment assumes the landscape planting required by Condition DLV1 has been implemented. b) The assessment of visual effects required by clause (a) must be: <ul style="list-style-type: none"> i. undertaken by a suitably qualified and experienced person or persons; ii. completed in a manner consistent with the methodology in Schedule 6 to these conditions; and iii. provided as part of the outline plan required by Condition DGA6. c) Where the assessment of visual effects required by clause (a) concludes that the adverse visual effects on a dwelling are moderate or greater the requiring authority must consult with the owners of the dwelling and offer to develop and implement a plan for mitigation of visual effects of the Project on the affected property to further screen views of the Project. d) The consultation required by clause (c) must be undertaken within twelve (12) months of the commencement of construction activities or as soon as practicable after the implementation of the landscape planting required by Condition DLV1. e) The requiring authority has complied with Condition DLV2 if: <ul style="list-style-type: none"> i. the owner of the dwelling agrees to the offered mitigation;

Condition Number	Condition																																																											
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Construction Noise and Vibration																																																												
DNV1	<p>Construction noise limits</p> <ul style="list-style-type: none"> a) Except as set out in Condition DNV3, construction activities must be undertaken so that construction noise does not exceed the limits in Table DNV-1 at occupied PPFs <u>and commercial and industrial receivers (non PPF buildings) in the vicinity of the Project.</u> b) Construction noise must be measured and assessed in accordance with NZS 6803:1999 'Acoustics –Construction Noise'. <p>Table DNV-1: Construction Noise Limits</p> <table border="1"> <thead> <tr> <th>Time of week</th> <th>Time period</th> <th>L_{Aeq(t)}</th> <th>L_{Afmax}</th> </tr> </thead> <tbody> <tr> <td colspan="4" style="text-align: center;"><u>Occupied PPFs</u></td> </tr> <tr> <td rowspan="4">Weekdays</td> <td>0630-0730</td> <td>55 dB</td> <td>75 dB</td> </tr> <tr> <td>0730-1800</td> <td>70 dB</td> <td>85 dB</td> </tr> <tr> <td>1800-2000</td> <td>65 dB</td> <td>80 dB</td> </tr> <tr> <td>2000-0630</td> <td>45 dB</td> <td>75 dB</td> </tr> <tr> <td rowspan="4">Saturdays</td> <td>0630-0730</td> <td>45 dB</td> <td>75 dB</td> </tr> <tr> <td>0730-1800</td> <td>70 dB</td> <td>85 dB</td> </tr> <tr> <td>1800-2000</td> <td>45 dB</td> <td>75 dB</td> </tr> <tr> <td>2000-0630</td> <td>45 dB</td> <td>75 dB</td> </tr> <tr> <td rowspan="4">Sundays and public holidays</td> <td>0630-0730</td> <td>45 dB</td> <td>75 dB</td> </tr> <tr> <td>0730-1800</td> <td>55 dB</td> <td>85 dB</td> </tr> <tr> <td>1800-2000</td> <td>45 dB</td> <td>75 dB</td> </tr> <tr> <td>2000-0630</td> <td>45 dB</td> <td>75 dB</td> </tr> <tr> <td colspan="2" style="text-align: center;"><u>Other occupied buildings</u></td> <td></td> <td></td> </tr> <tr> <td><u>All days</u></td> <td><u>0730-1800</u></td> <td><u>70 dB</u></td> <td><u>n/a</u></td> </tr> <tr> <td></td> <td><u>1800-0730</u></td> <td><u>75 dB</u></td> <td><u>n/a</u></td> </tr> </tbody> </table>	Time of week	Time period	L _{Aeq(t)}	L _{Afmax}	<u>Occupied PPFs</u>				Weekdays	0630-0730	55 dB	75 dB	0730-1800	70 dB	85 dB	1800-2000	65 dB	80 dB	2000-0630	45 dB	75 dB	Saturdays	0630-0730	45 dB	75 dB	0730-1800	70 dB	85 dB	1800-2000	45 dB	75 dB	2000-0630	45 dB	75 dB	Sundays and public holidays	0630-0730	45 dB	75 dB	0730-1800	55 dB	85 dB	1800-2000	45 dB	75 dB	2000-0630	45 dB	75 dB	<u>Other occupied buildings</u>				<u>All days</u>	<u>0730-1800</u>	<u>70 dB</u>	<u>n/a</u>		<u>1800-0730</u>	<u>75 dB</u>	<u>n/a</u>
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DNV2	<p>Construction vibration limits</p> <ul style="list-style-type: none"> a) Except as set out in Condition DNV3, construction activities must be undertaken, as far as practicable, so that construction vibration does not exceed the Category A limits in Table DNV-2. b) If measured or predicted vibration from construction activities exceeds the Category A limits, construction vibration from those activities must be assessed and managed as set out in the Construction Noise and Vibration Management Plan required by Condition DNV4. c) If measured or predicted vibration from construction activities exceeds the Category B limits, those activities must only proceed if vibration effects on affected buildings are assessed, monitored and mitigated as set out in the Construction Noise and Vibration Management Plan required by Condition DNV4. 																																																											

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	<p>d) Construction vibration must be measured in accordance with ISO 4866:2010 <i>Mechanical vibration and shock – Vibration of fixed structures – Guidelines for the measurement of vibrations and evaluation of their effects on structures.</i></p> <p style="text-align: center;">Table DNV-2: Vibration limits</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Receiver</th> <th>Location</th> <th>Time period</th> <th>Category A (PPV)</th> <th>Category B (PPV)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Occupied PPFs</td> <td rowspan="2">Inside the building</td> <td>0630-2000</td> <td>1 mm/s</td> <td>5 mm/s</td> </tr> <tr> <td>2000-0630</td> <td>0.3 mm/s</td> <td>1 mm/s</td> </tr> <tr> <td>Other occupied buildings</td> <td>Inside the building</td> <td>0630-2000</td> <td>2 mm/s</td> <td>5 mm/s</td> </tr> <tr> <td rowspan="2">Unoccupied buildings</td> <td rowspan="2">Building foundation</td> <td>Vibration (transient)</td> <td rowspan="2">5 mm/s</td> <td>BS 5228-2 Table B.2</td> </tr> <tr> <td>Vibration (continuous)</td> <td>50% of BS 5228-2 Table B.2*</td> </tr> </tbody> </table> <p>*BS 5228-2 is British Standard BS 5228-2:2009 Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration.</p>	Receiver	Location	Time period	Category A (PPV)	Category B (PPV)	Occupied PPFs	Inside the building	0630-2000	1 mm/s	5 mm/s	2000-0630	0.3 mm/s	1 mm/s	Other occupied buildings	Inside the building	0630-2000	2 mm/s	5 mm/s	Unoccupied buildings	Building foundation	Vibration (transient)	5 mm/s	BS 5228-2 Table B.2	Vibration (continuous)	50% of BS 5228-2 Table B.2*
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DNV3	<p>Construction noise and vibration mitigation</p> <p>a) Where construction noise or construction vibration is predicted or measured to exceed the limits in Condition DNV1 and DNV2 at any PPF, for each PPF the requiring authority must identify and adopt the Best Practicable Option for the management of construction noise effects in accordance with clause (b).</p> <p>b) The Best Practicable Option required by clause (a) must be identified by a suitably qualified and experienced person or persons having regard to:</p> <ol style="list-style-type: none"> i. the predicted unmitigated noise <u>and/or vibration</u> level for construction activities at the PPF; ii. noise <u>and/or vibration</u> level to be targeted by any proposed mitigation; and iii. consultation with the occupiers of the PPF to understand the use of the site and sensitivities, including times, activities and locations. 																									
DNV4	<p>Construction Noise and Vibration Management Plan</p> <p>a) A Construction Noise and Vibration Management Plan must be prepared to achieve the objectives, and include the content, set out in Schedule 2 to these conditions.</p>																									
<u>DNV5</u>	<p><u>Construction Noise and Vibration Schedule</u></p> <p><u>a) Unless otherwise provided for in a CNVMP, a Schedule to the CNVMP (Schedule) shall be prepared by a Suitably Qualified and Experienced Person, agreed between the Councils and</u></p>																									

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	<p><u>the requiring authority, in consultation with the owners and occupiers of sites subject to the Schedule, when:</u></p> <ul style="list-style-type: none"> <u>i. Construction noise is either predicted or measured to exceed the noise standards in [Condition DNV1];</u> <u>ii. Construction vibration is either predicted or measured to exceed the Category A standard at the receivers in [Condition DNV2].</u> <p><u>(b) The objective of the Schedule is to set out the Best Practicable Option for the management of noise and/or vibration effects of the construction activity beyond those measures set out in the CNVMP. The Schedule shall include details such as:</u></p> <ul style="list-style-type: none"> <u>i. Construction activity location, start and finish times;</u> <u>ii. The nearest neighbours to the construction activity;</u> <u>iii. The predicted noise and/or vibration level for all receivers where the levels are predicted or measured to exceed the applicable standards in Conditions DNV1 and DNV2;</u> <u>iv. The proposed mitigation.</u> <u>v. The proposed communication with neighbours; and</u> <u>vi. Location, times and types of monitoring.</u> <p><u>(c) The Schedule shall be submitted to the Manager for information at least 5 working days, except in unforeseen circumstances, in advance of Construction Works that are covered by the scope of the Schedule and shall form part of the CNVMP.</u></p>												
Construction Traffic													
DCT1	<p>Construction Traffic Management Plan</p> <p>a) A Construction Traffic Management Plan must be prepared to achieve the objectives, and include the content, set out in Schedule 2 to these conditions.</p>												
Shared Path													
DSP1	<p>Shared path</p> <p>a) Within twelve (12) months of the Project being open for public use, a shared path must be in place along the length of the Project.</p>												
Operational Road-Traffic Noise													
DRN1	<p>Low-noise road surfaces</p> <p>b) Except where Condition DRN3 applies, the low-noise road surfaces in Table DRN-1 must be installed within twelve (12) eighteen (18) months from the date the Project opened for public use.</p> <p>Table DRN-1 – Low-Noise Road Surfaces</p> <table border="1"> <thead> <tr> <th>Location</th> <th>Chainage</th> <th>Length</th> <th>Surface Type</th> </tr> </thead> <tbody> <tr> <td>Muhunoa East to the SH57 Roundabout</td> <td>CH22200-CH13400</td> <td>8.8km</td> <td>50mm thick EPA7 or equivalent</td> </tr> <tr> <td>South Manakau to the Waikawa Stream bridge</td> <td>CH13700-CH26500</td> <td>5.2km</td> <td>50mm thick EPA7 or equivalent</td> </tr> </tbody> </table>	Location	Chainage	Length	Surface Type	Muhunoa East to the SH57 Roundabout	CH22200-CH13400	8.8km	50mm thick EPA7 or equivalent	South Manakau to the Waikawa Stream bridge	CH13700-CH26500	5.2km	50mm thick EPA7 or equivalent
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DRN2	<p>Noise barriers</p> <p>a) Except where Condition DRN_3 applies, the noise barriers in Table DRN_2 must be installed prior to the Project being opened for public use.</p> <p>Table DRN-2 – Noise Barriers</p> <table border="1"> <thead> <tr> <th>Location</th> <th>Chainage</th> <th>Length</th> <th>Barrier type</th> </tr> </thead> <tbody> <tr> <td>Levin Rail bridge, southbound</td> <td>CH10700-CH11500</td> <td>810m</td> <td>1.1m high concrete safety barrier</td> </tr> <tr> <td>Waihou Road</td> <td>CH13900-CH15000</td> <td>1.2km</td> <td>1.1m high concrete safety barrier</td> </tr> <tr> <td>Waiauti Stream and South Manakau Road bridge, northbound</td> <td>CH29700-CH30400</td> <td>530m</td> <td>1.1m high concrete safety barrier</td> </tr> <tr> <td>Waiauti Stream and South Manakau Road bridge, southbound</td> <td>CH29700-30700</td> <td>1.1km</td> <td>1.1m high concrete safety barrier</td> </tr> <tr> <td>North Ōtaki overbridge, northbound</td> <td>CH33600-CH34200</td> <td>600m</td> <td>1.1m high concrete safety barrier</td> </tr> </tbody> </table>	Location	Chainage	Length	Barrier type	Levin Rail bridge, southbound	CH10700-CH11500	810m	1.1m high concrete safety barrier	Waihou Road	CH13900-CH15000	1.2km	1.1m high concrete safety barrier	Waiauti Stream and South Manakau Road bridge, northbound	CH29700-CH30400	530m	1.1m high concrete safety barrier	Waiauti Stream and South Manakau Road bridge, southbound	CH29700-30700	1.1km	1.1m high concrete safety barrier	North Ōtaki overbridge, northbound	CH33600-CH34200	600m	1.1m high concrete safety barrier
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<u>DRN2A</u>	<p><u>Maintenance of Mitigation Options</u></p> <p>a) <u>The Mitigation set out in DRN1 and DRN2 shall be maintained so they retain their noise reduction performance as far as practicable.</u></p>																								
DRN3	<p>Design of low-noise road surfaces and noise barriers</p> <p>a) The design of the low-noise road surfaces and noise barriers required by Conditions DRN1 and DRN2 must be completed by a suitably qualified and experienced person or persons.</p> <p>b) The design required by clause (a) may alter the location, length or type of low-noise road surface or noise barrier required by Conditions DRN1 and DRN2 where the design change:</p> <ol style="list-style-type: none"> results in the same or more stringent Category of noise criteria at any PPF; or results in a less stringent Category of noise criteria at any PPF and a suitably qualified and experience person or persons confirms that the design change is the 'Best Practicable Option' in accordance with NZS 6806:2010 'Acoustics – Road traffic noise – New and altered roads'. <p>c) A design report that sets out noise mitigation measures must include, but not be limited to:</p> <ol style="list-style-type: none"> predicted sound levels at each PPF in 2039; design drawings for noise barriers; and specifications for road surfaces. 																								

Condition Number	Condition
	<p>d) The design report required by clause (c) must be provided as part of the outline plan required by Condition DGA6.</p>
<p>DRN4</p>	<p>Post-construction review of low-noise road surfaces and noise barriers</p> <p>a) Within three (3) months of installing the noise barriers required by Condition DRN3, the requiring authority must undertake a review of the noise barriers to confirm that they have been installed as set out in the design report required by Condition RRN3(c).</p> <p>b) Within three (3) eighteen (18) months from the laying of the low noise road surface required by Condition DRN3, the requiring authority must undertake a post-construction review of low-noise road surfaces to confirm that they have been installed as set out in the design report required by Condition DRN3(c).</p> <p>c) The reviews required by clause (a) and clause (b) must be undertaken by a suitably qualified and experienced person or persons.</p> <p>d) The review required by clause (b) must confirm that the predicted sound levels at each PPF in 2039 set out in the design report prepared under Condition DRN3 will be achieved.</p> <p>b) The post-construction review shall comprise:</p> <ol style="list-style-type: none"> i. Site inspection of noise barriers, ii. Site inspection of any road environmental treatments for noise mitigation, iii. Site inspection of road surfaces, <p>c) The review of the noise barriers, road surface features (bridge joints), and road environment treatments shall be completed within 3 months of the road opening</p> <p>d) The review of road surface shall be completed within 3 months of the selected surface for noise mitigation being installed.</p> <p>e) All reviews are to be provided to the District Council within 10 days</p> <p>e) The outcome of the reviews required by clause (a) and clause (b) must be provided to the District Council within ten (10) working days of the review being completed.</p>
<p>DRN5</p>	<p>Audio tactile profiled road markings</p> <p>a) Audio tactile profiled road markings must not be used within 200 metres of any PPF.</p>
<p>DRN6</p>	<p>Building modifications</p> <p>a) Prior to commencement of construction, a suitably qualified and experienced person or persons must identify those PPFs that are predicted to be in Category B and Category C with the low-noise road surfaces and noise barriers required by Conditions DRN1 and DRN2.</p> <p>b) The requiring authority must write to the owner of the PPFs identified under clause (a) and request access to their property for the purpose of investigating building modifications to reduce internal noise in habitable spaces to achieve 40 dB $L_{Aeq(24h)}$.</p> <p>b) Where access is granted under clause (b), a suitably qualified and experienced person or persons must inspect the PPF and perform sound insulation testing in order to identify building modifications to reduce internal noise.</p> <p>c) Following completion of an investigation required by clause (c), the requiring authority must write to the property owner and:</p> <ol style="list-style-type: none"> i. offer options for building modifications to achieve internal noise levels below 40 dB $L_{Aeq(24h)}$; OR ii. advise that no building modifications are necessary to achieve internal noise levels below 40 dB $L_{Aeq(24h)}$.

Condition Number	Condition
	<ul style="list-style-type: none"> d) Where options for building modification are offered under clause (c), the property owner may select a preferred option and the requiring authority must complete the work as soon as reasonably practicable. e) The requiring authority has complied with Condition DRN6 if: <ul style="list-style-type: none"> i. the access requested under clause (b) is not granted within twelve (12) months of the request; ii. the property owner does not select an option for mitigation within three (3) months of the offer; or iii. an alternate agreement for noise mitigation is reached between the requiring authority and the property owner.
<p><u>DRN7</u></p>	<p><u>Maintenance of structural noise mitigation measures</u></p> <ul style="list-style-type: none"> a) <u>Maintenance of structural noise mitigation measures (barriers and surfaces) shall be undertaken to retain their noise reducing capabilities as far as practicable.</u>
<p>Post-Construction and On-Going Operation</p>	
<p>DPC1</p>	<p>Monitoring and management</p> <ul style="list-style-type: none"> a) Any monitoring and management measures in the Construction Environmental Management Plan required by Condition DCM1 must remain in place for the duration set out in the Construction Environmental Management Plan.

SCHEDULE 1: Referenced drawings

Drawing included in 'Notices of Requirement for a Designation' dated 1 November 2022 'Volume III Drawings and Plans'	Condition Reference
Planting Concept Plans: Indicative Typology	DLV1, RWB3
Planting Concept Plans: RMA Purpose Type	DLV1, RWB3
Ecology Plans	RCM4, RTE1, RTE3, RTE4, RTE5, RTE6, RTE7, REM8
Stormwater: Drainage Layout Plans	RCM4
Stormwater: Catchment Culvert, Swale and Pond/Wetland Schedule	RFE2
Stormwater: Typical Details Swales and Open Channels	REM11
Accommodation Works Plans	RWT1

SCHEDULE 2: Objectives and content of the Construction Environmental Management Plan

Objective	Related Conditions/Standards	Minimum Content				
Construction Environmental Management Plan						
<p>The objective of the Construction Environmental Management Plan is to set out measures that must be implemented to comply with the conditions of the designations and resources consents (as relevant) to appropriately remedy or mitigate, offset or compensate for adverse effects of construction activities.</p>	<p>DCM1, RCM4, RCM5</p>	<p>The Construction Environmental Management Plan must include the management plans set out in Table SCH2-1:</p> <p style="text-align: center;">Table SCH2-1: Management Plans included in the Construction Environmental Management Plan</p> <table border="1"> <thead> <tr> <th>Where the Construction Environmental Management Plan is provided as part of an outline plan to a District Council</th> <th>Where the Construction Environmental Management Plan is provided for information to a Regional Council (with sub-plans being certified)</th> </tr> </thead> <tbody> <tr> <td> <p>Construction Noise and Vibration Management Plan Construction Traffic Management Plan</p> </td> <td> <p>Ecology Management Plan (certified) Erosion and Sediment Control Plan (certified) Construction Air Quality Management Plan (certified)</p> </td> </tr> </tbody> </table> <p>c) The Construction Environmental Management Plan must include, but not be limited to:</p> <ol style="list-style-type: none"> i. the roles and responsibilities of Project personnel and contractors, including a key contact person for the Councils and the details for emergency contact personnel who must be contactable twenty-four (24) hours, seven (7) days a week; ii. the requirements of: <ol style="list-style-type: none"> A. the Waka Kotahi ‘<i>Environmental and Social Responsibility Policy</i>’ (2011); B. the relevant rules and associated standards and/or terms included in the District Plans and Regional Plans; C. the conditions of the designations and resource consents; and D. constraints or restrictions imposed by other authorisations or permissions. iii. a description of the Project, including: <ol style="list-style-type: none"> A. the programme for, and staging of, construction activities; 	Where the Construction Environmental Management Plan is provided as part of an outline plan to a District Council	Where the Construction Environmental Management Plan is provided for information to a Regional Council (with sub-plans being certified)	<p>Construction Noise and Vibration Management Plan Construction Traffic Management Plan</p>	<p>Ecology Management Plan (certified) Erosion and Sediment Control Plan (certified) Construction Air Quality Management Plan (certified)</p>
Where the Construction Environmental Management Plan is provided as part of an outline plan to a District Council	Where the Construction Environmental Management Plan is provided for information to a Regional Council (with sub-plans being certified)					
<p>Construction Noise and Vibration Management Plan Construction Traffic Management Plan</p>	<p>Ecology Management Plan (certified) Erosion and Sediment Control Plan (certified) Construction Air Quality Management Plan (certified)</p>					

Objective	Related Conditions/Standards	Minimum Content
		<ul style="list-style-type: none"> B. the location of site infrastructure including material supply and disposal sites, fencing, site offices, site amenities, temporary lighting, contractors' yard access, equipment unloading and storage areas; C. the design and management specifications for all earthworks on-site <u>including stockpiling of topsoil from earthworks for rehabilitation of earthwork areas, include</u> material supply sites and disposal sites and the source of any imported material; D. the approach to the management of any waste materials, taking into account the waste management hierarchy to reduce, re-use, recycle and recover, along with responsible disposal of residual waste. iv. a description of training requirements for all site personnel including kaitiaki, employees, sub-contractors and visitors; v. Project complaints management measures in accordance with Conditions DCE3 and RCM2; vi. the requirements for compliance monitoring, environmental reporting and environmental auditing; vii. environmental incident and emergency management procedures; viii. an archaeological discovery protocol consistent with Conditions DAH1 and RAH1 or any archaeological authority granted under section 48 of the Heritage New Zealand Pouhere Taonga Act 2014; ix. methods for reviewing, amending, augmenting and updating the Construction Environmental Management Plan consistent with Conditions DGA6 and RCM6; and x. when the Construction Environmental Management Plan is provided for information to a Regional Council, an 'At Risk' or 'Threatened' flora and fauna discovery protocol consistent with Condition REM5.
Construction Noise and Vibration Management Plan		
<p>To set out measures for the development and implementation of the Best Practicable Option for the management and minimisation of noise and vibration effects</p>	<p>DNV1, DNV2 and DNV3</p>	<p>The Construction Noise and Vibration Management Plan must be prepared in general accordance with the requirements of Annex E2 of NZS 6803:1999 and must include, but not be limited to:</p> <ul style="list-style-type: none"> a) the construction noise and vibration criteria that apply; b) a description of the construction activities, including anticipated equipment and processes; c). a description of the likely construction noise and vibration anticipated as a result of construction activities, including tools for on-site predictions of noise and vibration; d) the hours of operation, including times and days when activities causing noise and/or vibration would occur;

Objective	Related Conditions/Standards	Minimum Content
		<ul style="list-style-type: none"> e) identification of PPFs <u>and non-PPFs (occupied and unoccupied buildings)</u> where noise and vibration criteria apply including mapped areas; f). a description of construction equipment operator training procedures and expected construction site behaviours that are to be used to minimise construction noise and vibration (including through the procurement of equipment); g) a description of noise or vibration suppression devices to be used on equipment or processes; h). where any noise or vibration criteria is predicted, or measured, to be exceeded, a schedule setting out the <u>content, how communication with affected receivers is to be undertaken, what process is to be used to determine the BPO management</u>, mitigation and controls required to minimise effects as far as practicable; i) methods and frequency for monitoring and reporting on construction noise and vibration; j) methods to monitor and respond to any effects of construction vibration at the dwelling, known as 'Ashleigh', located at 1024 Queen Street East where the design and implementation of this monitoring is undertaken in conjunction with a suitably qualified and experienced conservation architect. k) reference to the procedures for maintaining contact with stakeholders; notifying of proposed construction activities <u>in advance of any disruptive construction noise or vibration activities, communication with property owners and occupiers in advance of night works</u>; and handling noise and vibration complaints included in the Communications Plan and complaints management procedure set out in Condition DCE3. l) The process for providing information and records of monitoring to the District Council. <u>m) undertake building condition surveys should the construction methodology result in vibration levels approaching Category B (building damage) vibration limits</u> <u>n) The process to review and update the CNVMP on an annual or biannual basis and providing the outcomes of the review to the District Councils.</u> <u>o) The process to provide the District Councils with the ability to recertify the CNVMP should material changes be made to the CNVMP following the review/audit.</u>
Construction Traffic Management Plan		
The objective of the Construction Traffic Management Plan is to	DCT1, DNV1, DNV2	<p>The Construction Traffic Management Plan must be consistent with the Waka Kotahi '<i>Code of Practice for Temporary Traffic Management</i>' (November 2012) and must include, but not be limited to:</p> <ul style="list-style-type: none"> a) the numbers, frequencies, routes and timing of traffic movements associated with construction activities;

Objective	Related Conditions/Standards	Minimum Content
<p>manage property access, construction traffic and safety for all road users associated with construction on a Project wide scale.</p>		<ul style="list-style-type: none"> b) the location and management of site access routes and access points for heavy vehicles; c) the measures to minimise the effects of heavy vehicles passing through communities on local roads, including avoidance of heavy construction traffic passing through communities on local roads at night other than oversized loads and essential deliveries; d) the maintenance of the current provision for pedestrian and cyclists; e) the measures to provide on-going vehicle access to private and adjacent properties, including by forming new permanent accesses at the earliest opportunity; f) the management approach to loads on heavy vehicles, including: <ul style="list-style-type: none"> i. covering loads of fine material; ii. the timely removal of any material deposited or spilled on public roads; iii. limiting or minimising haul distances on public roads. g) construction vehicle management and maintenance procedures, including the <ul style="list-style-type: none"> i. approaches to maintenance and use of construction vehicles in order to limit exhaust emissions; ii. the provision of effective noise suppression devices for engine brakes; iii. the management of dust generated from construction vehicles on unsealed surfaces; and iii. the management of the use of tonal beepers.
Ecology Management Plan		
See Schedule 7		
Erosion and Sediment Control Plan		
See Schedule 8		

Objective	Related Conditions/Standards	Minimum Content
Construction Air Quality Management Plan		
<p>The purpose of the Construction Air Quality Management Plan is to set out the methods and procedures to achieve the standards, required by, Condition RAQ1 and to avoid, remedy or mitigate potential adverse effects of the discharge of odour and/or dust to air as a result of construction activities.</p>	<p>RAQ1, RAQ2 and REW2</p>	<p>The Construction Air Quality Management Plan must include, but not be limited to:</p> <ul style="list-style-type: none"> a) methods and procedures to manage dust as a result of construction activities, including triggers for the implementation of such measures, that may include: <ul style="list-style-type: none"> i. chemical stabilisation or suppression; ii. revegetation of exposed surfaces; iii. the use of water; iv. the covering or otherwise enclosing of materials; v. approaches to the location and management of stockpiles; vi. methods and timeframes to stabilise earthworks; b) the identification of triggers and contingency measures to address identified and verified adverse effects on sensitive receptors; c) procedures for assessing, mitigating and remedying the effects any odorous material that is discovered as a result of construction activities, including methods to: <ul style="list-style-type: none"> i. remove the material to reduce the exposure of odorous sources; and ii. mask the odour; d) procedures for responding to process malfunctions and accidental dust discharges; e) reference to the complaints management procedures set out in Condition RCM2 and details of contingency measures to respond to complaints; f) reference to the construction vehicle management and maintenance procedures in the Construction Traffic Management Plan; g) methods for on-going visual dust monitoring, including the visual inspection of surfaces on neighbouring sites and the maintenance of records alongside observed weather conditions. h) methods to monitor and contingency measures to respond to effects of dust deposition: <ul style="list-style-type: none"> i. at the dwelling, known as 'Ashleigh', located at 1024 Queen Street East where the design and implementation of this monitoring is undertaken in conjunction with a suitably qualified and experienced conservation architect; and

Objective	Related Conditions/Standards	Minimum Content
		ii. at any rainwater collection tank that is used for drinking water purposes. j) <u>Advance communication to potentially impacted property owners and advice of mitigation options</u>

SCHEDULE 3: Objectives and content of the Muaūpoko Management Plan

Objective	Related Conditions/Standards	Minimum Content
<p>The objective of the Muaūpoko Management Plan is to manage the adverse effects of the construction and operation of the Ō2NL Project on the cultural values of Muaūpoko.</p>	<p>DTW3</p>	<p>The Muaūpoko Management Plan must include (but not be limited to):</p> <ul style="list-style-type: none"> a) cultural protocols and procedures for cultural inductions; b) a description of specific monitoring activities to be undertaken, including: <ul style="list-style-type: none"> i. pre-construction survey and monitoring of taonga species and translocation; ii. earthworks oversight; iii. stream diversions; and iv. stream and terrestrial mitigation, offset and compensation areas (including site selection and ongoing involvement); c) confirmation of the roles and responsibilities of personnel in respect of all clauses listed in this management plan. d) details of a ‘Cultural Health Monitoring Framework’; e) approaches to the collection, harvesting and reuse of taonga vegetation, including the removal of dead fauna; f) a kaitiakitanga plan to scope opportunities for participation in seed collection, planting, pest control, fencing and other kaitiakitanga opportunities; g) provision for narrative and cultural connections with the following places to be protected and uplifted (including by placement of signs for wayfinding) at: <ul style="list-style-type: none"> i. Pukehau; ii. Whakahoro; iii. Ohau awa; iv. Wai mārie and Arapaepae; and v. And the overarching narrative of ki uta ki tai; h) provision for narrative and cultural connections with the following species to be protected and uplifted, including, but not limited to: <ul style="list-style-type: none"> i. Ngata; ii. Ngārara; and

Objective	Related Conditions/Standards	Minimum Content
		<ul style="list-style-type: none"> iii. Raupō and harakeke; i) identification of opportunities for future access to provide for the ability for project iwi partners to sustainably harvest resources from their maunga and traditional harvesting grounds; j) a requirement for sharing of information on the location of any Puna are encountered as part of the construction activities; k) any other matters or measures to avoid or mitigate potential impacts on Muaūpoko values, customs and practices; and l) communications protocols and whānau engagement strategy.

SCHEDULE4: Objectives and content of the Ngāti Raukawa ki te Tonga Management Plan

Objective	Related Conditions/Standards	Minimum Content
<p>The objective of the Ngāti Raukawa ki te Tonga Management Plan is to manage the adverse effects of the construction and operation of the Ō2NL Project on the cultural values of Ngāti Raukawa ki te Tonga.</p>	<p>DTW4</p>	<p>The Ngāti Raukawa ki te Tonga include (but not be limited to):</p> <ul style="list-style-type: none"> a) cultural protocols and procedures for cultural inductions; b) a description of specific monitoring activities to be undertaken, including: <ul style="list-style-type: none"> i. pre-construction survey and monitoring of taonga species; ii. seed collection; iii. earthworks oversight; iv. stream diversions; and v. stream and terrestrial mitigation, offset and compensation areas (including site selection and ongoing involvement); c) confirmation of the roles and responsibilities of personnel in respect of clauses (a) and (b); d) details of a ‘Cultural Health Monitoring Framework’; e) approaches to the collection, harvesting and reuse of taonga vegetation, including the removal of dead fauna and the management of disturbed soil that includes leaf litter; f) a kaitiakitanga plan to scope opportunities for participation in planting, pest control, fencing, fish surveys and/or transfer, species monitoring and translocation; g) provision for narrative and cultural connections with the following places to be protected and uplifted (including by placement of signs for wayfinding) at [locations to be confirmed] h) provision for narrative and cultural connections with the following species to be protected and uplifted, including, but not limited to: <ul style="list-style-type: none"> i. [to be confirmed]; i) a requirement to investigate the creation of a native ngāhere as part of the remediation/rehabilitation design of the proposed material supply on the southern bank of the Waikawa Stream (if it is used), and for that native ngāhere to include: <ul style="list-style-type: none"> i. mahi toi such as carved Pou, signage and planting; ii. rongoā and rākau harvest places; and

Objective	Related Conditions/Standards	Minimum Content
		<ul style="list-style-type: none"> iii. recreational walking access to the Stream; iv. The new reserve should be named in a manner that is respectful of kaitiakitanga; j) identification of opportunities for future access to provide for the ability for Project Iwi Partners to sustainably harvest resources from their maunga and traditional harvesting grounds; and k) any other matters or measures to avoid or mitigate potential impacts on tangata whenua values, customs and practices. l) communications protocols and whānau engagement strategy.

SCHEDULE 5: Objectives and content of the Communications Plan

Objective	Related Conditions/Standards	Minimum Content
<p>The objective of the Communications Plan is to ensure that potentially affected parties are communicated with about ongoing design and construction management activities.</p>	<p>DCE1, DCE2, DCE3 and DCE4</p>	<p>a) The Communications Plan must include, but not be limited to:</p> <ul style="list-style-type: none"> i. the details of the community liaison person or persons appointed under Condition DCE1, including the ways in which their contact details will be made accessible to all members of the community; ii. a list of stakeholders, organisations, businesses and residents who will be communicated with; iii. topics of communication, including but not limited to: <ul style="list-style-type: none"> A. proposed hours of construction activities where these are outside of normal working hours or on weekends or public holidays, including night-time heavy vehicle movements; B. proposed routes for construction vehicles, including the total number of vehicles, proportion of heavy vehicles and the times of day these routes will be used; C. the Project complaints management measures in accordance with Condition DCE3; D. any temporary traffic management measures, including disruption of, or changes to, pedestrian and cycling routes and the reinstatement of those routes; E. general conceptual design matters including but not limited to landscaping, rest areas, viewing points, and the shared use path; F. predicted noise levels and associated mitigations, including construction, temporary and on-going road-traffic noise and monitoring activities G. progress of construction activities relative to key project milestones and completion dates. v. the communications platforms to be used, and the programme for their use, including: <ul style="list-style-type: none"> A. a Project website that is used for providing information to the public; B. the planned publication of newsletters, and associated newsletter delivery areas; C. Project information days, open days or other mechanisms to facilitate community engagement; D. newspaper advertising; and

Objective	Related Conditions/Standards	Minimum Content
		<p>E. targeted notification and consultation with road user groups, business owners and operators and individual property owners and occupiers with premises/dwellings located within 100 metres of active construction activities, including identified PPFs.</p> <p><u>vi) A regular programme of meetings with the community, stakeholders and affected landowners</u></p>

SCHEDULE 6: Methodology for revised assessment of visual effects

The methodology that applies to the revised assessment of visual effects from dwellings required by Condition DLV2 is as follows:

1. The assessment must be undertaken by a suitably qualified and experience person or persons.
2. The assessment must be consistent with the concepts, principles, and approaches in *‘Te Tangi a te Manu – Aotearoa New Zealand Landscape Assessment Guidelines’* Tuia Pito Ora/New Zealand Institute of Landscape Architects, June 2022 and must:
 - a) assess effects from all dwellings within 400 metres of the proposed highway carriageway, except that in urban areas the assessment is to be limited to those dwellings on the highway edge of the urban area;
 - b) estimate effects using desk-top analysis and roadside observation;
 - c) describe the nature of the effect from each dwelling and assess its magnitude having regard to the following factors:
 - i. distance from the carriageway;
 - ii. apparent orientation of the dwelling;
 - iii. the nature of the highway in the relevant outlook;
 - iv. the extent of existing screening or softening by vegetation or buildings; and
 - v. the presence of elements in the foreground and middle-ground that contribute to depth perspective.
 - d) describe the magnitude of effect using the following seven-point scale.

Very low	low	low-mod	moderate	mod-high	high	very high
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 - e) For each dwelling, describe the effectiveness of mitigation that is described in the outline plan and adjust the assessment of the magnitude of effect to reflect the mitigation.

SCHEDULE 7: Objectives and content of the Ecology Management Plan

Objectives	Related Conditions/ Standards	Minimum Content
Ecology Management Plan		
<p>The objective of the Ecology Management Plan is to address the potential adverse effects of the Ō2NL Project, including construction activities, on ecology and indigenous biological diversity values, including by achieving the standards in the relevant conditions of these resource consents.</p>	<p>RTE1, RTE2, RTE3, RTE4, RTE5, RTE6, RTE7, REM1, REM4, REM5, REM6, REM7, REM8, REM9, REM11, REM12, REM13, REM19</p>	<p>The Ecology Management Plan must include, but not be limited to:</p> <ul style="list-style-type: none"> a) the identification of key personnel, including their roles and responsibilities; b) a summary of the ecology and indigenous biodiversity values of the Project Area and the potential adverse effects of the Project on these values; c) a summary of the approaches taken to the management of adverse effects on ecology and indigenous biodiversity values; d) site staff induction procedures in respect of ecology, including measures to prevent the introduction of pest plants and pest animals; d) a description of consultation undertaken with the Project Iwi Partners and the Department of Conservation, including details of how the Ecology Management Plan responds to matters raised during consultation; e) approaches to the management of vegetation clearance through: <ul style="list-style-type: none"> i. vegetation clearance protocols that include demarcation, timing of clearance; and supervision requirements; ii, setbacks for the storage of sawdust, chip or mulch near water bodies; ii. procedures and timing for the direct transfer of raupō reedland, indigenous fernland (weltand), and rautahi sedgeland; iii. opportunities for the salvage and reuse of plant material and soils; f) vegetation type, planting descriptions, outcomes and methods for establishments including: <ul style="list-style-type: none"> i. a planting guide that sets out: <ul style="list-style-type: none"> A. the source of plants from the rohe or relevant ecological districts, including a propagation guide or, where this is not possible, a process

Objectives	Related Conditions/ Standards	Minimum Content
		<ul style="list-style-type: none"> to confirm alternative sources with the Project Iwi Partners and the Regional Council; B. plant specifications; C. species mix; D. nursery requirements; E. methods, plant numbers, spacing, density and timing of planting; F. approaches to livestock exclusion. ii. pest plant and animal management; iii. an establishment programme and performance targets; iv. planting monitoring and maintenance approach and timeline; v. the location and legal arrangements for the planted areas; vi. approaches to reducing the potential for bird strike from vehicles through plant species selection along the highway; and vii. opportunities for the participation of the community in planting. g) measures to manage the biosecurity requirements in Condition RTE11; h) the procedures for pre-construction avifauna surveys; i) approaches to the management of potential effects on indigenous birds specific to species and habitat type including: <ul style="list-style-type: none"> i. constraints on vegetation clearance; ii. deterrents; iii. exclusion zones; iv. supervision; and v. responses to accidental harm. j) a description of the methodology for lizard survey, capture, transfer and release, including: <ul style="list-style-type: none"> i. the identification of habitats for survey; ii. protocols for lizard salvage prior to, and during, vegetation clearance; and

Objectives	Related Conditions/ Standards	Minimum Content
		<ul style="list-style-type: none"> iii. protocols for surveys post clearance in any location where more than ten (10) lizards are found; k) approaches to lizard injury and/or mortality; l) procedures for pre-construction survey capture and relocation to identified closest similar habitats of 'At Risk' or 'Threatened' indigenous invertebrate species as defined by the Department of Conservation New Zealand Threat Classification System, including the following 'Not Threatened' invertebrate species: <ul style="list-style-type: none"> i. Wainuia (<i>Wainuia urnula</i>); ii. Peripatus (<i>Peripatoides novaezealandiae</i>); iii. Auckland tree wētā (<i>Hemideina thoracica</i>) iv. Wellington tree wētā (<i>Hemideina crassidens</i>) v. Cave wētā (<i>Pleioplectron hudsoni</i>) vi. Stick insects (<i>Clitarchus</i> spp.). m) A summary of offset and compensation actions to inform Ecology Offset Site Layout Plans, including specific monitoring and reporting requirements and incident reporting; n) the identification of areas, methods, targets and duration for pest plant and animal management; o) the Lizard Relocation Area Management Plan; p) the Freshwater Ecology Management Plan; and q) monitoring and reporting requirements.
Freshwater Ecology Management Plan		
<p>The objective of the Freshwater Ecology Management Plan is to achieve the standards set out in Conditions RFE1, RFE2 and RFE4 and to avoid, remedy,</p>	<p>RFE1, RFE2 and RFE4</p>	<p>The Freshwater Ecology Management Plan must include, but not be limited to:</p> <ul style="list-style-type: none"> a) the identification of key personnel undertaking the implementation of the Freshwater Ecology Management Plan, including their roles and responsibilities;

Objectives	Related Conditions/ Standards	Minimum Content
mitigate and offset adverse effects on freshwater ecology.		<ul style="list-style-type: none"> b) fish recovery protocols to provide procedures for the salvage and relocation of fish including opportunities for the Project Iwi Partners participate in the recovery and relocation of Taonga species; c) site-specific guidance of fish migration and spawning times; d) confirmation of culvert designs that provide fish passage; e) approaches to on-line stream works that, where such works cannot be avoided: <ul style="list-style-type: none"> i. provide temporary fish passage; and ii. manage the timing of works in respect of site conditions and to avoid peak fish migration and spawning seasons. f) approaches to stream creation and enhancement; g) a programme of aquatic ecology monitoring that, for fine sediment and macroinvertebrate community data defines locations, methods and sampling frequency before, during and after construction; and h) post-construction measurement and monitoring of fish passage parameters at culverts and through new stream reaches.
Lizard Relocation Area Management Plan		
The objective of the Lizard Relocation Area Management Plan is to describe the approach to the establishment and management of the Lizard Relocation Area required by Condition REM10.	RTE5 and REM10	<p>A Lizard Relocation Area Management Plan must include, but not be limited to:</p> <ul style="list-style-type: none"> a) the vision and objectives, governance, stakeholders for the area, b) a description of the ecological values to be protected or enhanced; c) the specifications of the predator-proof fence construction, including access and recommended maintenance; d) details of pest animal and plant eradication methods, including targets for eradication; e) details of monitoring for pest animal incursions; and f) details of habitat restoration and enhancement activities.

SCHEDULE 8: Objective and content of the Erosion and Sediment Control Plan

Objective	Related Conditions/ Standards	Content
Erosion and Sediment Control Plan		
<p>The objective of the Erosion and Sediment Control Plan is to identify the overarching erosion and sediment control principles and procedures to be implemented to achieve compliance with the standards included in the related Conditions.</p>	<p>RES1, RES2, RES9 and RES10</p>	<p>The Erosion and Sediment Control Plan (including all appended sub-plans) must include, but not be limited to:</p> <ul style="list-style-type: none"> a) the identification of key personnel, including their roles, responsibilities, training and contact details; b) the overarching erosion and sediment control design standards and principles with reference to '<i>Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region</i>' June 2016 Guideline Document 2016/005 Version 2; c) a general description of the stages of, and sequencing of, works; d) the approach to implementing, changing and decommissioning erosion and sediment control measures with reference to Site-Specific Erosion and Sediment Control Plans; e) the outcomes of consultation with the Project Iwi Partners; f) the overarching approach to monitoring, responses and corrective actions; g) procedures to change or update the ESCP and supporting documents; h) the following supporting documents: <ul style="list-style-type: none"> i. Chemical Treatment Plan; ii. Erosion and Sediment Control Monitoring Plan; iii. Dewatering Management Procedure; iv. Emergency Spill Response Procedure; and v. Stream Works Procedure; vi. Hazardous Substances Procedure.

Objective	Related Conditions/ Standards	Content
Chemical Treatment Plan		
<p>The objectives of the Chemical Treatment Plan is to provide an approach for determining the effectiveness and dosing rates for chemical treatment to enhance the efficiency of erosion and sediment control measures</p>	<p>RES1 and RES9</p>	<p>The Chemical Treatment Plan must include, but not be limited to:</p> <ul style="list-style-type: none"> a) a methodology for testing and chemical treatment; b) a description of the flocculation system and when it is required; c) approaches to monitoring, maintenance, recordkeeping and reporting.
Erosion and Sediment Control Monitoring Plan		
<p>The objective of the Erosion and Sediment Control Monitoring Plan is to provide an approach to monitoring the efficiency and effectiveness of erosion and sediment control measures to achieve the standards in Conditions RES1 and RES9</p>	<p>RES1 and RES9</p>	<p>The Erosion and Sediment Control Monitoring Plan must include, but not be limited to:</p> <ul style="list-style-type: none"> a) a description of weather monitoring; b) approaches to regular and rain event site inspections; c) methodologies for water sampling, including in respect of spot monitoring required by Condition RES9; d) management responses to any exceedance of the performance targets in Condition RES1; and e) approaches to site auditing and requiring requirements including as part of the annual report and trigger event reporting.
Dewatering Management Procedure		
<p>The objective of the Dewatering Management Procedure is to provide methodology for dewatering to achieve the standards in Condition RGW1.</p>	<p>RES1 and RGW1</p>	<p>The Dewatering Management Procedure must include, but not be limited to, a description of procedures for undertaking dewatering activities.</p>

Objective	Related Conditions/ Standards	Content
Emergency Spill Response Procedure		
<p>The objective of the Emergency Spill Response Procedure is to establish procedures to manage accidental chemical and oil spills.</p>	<p>RCM4 and RES1</p>	<p>The Emergency Spill Response Procedure must include, but not be limited to:</p> <ul style="list-style-type: none"> a) approaches to preventing fires, explosions and chemical or oil spills; b) responses to fires, explosions and chemical or oil spills; c) details of emergency contacts.
Stream Works Procedure		
<p>The objective of the Stream Works Procedure is to provide an approach for stream diversion and culvert installation to achieve compliance with Conditions RFE1, RFE2, RFE4, RWB1 and RWB2</p>	<p>RES1, RFE1, RFE2, RFE4, RWB1 and RWB2</p>	<p>The Stream Works Procedure must include, but not be limited to a methodology for undertaking stream diversions include the provision for fish passage.</p>
Hazardous Substances Procedure		
<p>The objectives of this HSP is to manage hazardous substances at the Project site to meet statutory requirements and to avoid potential adverse effects on the environment and health and safety of people.</p>	<p>RCM4 and RES1</p>	<p>The HSP must include, but not be limited to:</p> <ul style="list-style-type: none"> a) the identification of key personnel, including their roles, responsibilities; b) hazardous substances register and recordkeeping procedures; c) approaches to the storage of hazardous substances; d) refuelling procedures; e) approaches to concrete works.
Site-Specific Erosion and Sediment Control Plans		
<p>The objective of Site-Specific Erosion and Sediment Control Plans is to put in place the Erosion and Sediment Control Plan by</p>	<p>RES1, RES2, RES5 and RES10</p>	<p>Site-Specific Erosion and Sediment Control Plans must be prepared in accordance with '<i>Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region</i>' June 2016 Guideline Document 2016/005 Version 2 or as</p>

Objective	Related Conditions/ Standards	Content
<p>providing the design details for all erosion and sediment control measures to be implemented within a particular area.</p>		<p>otherwise required by the conditions of these resource consents and must include, but not be limited to, the following:</p> <ul style="list-style-type: none"> a). contact details of the person or persons responsible for the Site-Specific Erosion and Sediment Control Plan; b). a description of the construction activities to be undertaken; c). a description of the outcomes of any consultation with the Project Iwi Partners; d). a site contour plan of a suitable scale to identify: <ul style="list-style-type: none"> i. the location of waterways; ii. the extent of soil disturbance. iii. any exclusion or buffer area where works will not occur; iv. areas of cut and fill ; v. locations of topsoil and cleanfill stockpiles; vi all key erosion and sediment control structures; vii the boundaries and areas of catchments contributing to all stormwater impoundment structures; and viii any other relevant site information; the design criteria, calculations and dimensions of all key erosion and sediment control structures; e). construction timetable for the erosion and sediment control works and the bulk earthworks proposed, including any staging proposed; f). a detailed methodology for any stream works and culvert installation, including sizing calculations and drawing of stream diversions; and g). temporary and permanent stabilisation methodologies.

APPENDIX 14

COMBINED NOR AND RESOURCE CONSENTS SECTION 92 FURTHER INFORMATION REQUEST



9 December 2022

Waka Kotahi NZ Transport Agency
PO Box 1545
Wellington 6140
Via email: Caitlin.Kelly@nzta.govt.nz
Cc: environmentalplanning@nzta.govt.nz

Dear Caitlin,

Resource Consent Application:

Horizons Regional Council - APP-2021203231.00 & Greater Wellington Regional Council - WGN230122

Notice of Requirement:

Horowhenua District Council – 504/2022/22 & Kapiti Coast District Council - RM220254

Thank you for your resource consent application in regards to the Otaki to North of Levin Highway Construction Proposal lodged on 2 November 2022 with the above Councils. The application has been assessed and it has been determined that in order to fully assess the effects of the project additional information is required.

The additional information is listed below and is requested under Section 92(1) of the Resource Management Act (the Act):

MWRC – Surface water takes

1. a) The Applicant has outlined that part of the water demand strategy is to utilise water that becomes available to the project through existing consented takes on land that is acquired to allow construction of the O2NL project. The application has not outlined if and/or how the surface water allocation/abstraction will be reduced if water is acquired through these means. Can the Applicant please provide an estimate of how much water is expected to become available through this process? (The regional council can supply consents information to assist with this assessment)

- b) If additional water is expected to become available to the Applicant through the utilisation of existing consented takes on land that is acquired to allow construction of the O2NL project, can the Applicant please outline a strategy to reduce the amount of water taken and/or consented to be taken from the rivers to ensure an efficient allocation of water?

2. An audit of the allocation information for the Ōhau River has revealed that there is no water remaining in the core allocation. This change is due to uncertainty around the degree of surface water connection of a bore that is currently going through the renewal process. Until the degree of connection can be established, it is necessary to take a cautious view and assume that the bore will have a degree of connection to surface water that would result in the bore being managed under the surface water allocation framework, and the Ōhau River becoming fully allocated. Therefore, any proposed abstraction from the Ōhau River at this time will be treated as a proposed over allocation, and a non-complying activity (Rule 16-8). Can the Applicant please advise how they would like to proceed? Please note that there is currently capacity within the Waikawa Stream core allocation to accommodate an additional 409 m³/day (i.e. the amount initially proposed to be taken from the Ōhau River). If the Applicant wishes to proceed with the application to take water from the Ōhau River, a full assessment of effects will be required.
3. How is the Applicant intending to manage and comply with the proposed condition RWT1? The response to this question should address:
 - a. Will the Applicant install flow monitoring sites at the proposed abstraction points? Please note these will need to be up to NEMS standard.
 - b. If monitoring sites will not be located at the point of abstraction (i.e. if the Applicant is going to rely on existing flow monitoring sites), can the Applicant please illustrate how the flows measured at the respective flow monitoring sites are representative of the flows at the points of abstraction? The response to this should consider the points highlighted under point 3.
 - c. Will the rate of abstraction be scaled automatically or manually?
4. Can the Applicant please outline the proposed rate of take from each of the two abstraction points in the Manakau subzone? Is the proposed rate of take to be split evenly between the two abstraction points, or is the proposal to be able to abstract this full volume from either of the two abstraction points?
5. Section 14.4.8.2 of Volume II Supporting Information and Assessment of Effects on the Environment outlines that the water will be taken on a 'continuous trickle' basis. Presumably, this would mean that the maximum daily volume is abstracted evenly over a 24 hour period. Section 4.7.6.8 of Appendix Four DCR states that the daily volume will be taken over the course of 12 hours. However, in some rivers, the maximum abstraction rates sought allow the water to be taken in much less time. Given that storage will buffer the timing of the supply of and demand for construction water, can the Applicant please explain why the

water cannot be taken continuously over a 24-hour period (when the storage ponds aren't full), rather than sporadically in <12 hour periods as requested?

6. Appendix 4.7 of Appendix 4 (Design and Construction Report) states that '*the Project Aquatic Ecologist should provide advice as to the maximum rates of abstraction that can be sustained at any specific site without affecting instream values significantly*'. Has this information been provided? If not, could this be provided please? The assessment should consider the effects of the maximum rates of take sought in the wider context of the level of allocation in the relevant water management subzone and existing takes. This assessment should be done at the point(s) of abstraction and at the most sensitive downstream environment.
7. Further to point 6, can the Applicant please provide an assessment of the effects of the proposed abstractions on other water takes? This assessment should pay careful attention to the potential effects on other water takes in highly allocated areas, where the proposed instantaneous rate of take as a proportion of river flow is disproportional to the proportion of the core allocation being sought, and where there are losses to groundwater downstream of the abstraction point.
8. Can the Applicant please provide an assessment of the proposed supplementary allocation against Policy 5-17(b)?
9. Can the Applicant please illustrate how the proposed regime represents an efficient allocation of water? This should take into account all sources of water being sought (i.e. from all river systems and from both the core and supplementary allocation), the amount of proposed storage, and the amount of time expected to be in minimum flow restrictions (based on historical records).
10. Table 11 of Appendix 4.7 of Appendix 4 (Design and Construction Report) states that the core allocation will be limited to 3,900 m³/day across all rivers and streams. Can the Applicant please explain how this will be managed, given the total volume being sought across all rivers systems is 5,900 m³/day? This issue should also be considered in the response to question 9.

GWRC – Surface water takes

11. How is the Applicant intending to manage the operation of the abstraction to comply with the proposed condition RWT1? Can the Applicant please provide details on:
 - a. What streamflow monitoring site is proposed to be used?

- b. Will the rate of abstraction be scaled automatically or manually?
 - c. How frequently will abstraction settings be reviewed and changed if necessary to adjust for natural flow changes?
 - d. Is it intended that the take operate as a 24 hour trickle feed or at a higher intermittent (e.g. 12 hour on/off) rate? (refer to Q5 from MWRC for context)
12. What is the Applicant's assessment of the natural flow rates (L/sec) at SH1 and at Taylor's Road Bridge when flow at the GWRC monitoring site is measuring between 140 L/sec (the minimum flow) and about 500 L/sec (median flow)?
13. Can the take regime be operated and scaled in such a way that abstraction rate at SH1 does not exceed 10 per cent of stream flow at the most sensitive downstream reach (indicatively considered to be in the Taylor's Road Bridge area)?
14. Can the Applicant please provide any existing advice from the Project Ecologist about the impacts of the proposed regime in order to demonstrate no more than minor effects? This should be made with reference to:
- a. the most sensitive downstream reaches where flows are naturally lower than at the point of abstraction;
 - b. flow depletion associated with the take operating at maximum proposed instantaneous rates and daily volumes;
 - c. how the change in the frequency, magnitude and duration of flows downstream would impact flow-dependent stream values and functions?

MWRC and GWRC – Terrestrial Ecology

15. Can the Applicant please describe the present state and condition of the areas to be restored within Te Ripo o Hinemata?
16. A draft Ecological Management Plan (EMP) was not included in the material lodged. Does the absence of the draft EMP impact on the conclusions reached by the bird and invertebrate experts as to adequacy of the mitigations discussed in their reports?

17. There appears to be an inconsistency between, (as an example) the high value of Kohekohe-titoki-karamu forest for lizards Table 4, Appendix J.6 versus a moderate value for the same forest reported in Table J.1a Appendix J.0. Is this apparent inconsistency as to the level of ecological value of habitats material to the magnitude of effects assessment and the degree offsetting required, material to the assessment?
18. What is the residual effect for the loss of "Gravelfield" habitat (TG1) and how will this loss be offset (if it is above the "low" threshold)?
19. For wetland transfers, if the transfer is unable to take place (as potentially implied by "*where needed and practicable*" per Para 203, Appendix J.0), does this increase the threshold of loss above "irreplaceable"?
20. How does the Applicant propose to manage pest plants across all lands under the jurisdiction of the Project at time of construction, including all potential pest plant species (environmental, agricultural, and amenity) where incursion or spread is exacerbated by the Project's activity (including inactivity on acquired lands or loss of control intensity as a result of the change in tenure)?
21. With reference to Para 205, Appendix J.0, how are the opportunities to maximise connectivity and quality to be implemented and is there a threshold of "maximise" below which the ecological mitigations are less than anticipated?
22. Why has percent survivorship been used for natural character and landscape plantings in preference to the simpler approach to using percent cover across all planting plans, particularly when it appears the intent is to integrate as much planting as possible to "maximise" connectivity?
23. A planting specification has not been provided as part of the application, therefore it is difficult to assess whether the statement that the proposed tree land offset (by number of trees) is the more conservative approach (as opposed to offset by area) (Para 269). Could the Applicant please provide additional information on this matter, including the anticipated planting spacing for tree and shrub species across the project?
24. The residual effect on the Australian bittern is assessed as "moderate" and includes potential ongoing mortality effects (Para 227, Appendix J.0). How are the potential ongoing mortality effects on Australasian bittern catered for in the proposed offsets?
25. Para 273, Appendix J.0 states "*Prior to the commencement of construction works, it is proposed to use compensation to achieve Net Gain...*" Is this intended to

imply that the planting at the offset sites will commence prior to construction, or that offsets will demonstrate net gain prior to construction?

26. What is the level of risk that the accidental discovery of contaminated land will affect the instigation of ecological mitigation, ecological offset, natural character and landscape planting?
27. How will it be ensured that there is sufficient retention of water in the open water offset area to achieve the biodiversity outcomes proposed?

MWRC and GWRC Water Quality

Technical Assessment K – Freshwater Ecology

28. Could the Applicant please provide further information/clarification on the linkage between the proposed clarity standard/trigger at the end of the sediment treatment devices (100 mms) and how this proposed clarity standard/trigger links to the proposed instream standard of no greater than a QMCI change of 15% during the operation of the project or greater than 20% at the completion of the project?
29. The proposed consent condition RFE4 requires if there is a decrease in the receiving environment of greater than 15% for QMCI that response action(s) set out in the EMP and ESCP are implemented so the trigger levels are no longer exceeded. Can the Applicant please advise:
 - a. Is the implementation of the action(s) timebound? At what time period should we see an improvement above the trigger level? If this improvement is not meet, what options then become available in terms of managing or offsetting the effect?
 - b. The condition requires a comparison to baseline data for the sites. Over what time period is this baseline data to be collected and how will assessment against the trigger be assessed i.e. how does the applicant propose to assess the monitoring data results against the baseline information collected? Given the proposed road placement, has the Applicant considered the use of upstream vs downstream monitoring sites to potentially account for different climatic conditions and the associated effects on macroinvertebrate communities during the baseline collection period vs the proposed construction period?
30. At Table K11 (Pages 71 – 75) one of the proposed management actions to manage effects is to *“avoid where practical, any instream works or diversion at*

key migration times of the fish species known to be present at a site". Could the Applicant please advise:

- a. Does this apply only to upstream migration?
- b. Will the information collected through eDNA will be used to define those species, or if surveys will be undertaken at the site?
- c. Can the Applicant please also provide a calendar of expected species in the works envelope and what the key migration period is for each of the species?

31. At Paragraph 16 (Page 7), where ephemeral waterways have permanent habitat upstream, the application notes that *"may use a flexible baffle design to facilitate fish passage at times when there is surface water following"*. Is the proposal to allow this?

32. The technical assessment for the Freshwater Ecology uses the EclAG matrix for the assessment of effects. While this may be a useful tool to inform the effects of the proposal, this method also relies on defining a time period over which effects may be seen and then defining them as temporary, short, medium, or long term. At Para 169 (Page 91) the effect is considered in relation to the effects and associated timescales that have been developed within the EclAG. In river systems timescales are different to terrestrial environments, timescales for freshwater should be based on those aquatic organisms that would be expected to be found in the receiving such as macroinvertebrates and fish species. For example, redfin bully has an average lifespan 3 years, inanga usually 1 year. A short-term temporary effect can be up to 5 years, and a long-term temporary effect up to 15-25 years with the use of the EclAG timescales. Does the Applicant consider that these are appropriate for freshwater ecosystems which in general have a shorter timescale over which effects can occur and also recover from? Considering the freshwater species that are expected downstream of the alignment and their lifespan would this change the nature of the assessed effect/s?

33. The offsetting methodology has used the SEV to calculate the value of the lost stream length and the volumes required to offset the effect. In order to fully understand the proposed quantum proposed to be offset and ensure a net gain, could the Applicant please clarify the following points in relation to paragraph 77 of the Freshwater Ecology Assessment:

- a. Para 77(c) – the Vshade measure is considered high for planted riparian zones greater than 20 metres, however, anything lower than this was given moderate. Was this same moderate rating applied to the widths that are lower than 5 metres (between the 5 and 3 metre distance)? At a riparian zone of only 3 to 5 metres will the Applicant be able to have

vegetation shading the stream that could be considered moderate especially given the limited space to enable the growth of larger shading trees? Would it be more appropriate for 20 metres to be high, 15 – 20 to be moderate, and then 3- 5 metres to be either low or low-moderate?

- b. The same questions also applies to 77 (d), (e), and (h)? In this regard should there be a greater number of categories that reflect the various riparian widths that are proposed to be used? This to reflect that as the riparian width becomes less the benefit to the stream reduces and that at the lower distances especially at three metres the improvement is less than say at 15 metres?
34. Para 142 (d) (Pages 65-67) makes a number of references to meanders being created into the new stream channels and that these are included through into the Volume III drawings. Some of the wording in this section of the report infers that they should occur. Can the Applicant please advise as to sections 142 (d) (i to vii), which are proposed to definitely occur and for the others which require more detailed design to occur?
35. Table K12 (Pages 77-81) - refers to works for a number of the ephemeral channels with the wording *“undertake works when no water is present to minimize risk of sediment being transported to downstream freshwater habitats”*. While this is an effective way to avoid the associated effect, can the Applicant please advise if this is taken through into the proposed consent conditions, the ESC measures, and is possible in a project of this scale?
36. In relation to fish passage there appears to be some disconnect between Technical Assessment K and the reference to the *“Catchment Culvert, Swale and Pond/Wetland Schedule” VIII* in the proposed consent conditions? Technical Assessment K refers to stream name/code 39.2, 34.5, 27.1, 9, 6.1. This does not appear to be referenced in *Catchment Culvert, Swale and Pond/Wetland Schedule” VIII*. Can the Applicant please clarify?
37. For fish passage at temporary structures, it is observed that fish passage will only be provided if the structure/diversion is in place for a period more than seven days. Technical Assessment K does not mention a timeframe which fish passage cannot be provided for. Can the Applicant please expand on why seven days is considered appropriate?
38. Para 158 (Page 82) refers to a discussion in the next para – the para is missing, could this please be provided?
39. At Para 168 (Page 91) it is noted that deposited sediment effects after effects management will be moderate for Stream 17 and 19. Does the Applicant propose

to undertake additional Sediment and Erosion Control measures within these catchments to further reduce these effects?

40. Para 173 (Page 192) states that pre-construction, baseline monitoring should begin as soon as possible to capture potential site variability. Does the applicant have a timeframe around when this monitoring will start? The proposed consent conditions rely on this information in the development of triggers/standards for effects in stream so having the natural variability accounted for in these triggers/standards will be important.
41. Para 194 (Page 105) states that culverts that have been designed based on the stream stimulation culvert design will also have a riparian zone upstream and downstream that is planted. This is proposed to be for the length of stream within the designation. Would the Applicant please identify the condition that addresses the intent of Para 194?
42. Para 209 (Page 117) refers to the potential for offsetting for outlet structures which discharge stormwater from treatment facilities, but that this will not be confirmed until detailed design. However, the linkage to ensure this occurs within the conditions is not clear. The revision of offset measures in proposed condition REM11 allows for revision though conditions ROC18 (which is assumed to be REM18) however, the condition does not specifically include the potential offsetting of the outlet structures. Could the Applicant please expand on how this proposal in para 209 is reflected in the conditions?
43. Para 214 (Page 118), in relation to the creation of diversion channels could the Applicant please provide information on how they will ensure that any stream channels created as a part of the project will ensure that flows especially during low flows remain at the bed level and that flows do not completely go below the upper bed layer?
44. Para 228 (Page 121), refers to riparian planting of the streams to mitigate light pollutions effects, and in particular the four streams in close proximity to the artificial lighting. Could the Applicant please provide the reference in the proposed consent conditions that reflect this riparian planting to help manage this effect on flying insects?

Technical Assessment H – Water Quality

45. Regarding Para 50 (Page 26), as all of the appeals have been determined by consent order and are deemed operative, could the Applicant please undertake an assessment of:

a) The current state of the waterways affected by this proposal within the Greater Wellington Region in comparison to the attribute states (objectives) in Table 3.4 River and Streams, in Objective O19 of the Proposed Natural Resources Plan (PNRP)?

b) How the attribute states will potentially change in comparison to Table 3.4 as a result of the proposal?

c) Policy P79 of the PNRP, noting that this policy excludes discharges from operational stormwater, but not from other works such as earthworks.

46. At Para 52 (Page 27) it states, “Based on monitoring results, we have assumed a lower hardness value of 20 mg/L for the Manakau, Waiuiti, Waikawa, Kuku Streams and Ohau River.” Referring to the monitoring data provided with the application, could the Applicant please advise if the Manakau and Waiuiti more closely align with the default of 30 mg/L?

47. Figure H.3 (Page 40) would the applicant please be able to clarify which of the colours in the graph represent flows vs turbidity?

48. Building on the capture of baseline information identified in Technical Assessment K at Para 118 it is noted that catchments B (Waitohu), C (Waitohu), I (Mangahuia) are identified as a high priority for monitoring due to the risk of sediment release from earthworks and high ecological values. Has this recommendation been carried through into any proposed monitoring regime for the proposal?

49. At Para 155 (Page 59) it is noted “for receiving tributaries in catchment P, M and I the total impermeable area indicates a potential risk of adverse ecological effects from changes in hydrology or temperature for these streams. The risk is partially mitigated with the use of the proposed stormwater treatment devices and could be further mitigated with infiltration”. Is this further mitigation proposed to be undertaken?

MWRC and GWRC Water Sensitive Design

50. Section 20 of the Technical Assessment H (Water Quality) states that over 95% of the highway will receive some form of treatment, the drawings provided do not clearly show the areas that are not receiving treatment. Could the Applicant please provide a clear plan(s) showing areas of the proposed road which will not receive full stormwater treatment and comment where these may be in proximity to freshwater receiving environments?

51. Could the Applicant please confirm that the “*Total Pond facility footprint area*” column from the relevant table on Drawing number: 310203848-01-300-C3001 correlates directly with the light blue stormwater wetland polygons from the drainage layout plans?
52. Could the Applicant please confirm that space for batter slopes (which reflect topography), bunds and maintenance access has been allowed for in the nominated treatment areas and that the polygons will support a functional wetland form (shape).
53. Could the Applicant please confirm that no proposed stormwater infrastructure where infiltration may occur (unlined swales and infiltration systems) will be intersecting any area of contaminated soil which could mobilize hazardous substances into groundwater?
54. Could the Applicant please clarify the sizing methodology for wetlands and comment on target rainfall events and inclusion of extended detention to support intended wetland function?
55. Could the Applicant please advise as to what consideration has been given to the influence of vegetated swales on stormwater volumes (retention of runoff in small rainfall events) and whether this has implications for the detailed design and operation of downstream constructed wetlands?
56. Could the Applicant please confirm that shallow groundwater levels will not impact the construction or operation of proposed lined treatment wetlands?
57. Could the Applicant please confirm whether the wetland forebays will be lined and could therefore draw down between rainfall events which could lead to further flows not reaching the wetland and potentially infiltration of dissolved contaminants to groundwater?
58. Could the Applicant please provide additional information on the current typical online arrangement which shows the forebay being online to all inflows which is likely to result in accumulated contaminates being re suspended and flushed through to soakage area?
59. Could the Applicant please provide additional information on the reasoning for including attenuation of runoff to predevelopment flowrates in locations where discharge is directly to soakage? It appears that attenuation could be required where infiltration rates limit the overall infiltration volumes during rainfall events but it appears there is no requirement for infiltration to align with a pre

developed flowrate such as is required where discharge is to an open stream or similar receiving environment?

60. Could the Applicant please provide justification for wetland design arrangement which separates the sediment forebay, wetland body and detention basin using bunds and pipe connections, these features could be better configured to reduce maintenance requirements and the risk of blockages?

MWRC and GWRC – Hydrogeology and Groundwater

Technical Assessment G - Hydrogeology and Groundwater

61. The Technical Assessment G at Paras 188 and 189 states;

188. The modelling indicates that dewatering to install Culvert 4 would potentially lower the groundwater below the seasonal lowest level in two wetlands, one of which is expected to have a high dependence on groundwater.

189. Dewatering to install Culvert 11 is unlikely to reach depths that would result in a more than minor drop of the seasonal lowest groundwater level beneath the wetland. Consequently, any effects of dewatering can, in my opinion, be considered 'less than minor'.

62. Could the Applicant please clarify on what basis the conclusion in Para 189 was reached, and is this conclusion in relation to both Culvert 4 and Culvert 11? The question is asked considering the predicted drawdown in addition to seasonal oscillation of groundwater on the identified wetlands (EWG5 and EWG4) of 0.8 m and 0.5 m, respectively (ref. Appendix H)). If the response to the question is because the effect is transitory (such as inferred in Paras 230 and 231), please provide further information on the maximum timeframe that the maximum anticipated drawdown could occur, and coordinate a joint response with the project ecologists?

63. Groundwater levels in the soakage sites – A key aspect for groundwater soakage is whether the sites have capacity to take more groundwater during periods of high groundwater levels, noting that the 2022 winter has been one of the wettest on record. Could the Applicant please conduct Eigen modelling for each of the soakage site including climate data through this 2022 winter?

64. Groundwater levels this winter – Could the Applicant please update the Eigen model to include this winter and present the same plots as shown in Appendix G.1.B?

MWRC and GWRC – Erosion and Sediment Control

65. Auckland Council Erosion and Sediment Control Guidelines for Land Disturbing Activities in the Auckland Region (GD05) provides 'best practice' erosion and sediment control tools for earthworks sites and has been adopted by Horizons Regional Council and Greater Wellington Regional Council (through updates to the Erosion and Sediment Control Guide for Land Disturbing Activities in the Wellington Region) as the best practice guidance document for erosion and sediment control. Any deviation from GD05 standard requires sound technical justification as to why the deviation could be considered best practice. Could the Applicant please provide further technical justification around the use of the Waka Kotahi Erosion and Sediment Control Guidelines for State Highway Infrastructure, September 2014 (Waka Kotahi Guidelines) including an assessment of how expected infiltration will impact on erosion and sediment control devices?
66. Could the Applicant please provide further information on how devices constructed in accordance with Waka Kotahi Guidelines are going to be monitored for performance and how erosion and sediment control measures are going to be adjusted if there is poor performance below what is being achieved with GD05 compliant devices? This may include a change from the Waka Kotahi Guideline's devices to GD05 measures as best practice.
67. Could the Applicant please provide further information and justification on the use of clarity as a performance measure on site, and how this relates to actual potential sediment discharge (as calculated in the USLE and relied upon when assessing sediment discharge effects) as opposed to actual measurements through turbidity and total suspended solids?

MWRC and GWRC – Air Quality

68. To provide a better understanding of how discharges from construction activities will be managed and the potential for residual effects on nearby receptors, could Applicant please provide a copy of the draft Construction Air Quality Management Plan (CAQMP)?
69. Could the Applicant please clarify how much water will be required for dust management and whether sufficient supply is available for the project?

70. Could the Applicant please identify the properties that could potentially require upgrades to the roof-water collection system to mitigate the effects of dust deposition?
71. Could the Applicant please provide further information on the procedures and mitigation measures that will be used to manage air discharges from contaminated material, should it be encountered during construction?

MWRC and GWRC – Natural Character

72. Offset and natural character planting is '*subject to landowner approval*' as describe in the Legend on the Planting Concept Plan: Indicative Typology Sheets 1 -18 and Planting Concept Plan RMA Purpose Type 1 -18. Could the Applicant please provide additional information as to how '*subject to landowner approval*' is factored into the assessment and how does it relate to the mitigation of effects?
73. A draft Ecological Management Plan (EMP) was not included in the material lodged. Could the Applicant please provide a copy of a draft Ecology Management Plan and Landscape Management Plan (or a combined plan) to address the question raised in Question 72. above?

MWRC and GWRC – Hydrology and Flooding

Modelling of the 0.5% Annual Exceedance Probability (1 in 200-year Average Return Interval) Flood Event

74. Could the Applicant please provide information (including a plan of the extent of the modelled flooding) on the effects of the works on flooding during a 0.5% AEP (1 in 200-year) flood event, including the impacts of climate change?
75. Could the Applicant please provide information to support the statement in Para 55 of Technical Assessment F, that "*The 1:100 AEP RCP 6.0 to 2130 is significantly larger than the 1:200 AEP current climate...*"?

Quantification of Effects Outside the Designation

76. Could the Applicant please provide information on the distance beyond the designation that effects have a non-zero quantity?

77. Could the Applicant please provide additional information on the changes in flooding outside the designation for all of the events modelled? This should include:
- a) The maximum increase or decrease in flood depth or level at each area of flooding?
 - b) The quantum of the area flooded under the existing configuration, the quantum of the area flooded with the concept design in place, and the increase or decrease in the quantum of the area flooded. If there are “overs and unders” at any particular location where flooding occurs, then these should be quantified and reported?
 - c) The maximum increase or decrease in velocity at each area of flooding?
78. Could the Applicant please provide information on the assessment of the changes to flooding of buildings? Where the model results show any change to flooding depth or extent at a building whose perimeter intersects the floodplain extent for any of the events and scenarios modelled, up to and including the 0.5% AEP (1 in 200-year) flood event + climate change, please provide:
- a) the maximum flood level at the building under the existing configuration, with the concept design in place, and the increase or decrease in the maximum flood level at the building?
 - b) the percentage of the perimeter of each building that overlaps the floodplain under the existing configuration, with the concept design in place, and the increase or decrease in the percentage of the perimeter of the building that intersects the floodplain?

Flood Hazard – depth and velocity

79. Could the Applicant please advise where the changes in flooding that are referenced as best practice in Para 90 of Technical Assessment F are placed with respect to the designation applicable to each project referenced?, i.e. are the changes upstream of the designation, within the designation, or downstream of the designation?
80. Could the Applicant please confirm the basis for referring to the examples provided in Para 90 of Technical Assessment F as “best practice”?
81. Could the Applicant please provide an assessment of flood hazard (which is a function of depth and velocity)?

Geomorphological Assessment

82. Could the Applicant please provide a geomorphological assessment of the relevant watercourses to assess compliance with Policy 25 (f) of the PNRP?

Threshold for Changes in Velocity

83. Could the Applicant please provide additional information on the method used to determine that changes in velocity are minor and, if applicable, please provide quantification of the threshold values?

Freeboard

84. For all bridges, culverts, stock underpasses, pedestrian and cycleway underpasses, possible property access routes, and Shared User Path bridges and culverts, could the Applicant please provide information on the quantum of freeboard achieved and the extent to which the individual component complies with the requirements of the current Bridge Manual or other applicable standard?

Effects at Te Ripo o Hinemata

85. Could the Applicant please provide an assessment of the effects of the works at Te Ripo o Hinemata on flooding?

Surface Roughness

86. Could the Applicant please provide plans showing the surface roughness applied to the "Baseline" and "With-Scheme" Models in more detail? The plan provided in Appendix E of the "Baseline" report is of too greater scale to confirm the modifications made for the "With-Scheme" model are appropriate for describing the effects. This should include information on the locations of scour protection.
87. Could the Applicant please provide further information to support the statement in section 2.8, Para 3 (Page 16, Appendix F.2) of the "With-Scheme Report", that the impact of scour protection on modelled water levels is expected to be minimal, or provide an assessment of effects that explicitly includes scour protection works?

Blockage (Page 16, Appendix F.2)

88. Could the Applicant please provide the findings of the blockage risk assessment described in section 3.3 of the “With-Scheme” report?
89. Could the Applicant please describe the method that was used to assess the effects of the debris arrestors on flooding, and the outcomes of the assessment?
90. Could the Applicant please provide further information on the effects of blockage on water levels, velocities, and flood extents, to supplement and provide further detail for the information in Para 3 of Section 3.3 of the “With-Scheme” report?

Version of Bridge Manual

91. Could the Applicant please provide information on the differences between the version of the Bridge Manual used for the assessment and the current version that are material to the project, and updated information for the assessment of effects that is consistent with the current version of the Bridge Manual?

Borrow and Fill Sites

92. It appears that some of the borrow and fill sites are located within floodplains. Could the Applicant please provide further information on the effects of the borrow and fill sites on flooding; especially as it pertains to the damming and diversion of flows; including:
 - The areal extent to which the floodplain overlaps each borrow site;
 - The areal extent to which the floodplain overlaps each fill site;
 - Current estimates of borrow volumes for each borrow site; and
 - Current estimates of the volume of fill that is below the flood level for each fill site.

Shared Pathway

93. Could the Applicant please advise as to the basis for determining the appropriate level of service for locations where the Shared User Path crosses a transverse drainage feature?

94. Could the Applicant please confirm the level of service for each location where the Shared User Path crosses a transverse drainage feature?

MWRC and GWRC – Contaminated Land

95. Could the Applicant please provide further information on the procedures and mitigation measures that will be used to manage discharges to water, and to land that may enter water, from contaminated material, should it be encountered during construction?
96. Could the Applicant please advise how any additional consenting requirements for this matter will be reflected in the relevant management plans?

HDC – Traffic and Transport

97. Section 18.6 of the AEE notes that the works to relocate and improve the Tararua Road and existing State Highway 1 intersection are partly within the existing SH1 designation (Designation D2, 'State Highway 1). Paragraph 21 of the Final Technical Assessment A – Transport confirms that the project includes improvements at this location, however, there is no detail provided in the geometric design of the proposed intersection/level crossing upgrade works at this location.

Could the Applicant please provide details of the geometric design for the (existing) SH1 / Tararua Road intersection?

98. At paragraph 3.3.3, Final Technical Assessment A – Transport, reference is made to the East West Arterial (EWA) which is acknowledged to provide additional capacity in the transport network.

Could the Applicant please confirm that the EWA could occur without Ō2NL? What are the traffic and transportation effects that would flow from the EWA not being established once Ō2NL is constructed?

99. The Final Technical Assessment A – Transport (paragraph 46) indicates that the East West Arterial (EWA) connecting the central part of Tara-Ika to Arapaepae Road has only been assumed to be in place with Ō2NL and is not part of the Do-Minimum, however this appears inconsistent with the demand assumptions (at paragraph 196, the Transport Assessment states that side road delays could restrict the amount of development that could occur within Tara-Ika).

Additionally, the Final Technical Assessment A – Transport (paragraph 164) describes infrastructure upgrades assumed to take place in the Do-Minimum and

specifically states (paragraph 164g) that this includes local road improvements associated with Tara-Ika.

Could the Applicant please explain why the East West Arterial (EWA) connecting the central part of Tara-Ika to Arapaepae Road has only been assumed to be in place with Ō2NL and is not part of the Do-Minimum?

100. Could the Applicant please confirm that the Tara-Ika development can occur irrespective of or prior to Ō2NL, albeit with potential restrictions upon development if assessments identify capacity / safety issues on the road network?

101. The Final Technical Assessment A – Transport (paragraph 113) provides a breakdown of trip patterns for vehicle trips heading north along SH1 from a point to the north of Ōtaki. This is based on TomTom GPS data.

Could the Applicant please provide sampling rates for the TomTom travel time data, and a comparison provided between the TomTom data and the modelled travel times (for 2018)?

102. Could the Applicant also please provide further information and detail with regard to existing patterns of travel through and within the area?

103. The Final Technical Assessment A – Transport (paragraphs 188 – 193) suggests that travel times will increase significantly in the Do-Minimum scenario. Table A.7 compares observed TomTom travel time data for 2018 with modelled data for 2039. Such a comparison may introduce differences which are attributable solely to the reliability of the observations (sampling rates etc) and/or the reliability of the modelling.

Could the Applicant please provide information with regard to the TomTom sampling rates, or the comparison should be between modelled data for 2018 and that for 2039?

104. Could the Applicant please provide information in relation to the overall changes in travel distances and CO₂ emissions as a result of Ō2NL?

105. The Final Technical Assessment A – Transport (paragraph 219) describes walking and cycling facilities to be provided associated with Ō2NL but the only references to Tara-Ika are to connections at Queen Street East and Tararua Road, and there is no reference to the pedestrian/cycle overbridges shown by the Tara-Ika Masterplan. Furthermore, the walking and cycling benefits of the SUP (Transport Assessment paragraphs 263 – 266) make no mention of the connectivity to Tara-Ika and the proposed E-W connections across Ō2NL.

Could the Applicant please comment on the treatment of Tara-Ika and the provision of east-west connectivity (vehicular, walking, cycling) both with and without/prior to Ō2NL?

106. Could the Applicant please provide further information and detail with regard to existing patterns of travel through and within this area?
107. The modelling indicates that movements between the south and the Levin CBD will route via Tararua Road (rather than exit at the Taylors Road intersection and travel by means of the existing SH1).

Could the Applicant please clarify that the route which traffic is expected to take between the Levin central area and Ōtaki / South will be via Tararua Road and that this will be the new point of entry to Levin from the south?

108. It is understood that the baseline growth assumption relates to the adoption of the 75th percentile growth scenario. The Final Technical Assessment A – Transport states (paragraph 44) that sensitivity testing has been undertaken for a 95th percentile growth scenario, but no results have been presented.

Could the Applicant please provide information in relation the 95th percentile growth sensitivity tests?

109. The Final Technical Assessment A – Transport (paragraph 112) suggests that current volumes have recovered close to pre-Covid (2018) levels and therefore the 'existing' volumes remain relevant.

Could the Applicant please provide a more detailed analysis of changes in traffic volumes through this period and also comment on the effects of Covid upon forecast traffic volumes for 2039, and whether these will be lower as the result of losing two years of growth?

110. The Final Technical Assessment A – Transport (paragraph 256) indicates that modelling of conditions at the (old) SH1/Tararua Road intersection using SIDRA rather than SATURN, changed the forecast level of service from E to B.

Could the Applicant please comment upon the reliability of intersection modelling in SATURN, given the use of SIDRA to identify a lower level of service for the (existing) SH1 / Tararua Road intersection?

111. Could the Applicant also please provide more information in relation to what this means for the reliability of the SATURN-based delay forecasts elsewhere and for queue lengths and delays at this critical intersection?

112. The Final Technical Assessment A – Transport (paragraphs 27 and 268) claims that *‘investment in more frequent and attractive public transport options for surrounding communities’* may arise from the ‘old highway’ being quieter.

Could the Applicant please provide evidence that existing public transport services are constrained by travel conditions within the existing road network?

113. The Final Technical Assessment A – Transport (paragraph 32) suggests that a detailed construction methodology will be provided with a Construction Traffic Management Plan (CTMP). Some further information is provided at paragraphs 282 – 300. While it is acknowledged that construction logistics are necessarily coarse at this stage of project development, it is expected that further information should be provided in the form of a draft CTMP as part of the application, to provide a reasonable assurance that effects during the construction phase are able to be managed.

Could the Applicant please provide a draft CTMP as part of the application material?

KCDC – Traffic and Transport

114. Could the Applicant please explain why the decision has been made to provide one option for Taylors Road (southern interchange) when discussions and communication with KCDC have not been closed out?
115. Could the Applicant please provide more information on the problem that the Taylors Road interchange is trying to solve, the alternatives assessment undertaken for the Taylors Road location and the basis for decision making?
116. Could the Applicant please provide evidence of how the community and stakeholders were engaged with in reaching the proposal for Taylor Road access that has been presented in General Arrangement Plan – Indicative Sheet 18?
117. Could the Applicant please comment on the safety, operations, and maintenance requirements for the Taylors Road linkage as the alternative arterial to the proposed Expressway?
118. There is no Transport System Plan displaying the transport linkages and integration (Local Traffic, Expressway Traffic, PT, and Active Modes) with the PP2Ō project and Ōtaki community and no detailed traffic / active mode volumes for the roads / links around Ōtaki to allow for consideration of the assessment of effects (Transport, Economics and Community/Social).

Could the Applicant provide a Transport System Plan to demonstrate the integration and outcomes of the Ō2NL and PP2Ō projects?

119. Could the Applicant please provide details for the cross section and configuration of the proposed shared path south of the Pukehou Rail Overbridge and the standard of the shared path and describe how it will be consistent with the KCDC Cycleways, Walkways and Bridleways Strategy?
120. The Final Technical Assessment A – Transport (paragraph 32) suggests that a detailed construction methodology will be provided with a Construction Traffic Management Plan (CTMP). Some further information is provided at paragraphs 282 – 300.

Could the Applicant please provide more detailed access plans and a draft CTMP as part of the application material?

121. Volume III 01 - General Plan Set contains limited detail on the layout of the Active Modes cross section and design, specifically:
- a. Integration plan with Ōtaki and the PP2Ō Shared Path
 - b. Cross section south of the Pukehou Rail Bridge to avoid it being hard up against the existing state highway.
 - c. Connections from the shared path to local roads e.g. Forest Lakes Road

Could the Applicant please provide this detail?

122. Could the Applicant explain how road user legibility and understanding for Ōtaki has been addressed from a legibility and transport user perspective given there are 3 interchanges within 3.5km of each other?

HDC and KCDC - Landscape and Visual

123. The Final Technical Assessment J - Terrestrial Ecology, Appendix J.1, refers to properties with a numerical ID, however there is no table or plan provided that links the numerical ID to a specific property address. Could the Applicant please provide either a plan or table?

The Technical Assessment D - Landscape Visual and Natural Character has a table of properties using the Stantec ID number (refer Appendix D.3 Visual Effects pgs. 127-215). Could the Applicant please clarify if the Stantec ID number is the same as the numerical number that is referred to in the Terrestrial Ecology Technical Assessment?

124. Could the Applicant please explain how the Councils will be involved in the Design Audit process from a stakeholder perspective, as described in section 4.1 CEDF?
125. While condition DLV1 requires the implementation of the landscaping planting shown on the Planting Concept Plans, could the Applicant please advise what the process they propose to be used to certify or amend the planting Concept Plans (e.g. a similar approach as proposed in conditions REM2 & REM3 for the Ecology Management Plan for Regional Councils)?

126. Condition DLV1 addresses Landscape Planting. DLV1 b) states that:
Landscape planting must be implemented, maintained, monitored and replaced to achieve a 90% survival rate at five (5) years following the date that initial planting commenced;

Could the Applicant please comment on whether a percentage canopy cover rather than a percentage of plant survival would be a better tool for measuring planting success at the time of Final Completion? For example, if a mass plant failure occurred in Year 4 after planting, and replacement using small grade plants occurred, does it consider this as satisfying the 90% survival rate where the aim in terms of planting success is to create a self-sustaining plant community that is sufficiently established to shade and fend off weed species?

127. Could the Applicant please comment on the consistency of the proposed conditions across Ecological and Landscape conditions in terms of post installation maintenance and management regimes and the criteria for measuring planting success?
128. Could the Applicant please comment on how weed infestation in the rehabilitation, restoration and landscape plantings, particularly where they adjoin ecological mitigation and off-setting sites, is to be managed and how this is addressed in consent conditions?
129. Could the Applicant please comment on how pests and weeds on Waka Kotahi land that lies outside the designation that potentially will lie idle /not farmed until practical completion of the works will be controlled?

HDC and KCDC – Economics

130. The Final Technical Assessment O - Economics and Town Centre Impacts does not consider or assess the effects of points of access and egress on Ōtaki businesses.

Could the Applicant please provide an assessment of the economic effects of the north of Ōtaki interchange on the Ōtaki town centre?

131. The north of Ōtaki interchange does not provide direct access to the communities of Manakau or Ohau and the Final Technical Assessment O - Economics and Town Centre Impacts does not consider alternative alignment options and the economic effects that alternatives may present in relation to growing the local communities of Manakau and Ohau, provide more resources locally and reduce trips and trip distances that alternatives which enabling direct access would provide.

Could the Applicant please provide an assessment of alternative alignment options and the economic effects of alternatives on the local communities of Manakau and Ohau?

132. Could the Applicant please explain how the O2NL interchange at Taylors Rd, north of Ōtaki optimise the economic and social capacity of Ōtaki and Manakau?

133. The economic effects of O2NL on Tara-Ika and the economic role of Tara-Ika in relation to Levin/Horowhenua are not covered within the Final Technical Assessment O - Economics and Town Centre Impacts, which only considers global issues concerning Levin/Horowhenua and those relating to the existing town.

Could the Applicant please provide an assessment of the economic effects of O2NL on the Tara-Ika growth area?

134. Could the Applicant please explain what the community connectivity impacts and associated economic effects of providing connections only at Queen Street East and Tararua Road on Tara-Ika and the eastern part of Levin are, including between Tara-Ika and Waiopēhu College?

135. Could the Applicant please explain why/how it considers that not providing the local connections over the 2km wide extent of the interface between Tara-Ika aligns is consistent with the Project Objectives (as set out in Volume II, Part A s.4.6) and the various documents listed in s.1.4 of the CEDF (pgs 16 & 17), in relation to addressing community connectivity, severance, economic, social and environmental sustainability?

136. Could the Applicant please provide the empirical information to demonstrate the social, economic and environmental sustainability impacts of the proposed approach to connections at Tara-Ika and how that relates to the cross connections and urban form proposed in the Tara-Ika Structure Plan?

HDC and KCDC - Urban Design

137. Could the Applicant please explain why/how, in omitting to provide the connections illustrated by the Tara-Ika Plan Change 4 Structure Plan, the proposal is or can be consistent with the Waka Kotahi Design Principles described at page 10 of the CEDF, specifically, and in relation to the omission of east-west connections located between Queen Street East and Tararua Road, how the proposal fully and optimally follows the first six of these design principles, in particular Principles 2,3,5 and 6?

138. Could the Applicant please explain how O2NL, by treating the planned rezoning and urban growth provided for by Plan Change 4 at Tara-Ika as not part of the existing environment, addresses and meets the following project objective: *'...to provide appropriate connections that integrate the state highway and local road network to serve urban areas'* (refer AEE Volume II, Part A, p23)?

139. Could the Applicant please explain what the social and urban design effects would be from the East-West Arterial not being established once O2NL is constructed, including on delivery of the outcomes anticipated and provided for by Plan Change 4 Tara-Ika?

140. Could the Applicant please explain how the *'Project Shared Use Path and Possible Future Connections – Indicative, not part of O2NL Project'* diagram (CEDF page

128) provide for the potential for connections to the strategic cycleways that are included in the Tara-Ika Plan Change 4 Structure Plan?

141. The AEE Vol II, Part A, page 19 states: *“Waka Kotahi will continue both through statutory planning processes but also through future integrated master planning processes and the improvement programme to work with stakeholders to achieve the sustainable urban access critical to reducing enabled emissions.”*

Could the Applicant please explain how matters of connection, severance and emissions will be achieved and how the proposal is consistent with this statement?

142. Could the Applicant also please explain the impact on enabled CO₂ emissions for the foreseeable future in allowing for movement between the 3500+ houses at Tara-Ika and Levin relative to the impact if the connections were to be provided?

143. The Final Technical Assessment A-Transport notes at paras 102-105 that the Ō2NL Project is consistent with the HDC District Plan and *“has strong alignment with transport policy at regional and national level.”*

Could the Applicant please explain how this comment considers the Tara-Ika Plan Change and the effects of Ō2NL on that area, in particular the east-west connections to and from Tara-Ika, including provision for convenient walking and cycling using planned strategic cycleways.

144. The Final Technical Assessment A-Transport notes at para 206: *“Severance can be created when a road acts as, or feels like, a barrier to movement. This tends to be because people feel unsafe crossing the road. ... If people do not make journeys they would like to, this has negative consequences at both social and economic levels.”*

While this comment specifically refers to at-grade crossing, could the Applicant please how this principle applies to the Tara-Ika growth area and its relation to Levin, and what the precise magnitude of the negative consequences of absence of crossing are?

145. Final Technical Assessment A-Transport at Figure A.27 shows a diagram describing *“2039 Induced and Suppressed Trips in Levin”* which shows a connection over the Ō2NL from Tara-Ika on and connecting to Arapaepae Road on the alignment of Liverpool Street, which is inconsistent with the General Arrangement Plans in Volume II-02.

Could the Applicant please explain how the induced traffic analysis would change if that connection across the Ō2NL were to be excluded?

146. In relation to implementing the CEDF could the Applicant please explain:
- (a) what is the full process of the Design Review Audit including appointment of suitably qualified person(s) to cover all elements covered by Chapter 4 of the CEDF?

- (b) what is the scope for questioning and/or comment and/or possibly certification by the District Council of any Design Review Audit?

- 147. Could the Applicant please describe how the project relates to HDC's Tara-Ika urban growth area as per HDC's Plan Change 4, including the road and pedestrian and cycle connections that are part of that plan change?
- 148. Could the Applicant please explain how Ō2NL in relation to Tara-Ika responds to the existing traffic network and its problems as discussed by Technical Assessment A-Transport (para 206) to meet the identified Project objectives, which include *"To provide appropriate connections that integrate the state highway and local road network to serve urban areas."*
- 149. Could the Applicant please comment on the following photo simulations contained in Volume III Section 10-Photo Simulations:
 - (a) the state of completion of rendition of the proposed planting at Viewpoint 4 in the Queen Street East over-bridge as this currently does not include the proposed tree stands nor the 'tree avenue' described in the 09-Planting drawing for this area.
 - (b) Viewpoint 14 appears to not show the planned tree clusters. (The purpose of the yellow lines to describe intervening planting is understood. However, the cluster planting described on the landscape drawings ideally would be included to ensure consistency.)

HDC and KCDC - Terrestrial and Freshwater Ecology

- 150. Throughout Technical Assessments J and K, property identifiers are used, however there appears to be no table/reference map which shows the property identifications.

Could the Applicant please provide a property identification reference map as part of the drawing set or as part of these Technical Assessments?

- 151. Proposed condition REM12 outlines performance targets relating to planting implementation and management.

Could the Applicant please clarify the difference between enrichment and replacement planting, which appear to be used interchangeably in this condition?

- 152. The accepted methodology for long-tailed bat surveys includes surveys in spring/early summer (for breeding females and depend young) and later summer/autumn (for juvenile range establishment and adult mating).

Could the Applicant please explain the rationale for undertaking a single ABM deployment for bat monitoring during bat active period?

153. Proposed condition RTE7 outlines the requirements relating to the provision of indigenous buffer planting. The proposed timing of the planting under b)ii) specifies that buffer planting be undertaken before the end of the first planting season following the Project being open to the public.

Could the Applicant please clarify and confirm the timing of the buffer planting because this appears to be inconsistent with the recommendations of Technical Assessment J (paragraph 207 (d) and (e), pg 63) where buffer planting is identified as a mitigation measure for potential dust deposition, which can occur during construction?

154. Proposed conditions RTE2 e) and RTE3 e) could be interpreted in its current form that if an active nest is found subsequently to work starting that activity can continue inside of 50m exclusion zone if activity doesn't cause nest failure.

Could the Applicant please clarify whether a 50m exclusion zone will be established in the event of nest identified by Condition RTE2/3 d) consistent with the methodology in RTE2/3 b) and e)?

HDC and KCDC - Noise and Vibration

155. The Final Technical Assessment B – Noise and Vibration presents several differing ranges of noise criteria. For operational traffic noise, these include criteria based on NZS 6806:2010, WHO guidelines, and subjective response criteria based on UK planning guidance.

Could the Applicant please explain what noise criteria have been selected as guidance to what is "reasonable"?

156. At Paragraph 20 of the Final Technical Assessment B – Noise and Vibration the first sentence notes that the operational noise levels will be reasonable. However, the following sentence notes that for some receivers, the operational noise "*...may be disruptive, or very disruptive....*". These two sentences appear to be contradictory.

Could the Applicant please explain this contradiction and what noise criteria has been used to make this assessment?

157. At Paragraph 45 of the Final Technical Assessment B – Noise and Vibration, no reference has been provided for the research referred to, regarding New Zealanders exposed to road traffic noise.

Could the Applicant please provide the relevant reference to the document for this research?

158. There appear to be some anomalies between the information provided in Table B.12 and the same information set out in Appendix B4 of the Final Technical Assessment B – Noise and Vibration. For instance, Table B.12 shows that the current noise level at 47 Sorenson Road is estimated to range between 45 and

50 dB LAeq(24h) whereas Appendix B4 states that the range is 50 to 55 dB LAeq(24h). This type of anomaly between the two sections of the report occurs for a number of assessment locations.

Could the Applicant please explain why is there a difference in current noise level estimates in Table B.12 and Appendix B4?

159. At Paragraph 167 of the Final Technical Assessment B – Noise and Vibration, the current ambient noise levels in the area of Sorensens Road are reported as 45 to 55 dB LAeq(15 min) (15 min) during the day, and 35 to 45 dB LAeq(15 min) (15 min) at night. The next sentence concludes that the 24 hour sound level in this vicinity has been estimated as 50 to 55 dB LAeq(15 min) (24h).

Could the Applicant please explain how this conclusion was reached?

160. At Paragraph 223 the Final Technical Assessment B – Noise and Vibration notes that the noise from the road milling has not been considered in the construction noise assessment, due to it being a short-term activity.

Road milling machines typically have a sound power level of around LWA 110 dB and the activity is scheduled to occur at night times, therefore could the Applicant please address the noise effects of nighttime road milling in the construction noise assessment?

161. There are two Figures provided which illustrate the location and type of proposed operational noise mitigation, being Figure B.29 of Final Technical Assessment B – Noise and Vibration and Figure 42-4 of “Volume II Supporting Information and Assessment of Effects on the Environment.

Could the Applicant please confirm which Figure should be relied on as they are different in terms of level of detail provided?

HDC and KCDC – Water Quality

162. Could the Applicant please explain how the National Policy Statements – Fresh Water (NPSFW), Regional Policy Statements and district plan requirements related to water quality are addressed in the proposed designation conditions such that they fulfil the territorial authority obligations under these instruments?

163. The KCDC District plan, Policy INF Gen P4 calls for the use of adaptive management measures.

Could the Applicant please clarify how this adaptive approach has been incorporated into the mitigation measures proposed to manage water quality effects?

164. The CEMP requirements as required by the designation conditions do not appear to be connected to the CEMP required by the resource consent conditions. The designation conditions are silent on the matter of minimizing and managing erosion. Could the Applicant please clarify how the requirements of the

territorial authorities under the relevant national, regional and district policies and objectives and in relation to erosion are captured in the conditions for this application and how the CEMP will be prepared and approved to address both district and regional requirements?

165. Technical Assessment H - Water Quality recommends instream water quality monitoring upstream and downstream of the construction zone to determine the water quality effects of the project.

Could the Applicant please clarify how this is captured in the conditions?

166. Technical Assessment H - Water Quality outlines the methodology used to estimate concentrations contaminants in the receiving environment during construction. These are based on current TSS values in the stream which are increased on a pro-rata fashion based on a % increase in sediment generation for the contributing catchment.

Given this is the case, could the Applicant please explain how we can be confident that the concentrations estimated are accurate enough to enable acute effects during rain fall events to be adequately assessed and how will the predicted 40% change in catchment D which exceeds the One Plan target will be minimised?

167. The Design and Construction Report recognizes that higher intensity rainfall events have the potential to increase the volume and sediment load discharged from sediment control devices and has set trigger events above which more significant outflows from sediment control devices are likely to occur.

Could the Applicant please clarify how these events affect downstream water quality in the receiving environment and how do the mitigation measures proposed respond to this increased risk of adverse water quality effects in high intensity rain fall events and appropriately minimise them?

168. The operational estimates of contaminant concentrations in the receiving environment are based on an average annual rainfall depth. Runoff and entrainment of contaminants tends to be worse during high intensity rain fall events.

Could the Applicant please clarify how the shorter term, potentially acute effects resulting from such events have been addressed and shown to be appropriately minimised?

169. The extent of earthworks will not be uniform across the construction period. Could the Applicant please explain when peak earthworks will occur and how does the USLE and recommended erosion and sediment control approach accommodate this peak, manage the extent of unestablished construction footprint and thus address the relatively increased potential risk to water quality?

170. Could the Applicant please explain what erosion and sediment controls are proposed for yard areas, temporary works areas and other activities undertaken during the enabling/establishment works period, how this will be documented and how will the appropriateness of the controls be confirmed?

171. Parts of the proposed project will be constructed in a flood plain.

Could the Applicant please explain how the additional risks to erosion and sediment controls and consequently, water quality, have been addressed in these areas?

172. Technical Assessment H - Water Quality states that hydrological effects could be mitigated through increased infiltration in catchments predicted to have > 10% impervious area.

Could the Applicant please explain how and where this will be achieved?

173. Technical Assessment H - Water Quality does not appear to address the extent of potential effects of stream works/diversions on water quality or propose mitigation measures for these works.

Could the Applicant please provide this information?

174. Technical Assessment H - Water Quality does not address the potential effects and mitigation in relation to water quality and flood plain function for the material supply areas adjacent to the Ohau River and Waikakwa stream.

Could the Applicant please provide this information?

175. The application does not indicate any additional controls and mitigation for streams identified with high or moderate levels of adverse water quality effect in relation to sediment release. It is common to see additional measures being used to supplement business as usual controls in more sensitive areas.

Could the Applicant please clarify what specific attention such locations will receive?

176. The application states that in the absence of management actions, the effects of water abstraction are high and this includes potential exacerbation of water quality effects. Technical Assessment H - Water Quality does not appear to address this point.

Could the Applicant please clarify the type, scale and potential risk to water quality from this activity?

177. Could the Applicant please describe how the permanent stormwater devices will be operated and maintained in a manner that enables them to provide efficient and effective treatment of stormwater prior to discharge and how will performance of these devices be assessed and reported during operation?

HDC and KCDC - Hydrology and Flooding

178. Para 115 in the Final Technical Assessment F – Hydrology and Flooding report indicates inundation duration will be short, based on the short catchment response times. The Report provides two figures (F.15 and F.25) showing pre and post water level comparisons over time at two locations with neither of these figures appearing to extend over a long enough period to account for when inundation depths approach zero metres.

Could the Applicant please quantify the changes to the duration of flood inundation on active pasture and/or crop land beyond the designation boundary within the 2D extents of the three models? (This could be mapped as a time difference between pre and post O2NL construction from when inundation commences to when inundation ceases for a range of time bands (minimum of 0 to 1 hour) and for both the 10 year and 100 year scenarios).

179. Figures showing peak water level differences and velocity changes in the Final Technical Assessment F – Hydrology and Flooding Report do not include a legend clarifying the various colour bands.

Could the Applicant please provide legends for these Figures?

HDC and KCDC – Contaminated Land

180. Could the Applicant please explain how, at this stage in the project, excluding site contamination from the application does not pose a material issue/risk to other disciplines regarding their respective design/approach, and therefore the overall project concept?

181. The submitted PSI has identified 35 ‘potential HAIL sites’, 30 within the proposed designation and 5 adjacent and has further ranked these sites as either ‘low’, ‘medium’ or ‘high’ risk, based on ‘the likelihood and the nature of contamination existing at the site from a particular activity’. Eight sites ranked ‘medium’ risk and one site ranked ‘high’ risk are identified as requiring further investigation and these sites are listed in proposed condition REW4.

Following the process set out in the NES-CS, and as full site walkover has not yet been undertaken, could the Applicant please comment if it would be more appropriate to first require the PSI to be revised and updated following a complete site inspection, and then require DSIs for all identified pieces of land where the PSI cannot conclude that it is ‘highly unlikely that there will be a risk to human health if the change of use is made’ (Regulation 8(4) and/or that the soil disturbance component cannot meet permitted activity thresholds (Regulation 8(3))?

182. The PSI states that the risk screening system is based on the Ministry for the Environment (MfE) Contaminated Management Guideline No 3: ‘Risk Screening System’.

Could the Applicant please provide the template and workings of the risk screening, including the parameters adopted and the inputs?

HDC and KCDC – Planning

183. Section 19 of Volume II Part D states:
'The activities that require resource consents pursuant to sections 9(2), 13, 14 and 15 of the RMA, the NES-F, the NES-CS, One Plan and the PNRP are described in detail within the Rule Assessment at Appendix One and summarised below. Appendix One also sets out the permitted activity rules applicable to the Ō2NL Project.

All regional resource consents required for the Ō2NL Project are being sought as part of this application, whether they are explicitly specified or not. If, after detailed design is complete, further or different consents are required these will be sought at the time.'

Section 19.7 of Volume II Part D states:

'Waka Kotahi will undertake detailed site investigations (DSIs) including soil testing of sites traversed by the Ō2NL Project in subsequent design phases and once land access becomes available. Informed by the DSI results, if necessary Waka Kotahi will then apply for any resource consents required by the NES-CS regulations and/or the relevant Regional Plans. Waka Kotahi will share the results of the DSI with the relevant district and regional council when they are completed.'

These paragraphs appear to contradict each other and there is potential that the consents required by the NES-CS could affect the alignment of the designation. Could the Applicant please explain why potential consenting requirements under the NES -CS do not need to be addressed at this stage?

184. The O2NL Project does not include a connection between East Levin and Tara-Ika between Tararua Road and Queen Street East, and yet this is shown as a key component of the Tara-Ika Structure plan.

Could the Applicant please provide a place based comparison of the before (no link) and after (with the pedestrian link and then a multi-mode link) assessment of connection options.

185. Appendix 5, reference D.1 and D.2 describes the designation as:
'The construction, operation, maintenance and improvement of a state highway and shared user path and associated infrastructure, between Taylors Road (to the north of Ōtaki) and State Highway 1 north of Levin known as the Ōtaki to North of Levin Highway Project'.

Could the Applicant please explain what is meant by 'improvement' and describe the nature of the activities undertaken that would constitute improvement?

186. Appendix 1 of the AEE provides a Rules Assessment against the Horizons One Plan and the Proposed Natural Resources Plan for the Wellington Region,

however, there is no assessment of the Project against the Kapiti Coast District Council and Horowhenua District Council District Plan rules.

Could the Applicant please provide an assessment of the Project against the HDC and KCDC District Plan rules, to demonstrate that a Notice of Requirement to designate is the most appropriate mechanism to achieve the objectives of the Requiring Authority (s.171(1)(c) RMA)?

187. Section 12.8 of the AEE notes that the design and timing of reconnecting network utilities effected by the O2NL will be discussed and developed in consultation with network utility owners.

Could the Applicant please comment on whether the intention is to rely on the Network Utility provisions of the HDP and KCDP to undertake these works, and whether these works are likely to be permitted by the District Plans?

188. Section 18.6 notes that within the Kāpiti Coast District, for several hundred metres, the SUP is located outside of the O2NL designation, but within the existing SH1 designation.

Section 19.12.3 of the AEE notes that in some locations the SUP is located outside of the area subject to the proposed designation.

(a) Could the Applicant please clarify if those parts of the SUP that are outside the proposed O2NL designation are within the existing SH1 designation, or are there parts of the SUP that fall outside either designation?

(b) If the SUP is located outside either the existing SH1 designation or the proposed O2NL designation, could the Applicant please comment on the potential resource consents that may be required under the KCDP, or if the works are permitted by the rules in the KCDP?

189. Section 19.12.3 of the AEE notes that the works to relocate and improve the Tararua Road and existing SH1 intersection are located outside of the proposed designation and partially within the existing SH1 designation and *'where the SUP and intersection are not within the existing or proposed designations, the rules in the HDP apply'*.

Could the Applicant please provide an assessment of the SUP and intersection works that are not located within the existing or proposed designation against the HDP rules and identify whether the works are permitted or will require consent under the HDP?

190. Section 10.1 of the AEE, final paragraph discusses the Design Audit process and makes reference to a Figure, however the Figure appears to be missing.

Could the Applicant please provide the referenced Figure?

191. Section 3.3.3 of the AEE notes the following:

'The Tara-Ika Structure Plan shows an east/west arterial road (referred to as East West Arterial) crossing over Ō2NL and connecting the Tara-Ika Growth Area with Arapaepae Road. The East West Arterial provides access to the proposed commercial centre of Tara-Ika and provides additional capacity in the transport network. As the East West Arterial will cross over O2NL it will require bridging, which will require RMA approvals. It is expected that the RMA approvals will be sought in the near future.'

- (a) Could the Applicant please explain what structures (i.e. bridging and supports) would be required to accommodate the EWA and O2NL as depicted in the District Plan and NOR (noting that construction of the EWA road itself is currently a permitted activity albeit subject to s178(2))?
- (b) Do any effects on the environment arise from these structures (including e.g. traffic and transportation effects, social and urban design effects, landscape / visual effects, cultural effects, and effects on the delivery of the outcomes anticipated and provided for by Plan Change 4 Tara-Ika)?

192. Section 18.2 of the AEE notes that *'establishment works are limited in scale and have minor adverse effects. Further, establishment works are generally permitted by the rules in the relevant District Plan. It is on this basis that Waka Kotahi seeks to waive the requirement for an outline plan for establishment works'*.

Could the Applicant please undertake an assessment of the establishment works as defined in Appendix 5 Draft Conditions, to confirm that establishment works are permitted by the HDP and KCDP and that the subsequent request to waive the for an outline plan is appropriate?

193. Could the Applicant please comment on the intent of proposed condition DGA8 - Establishment Works when there is a process specified under the RMA (s.176A(2)) for a Requiring Authority to seek a waiver to an Outline plan requirement?

194. Final Technical Assessment N – Productive Land, at paragraph 7 notes that the *'extent of the restored land (and to what state it will be restored) is unknown'*.

Could the Applicant please explain what are the options available for restoration and are there minimum standards required that could be set as conditions to enable as much highly productive and highly versatile land to be restored?

Under the Act, you must, within 15 working days of the date of this letter, take one of the following options:

- a. provide the information; -OR-
- b. advise in writing that you agree to provide the information (at which point we would negotiate a reasonable time within which the information will be provided); -OR-
- c. advise in writing that you refuse to provide the information.

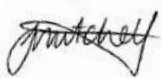
If you have any questions in relation to the determination or wish to discuss any aspects of this letter, please feel free to contact the relevant person(s) listed below.

Yours faithfully on behalf of the Regional Councils,



Mark St.Clair
CONSULTANT CONSENTS PLANNER
Horizons Regional Council and Greater Wellington Regional Council

Approved by:



Jasmine Mitchell
CONSENTS TEAM LEADER
Horizons Regional Council



Anna McLellan
TEAM LEADER COMPLIANCE AND CONSENTS
Greater Wellington Regional Council

Yours faithfully on behalf of the District Councils,



Helen Anderson
CONSULTANT PLANNER
Horowhenua District Council and Kapiti Coast District Council

Approved by:

A handwritten signature in black ink, appearing to read 'L Baddock', enclosed within a thin blue rectangular border.

Lauren Baddock
DISTRICT PLAN LEAD
Horowheuna District Council

A handwritten signature in black ink, appearing to read 'E Carstens', consisting of a large 'E' followed by a stylized 'C' and 'S'.

Eloise Carstens
RESOURCE CONSENTS AND COMPLIANCE MANAGER
Kapiti Coast District Council

APPENDIX 15

WAKA KOTAHI RESPONSE TO NOR SECTION 92 – DATED 22ND DECEMBER 2022

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PO Box 5084
Wellington 6011
New Zealand
T 64 4 894 5200
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22 December 2022

Horowhenua District Council
126/148 Oxford Street
Levin 5510

Kāpiti Coast District Council
175 Rimu Road
Paraparaumu 5032

Tēnā tātou,

Ōtaki to north of Levin Highway Project- – Response to request for additional information pursuant to section 92 of the Resource Management Act 1991

This letter provides a response to the request for further information pursuant to section 92 of the Resource Management Act 1991 (“RMA”) received on [add date] in relation to the notices of requirement for designations (“NoR”)¹ to authorise the Ōtaki to north of Levin Highway Project (“Ō2NL Project” or “the Project”)

The information requested and the Waka Kotahi NZ Transport Agency (“Waka Kotahi”) response is set out in the following table or attached.

No.	Jurisdiction	Information requested	Waka Kotahi response
Traffic and Transport			
97.	HDC	<i>Section 18.6 of the AEE notes that the works to relocate and improve the Tararua Road and existing State Highway 1 intersection are partly within the existing SH1 designation (Designation D2, ‘State Highway 1). Paragraph 21 of the Final Technical Assessment A – Transport confirms that the project includes improvements at this location, however, there is no detail –[provided in the geometric design of the</i>	A drawing is provided in Volume III Plan Set: General Arrangement drawing 310203848-01-100-C1017.

¹ Horowhenua District Council – 504/2022/22 & Kapiti Coast District Council - RM220254

No.	Jurisdiction	Information requested	Waka Kotahi response
		<p><i>proposed intersection/level crossing upgrade works at this location.</i></p> <p><i>Could the Applicant please provide details of the geometric design for the (existing) SH1 / Tararua Road intersection?</i></p>	
98.	HDC	<p><i>At paragraph 3.3.3, Final Technical Assessment A – Transport, reference is made to the East West Arterial (EWA) which is acknowledged to provide additional capacity in the transport network.</i></p> <p><i>Could the Applicant please confirm that the EWA could occur without Ō2NL? What are the traffic and transportation effects that would flow from the EWA not being established once O2NL is constructed?</i></p>	<p>Waka Kotahi understands that the East West Arterial (EWA) is a transport connection that is proposed as part of the Tara-Ika development and so it would be advanced as per the requirements of that development.</p> <p>The Ō2NL Project does not preclude that transport connection from being constructed.</p> <p>An assessment has not been made of the transport network with Ō2NL and without EWA as it has been assumed that EWA is needed to support the level of growth forecast in Tara-Ika.</p>
99.	HDC	<p><i>The Final Technical Assessment A – Transport (paragraph 46) indicates that the East West Arterial (EWA) connecting the central part of Tara-Ika to Arapaepae Road has only been assumed to be in place with Ō2NL and is not part of the Do-Minimum, however this appears inconsistent with the demand assumptions (at paragraph 196, the Transport Assessment states that side road delays could restrict the amount of development that could occur within Tara-Ika).</i></p> <p><i>Additionally, the Final Technical Assessment A – Transport (paragraph 164) describes infrastructure upgrades assumed to take place in the Do-Minimum and specifically states (paragraph 164g) that this</i></p>	<p>The traffic modelling shows that the East West Arterial is needed to address the transport effects associated with the full build out of Tara-Ika (by 2039).</p> <p>Waka Kotahi had understood that the HDC intended to lodge RMA planning applications for the EWA at a similar time to the planned lodgement of RMA applications and notices of requirement for the Ō2NL Project. Therefore, as the EWA would be subject to its own RMA processes, it was necessary to be able to identify the effects of the combination of the EWA and the Ō2NL Project, with the effects of the EWA to be addressed through a separate application.</p> <p>The Do Minimum network was agreed with HDC (and KCDC) and this excluded the East West Arterial (EWA).</p>

No.	Jurisdiction	Information requested	Waka Kotahi response
		<p><i>includes local road improvements associated with Tara-Ika.</i></p> <p><i>Could the Applicant please explain why the East West Arterial (EWA) connecting the central part of Tara-Ika to Arapaepae Road has only been assumed to be in place with Ō2NL and is not part of the Do-Minimum?</i></p>	
100.	HDC	<p><i>Could the Applicant please confirm that the Tara-Ika development can occur irrespective of or prior to Ō2NL, albeit with potential restrictions upon development if assessments identify capacity / safety issues on the road network?</i></p>	<p>The Ō2NL Project notices of requirement and applications for resource consent do not prevent other RMA applications being lodged, nor does it prevent Tara-Ika development from occurring where it is located outside of the land subject to the proposed designation for the Ō2NL Project.</p> <p>Where the Tara-Ika development is proposed to occur on the land subject to the notice of requirement, Waka Kotahi will work with the developer to understand how and if the developer's requirements can be met in a manner that does not prevent or hinder the Ō2NL Project (pursuant to section 176(1)(c) of the RMA).</p> <p>The potential road network capacity / safety issues associated with the development of Tara-Ika would be a matter for consideration through RMA consent process/es for that development.</p>
101.	HDC	<p><i>The Final Technical Assessment A – Transport (paragraph 113) provides a breakdown of trip patterns for vehicle trips heading north along SH1 from a point to the north of Ōtaki. This is based on TomTom GPS data.</i></p> <p><i>Could the Applicant please provide sampling rates for the TomTom travel time data, and a comparison provided between the TomTom data and the modelled travel times (for 2018)?</i></p>	<p>Average travel times are based on weekday sample sizes ranging from 700-1,000 in the AM peak, 1,300-6,600 in the interpeak and 400-1,300 in the PM peak for the three key journeys (Ōtaki to SH1 north of Levin, Ōtaki to central Levin and Ōtaki to SH57 north of Levin).</p> <p>2018 Modelled and 2018 TomTom travel times are similar, with differences of between +1 % (0.2min) for Ōtaki to north of Levin, +4% (0.6min) for Ōtaki to Central Levin and -7% (1.6min) for Ōtaki to SH57 north of Levin.</p>
102.	HDC	<p><i>Could the Applicant also please provide further information and detail with regard to existing patterns</i></p>	<p>Using traffic model outputs (which consider trips between model zones, not trips within zones), two thirds of trips have an origin or destination in the area encompassing Ōtaki and Levin (17% of trips stay within this area and</p>

No.	Jurisdiction	Information requested	Waka Kotahi response
		<i>of travel through and within the area?</i>	49% have one trip end in this area). One third of trips travel all the way through this (Ōtaki and Levin) area.
103.	HDC	<p><i>The Final Technical Assessment A – Transport (paragraphs 188 – 193) suggests that travel times will increase significantly in the Do-Minimum scenario. Table A.7 compares observed TomTom travel time data for 2018 with modelled data for 2039. Such a comparison may introduce differences which are attributable solely to the reliability of the observations (sampling rates etc) and/or the reliability of the modelling.</i></p> <p><i>Could the Applicant please provide information with regard to the TomTom sampling rates, or the comparison should be between modelled data for 2018 and that for 2039?</i></p>	See response to request 101 that includes a comparison of TomTom GPS data and modelled data.
104.	HDC	<i>Could the Applicant please provide information in relation to the overall changes in travel distances and CO₂ emissions as a result of Ō2NL?</i>	Climate change considerations are discussed in section 3.5 of the Supporting Information and Assessment of Effects on the Environment' Report (Volume II). For completeness, Waka Kotahi notes that the effects of greenhouse gas emissions associated with the O2NL Project (including 'enabled emissions') is not a relevant consideration in respect of decisions on the notices of requirement for the Ō2NL Project. In particular, section 104E of the RMA, while now repealed, continues to apply to the Ō2NL Project because the notices of requirement were given before 30 November 2022.
105.	HDC	<p><i>The Final Technical Assessment A – Transport (paragraph 219) describes walking and cycling facilities to be provided associated with Ō2NL but the only references to Tara-Ika are to connections at Queen Street East and Tararua Road, and there is no reference to the</i></p>	<p>The Ō2NL Project has assumed that these additional east west (vehicular, walking and cycling) connections would be provided as part of the development of Tara-Ika.</p> <p>These east west connections are not currently in place and they are not required to be constructed or in place by the Ō2NL Project.</p> <p>The Ō2NL Project does not preclude the development of these additional east-west connections between Tara-Ika and urban Levin.</p>

No.	Jurisdiction	Information requested	Waka Kotahi response
		<p><i>pedestrian/cycle overbridges shown by the Tara-Ika Masterplan. Furthermore, the walking and cycling benefits of the SUP (Transport Assessment paragraphs 263 – 266) make no mention of the connectivity to Tara-Ika and the proposed E-W connections across Ō2NL.</i></p> <p><i>Could the Applicant please comment on the treatment of Tara-Ika and the provision of east-west connectivity (vehicular, walking, cycling) both with and without/prior to Ō2NL?</i></p>	
106.	HDC	<p><i>Could the Applicant please provide further information and detail with regard to existing patterns of travel through and within this area?</i></p>	See the response to request 102 above.
107.	HDC	<p><i>The modelling indicates that movements between the south and the Levin CBD will route via Tararua Road (rather than exit at the Taylors Road intersection and travel by means of the existing SH1).</i></p> <p><i>Could the Applicant please clarify that the route which traffic is expected to take between the Levin central area and Ōtaki / South will be via Tararua Road and that this will be the new point of entry to Levin from the south?</i></p>	Yes, the preferred route from Levin CBD to Ōtaki would be via Tararua Road and the Ō2NL Project.
108.	HDC	<p><i>It is understood that the baseline growth assumption relates to the adoption of the 75th percentile growth scenario. The Final Technical Assessment A – Transport states (paragraph 44) that sensitivity testing</i></p>	<p>The sensitivity testing was undertaken to determine if the Ō2NL Project would perform adequately after a sustained period of very high growth (as envisaged by the 95th percentile growth scenario).</p> <p>The figure below (also included at full size at Attachment 1) provides projected level of service at 2039 using the 95th percentile growth scenario. This can be compared with Figure A.19 in Technical Assessment A. It shows</p>

No.

Jurisdiction

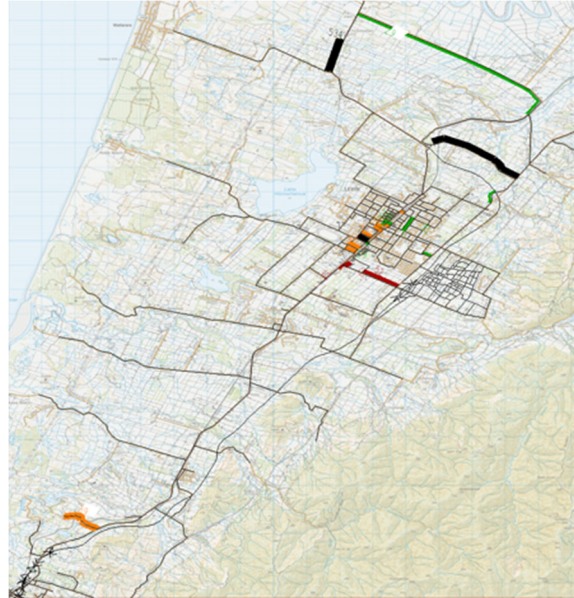
Information requested

Waka Kotahi response

has been undertaken for a 95th percentile growth scenario, but no results have been presented.

Could the Applicant please provide information in relation the 95th percentile growth sensitivity tests?

that there are no significant delays on, or on approach to the new highway, but there are other parts of the transport network near the new highway that may need further consideration, as part of business-as-usual transport planning, should this situation eventuate.



109. HDC

The Final Technical Assessment A – Transport (paragraph 112) suggests that current volumes have recovered close to pre-Covid (2018) levels and therefore the ‘existing’ volumes remain relevant.

Could the Applicant please provide a more detailed analysis of changes in traffic volumes through this period and also comment on the effects of Covid upon forecast traffic volumes for 2039, and whether these will be lower as the result of losing two years of growth?

The graphs included below (and provided as Attachment 2) provide actual count data at the two telemetry sites at SH1 Ohau and SH57 Shannon for volume trends between 2019 and 2022.

The graphs indicate that the impacts of COVID-19 at both locations is related to the lockdown period durations.

Analysis of this TMS data, shows that excluding the lockdown periods, volumes in 2021 were higher than 2019 (+1% at SH1 Ohau and +6% at Shannon).

The data available indicates that there may have been some short-term impacts but does not indicate that it is necessary to adjust the traffic growth projections that have been used.

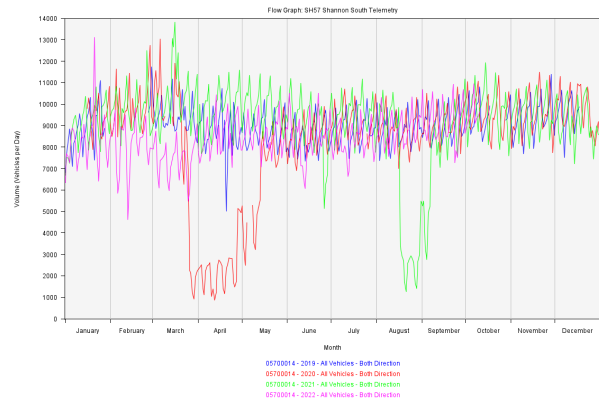


No.

Jurisdiction

Information requested

Waka Kotahi response



110. HDC

The Final Technical Assessment A – Transport (paragraph 256) indicates that modelling of conditions at the (old) SH1/Tararua Road intersection using SIDRA rather than SATURN, changed the forecast level of service from E to B.

Could the Applicant please comment upon the reliability of intersection modelling in SATURN, given the use of SIDRA to identify a lower level of service for the (existing) SH1 / Tararua Road intersection?

The SATURN modelling was undertaken on a worst-case intersection form with fewer lanes. More detailed assessment and subsequent design updates added a lane to respond to the poor performance of the intersection (as signalled by a Level of Service E) identified by SATURN and hence SIDRA modelling of updated layout shows improvement to a Level of Service B.

Therefore, there is no issue in reliability of using SATURN, as it modelled a different layout.

111. HDC

Could the Applicant also please provide more information in relation to what this means for the reliability of the SATURN-based delay forecasts elsewhere and for queue lengths and delays at this critical intersection?

See the response to request 110 above. There have been no other changes in layouts between SATURN and SIDRA proposed. Therefore no reliability issues in respect of the use of the SATURN model arise.

112. HDC

The Final Technical Assessment A – Transport (paragraphs 27 and 268) claims that 'investment in more frequent and attractive public transport options for surrounding communities' may arise from the 'old highway' being quieter.

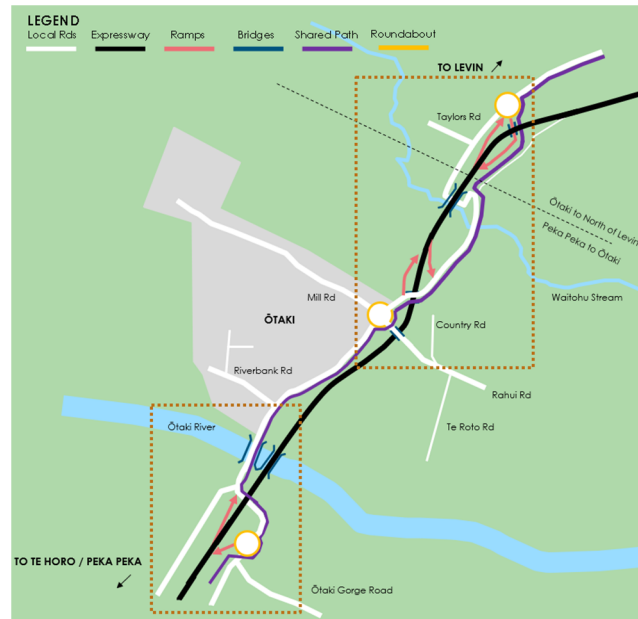
This was identified as an opportunity only. Current public transport services are subject to the same delays as general traffic which are outlined through the Technical Assessment A (refer to pages 25 – 54).

No.	Jurisdiction	Information requested	Waka Kotahi response
		<i>Could the Applicant please provide evidence that existing public transport services are constrained by travel conditions within the existing road network?</i>	
113.	HDC	<p><i>The Final Technical Assessment A – Transport (paragraph 32) suggests that a detailed construction methodology will be provided with a Construction Traffic Management Plan (CTMP). Some further information is provided at paragraphs 282 – 300. While it is acknowledged that construction logistics are necessarily coarse at this stage of project development, it is expected that further information should be provided in the form of a draft CTMP as part of the application, to provide a reasonable assurance that effects during the construction phase are able to be managed.</i></p> <p><i>Could the Applicant please provide a draft CTMP as part of the application material?</i></p>	<p>The actual and potential effects of construction traffic are described in Technical Assessment A (Transport) (provided in Volume IV) and the approach to managing those effects is provided in Part H of the Supporting Information and Assessment of Effects on the Environment Report (Volume II). This Report specifically refers to proposed designation conditions provided as Appendix Five to Volume II.</p> <p>The proposed designation conditions (DCT1) require the preparation of a Construction Traffic Management Plan (CTMP) and the objective and the content of the plan are specified in Schedule 2 (to the conditions). The stated objective of the CTMP is to manage property access, construction traffic and safety for all road users associated with the construction of the Project. Any proposed work on local roads, including the creation of access for construction traffic, will be subject to separate approval processes with the relevant road controlling authority (either Horowhenua District Council or Kāpiti Coast District Council).</p> <p>The CTMP will be prepared and provided to Councils as part of the section 176A (RMA) outline plan process, and as described in proposed Condition DGA6.</p>
114.	KCDC	<i>Could the Applicant please explain why the decision has been made to provide one option for Taylors Road (southern interchange) when discussions and communication with KCDC have not been closed out?</i>	<p>Details of options considered and assessed (using multi-criteria analysis) and then how a preferred option was selected is described in Part E of the Supporting Information and Assessment of Effects on the Environment Report (Volume II), which includes specific additional consideration described in section 28.1.</p>
115.	KCDC	<i>Could the Applicant please provide more information on the problem that the Taylors Road interchange is trying to solve, the alternatives assessment undertaken for the Taylors Road location</i>	<p>Please refer to the response to request 114 and also to Attachment 3 that provides more information about the half interchange proposed including how Taylors Road is anticipated to perform.</p>

No.	Jurisdiction	Information requested	Waka Kotahi response
		<i>and the basis for decision making?</i>	
116.	KCDC	<i>Could the Applicant please provide evidence of how the community and stakeholders were engaged with in reaching the proposal for Taylor Road access that has been presented in General Arrangement Plan – Indicative Sheet 18?</i>	<p>Details of consultation and engagement activities undertaken is provided in Part F of the Supporting Information and Assessment of Effects on the Environment Report (Volume II). Specifically, the design of the southern interchange and the proposed arrangements at Taylors Road (as shown on the drawings provided in Volume III) were part of the consultation and engagement undertaken in April – May 2022 on the preliminary concept design for the Project as described in Section 35.3.2. Information boards used at these events included: Ōtaki to north of Levin Engagement display boards part 1: Connections (nzta.govt.nz). A newsletter was also distributed to the local community that depicts the current design: Ōtaki to north of Levin update - April 2022 (nzta.govt.nz).</p> <p>No specific written feedback was provided from the community in respect of the proposed design at Taylors Road. The community members who discussed the design with the Project Team, at open days and community events, supported the increased connectivity that the southern interchange would provide.</p>
117.	KCDC	<i>Could the Applicant please comment on the safety, operations, and maintenance requirements for the Taylors Road linkage as the alternative arterial to the proposed Expressway?</i>	<p>The Taylors Road realignment (which was constructed as part of the Peka Peka to Ōtaki Project) would only be used as an alternative to the state highway in very rare circumstances when the approximately 600m stretch of new highway between the end of the north facing ramps north of Ōtaki and the start of the south facing ramps at Taylors Road needs to be closed. The chances of an incident that closes one direction on this short stretch are very small, and the chances of a two-way closure are smaller still.</p> <p>In the event that this section is closed then a temporary diversion onto Taylors Road and through Ōtaki itself may be required (if two lanes are closed on the state highway then the remaining two lanes could be used to provide 2-way movement). The operation (including safety) of the temporary diversion would, as per normal state highway operations, be managed by traffic control. Due to the expected infrequent nature of needing such a closure it is unlikely that maintenance requirements would be affected. Nevertheless, these matters can be resolved at the time of occurrence.</p>
118.	KCDC	<i>There is no Transport System Plan displaying the transport linkages and integration (Local Traffic, Expressway Traffic, PT, and Active Modes) with the</i>	<p>The diagram below has been prepared displaying transport linkages and integration with the PP2Ō Project (now open) as requested (and is provided at full size as Attachment 4):</p>

No.	Jurisdiction	Information requested	Waka Kotahi response
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PP2Ō project and Ōtaki community and no detailed traffic / active mode volumes for the roads / links around Ōtaki to allow for consideration of the assessment of effects (Transport, Economics and Community/Social). Could the Applicant provide a Transport System Plan to demonstrate the integration and outcomes of the Ō2NL and PP2Ō projects?



The table below provides annual average daily traffic flows through this part of the network at 2019, and at 2039 with the Ō2NL Project and without the Project (Do Min):

Location	Current (2019)	2039 Do Min	2039 with Ō2NL
SH1 south of Taylors Road	16,700	23,900	27,400
Current SH1 south of Mill	19,300	6,000	6,200
Mill Road	5,900	9,000	9,600

The modelling shows that there is very little change to traffic volumes in and around Ōtaki as a result of the scheme.

We have not modelled active mode numbers along the corridor but the shared use path is estimated to attract 150-200 trips per day on the opening year 2029/2030 and 200-250 by 2039.

119. KCDC *Could the Applicant please provide details for the cross section and configuration of the proposed shared path south of the Pukehou Rail Overbridge and the standard of the shared path and describe how it will be consistent with the KCDC Cycleways, Walkways and Bridleways Strategy?*

Refer to Geometrics Plans (including typical sections) and also section 3.6 of the Design and Construction Report (DCR) (provided as Appendix Four to Volume II) for intended outcomes for the proposed Shared Use Path (SUP). The DCR explains that the SUP will be designed with reference to the Austroads Guides for walking and cycling and is expected to be fully sealed and the width will generally be a minimum of 3.0m wide plus 0.5m buffer strip. When using the shoulder of the existing SH1, the path will be appropriately separated from traffic.

No.	Jurisdiction	Information requested	Waka Kotahi response
			<p>There are no other current or planned cycleways in the KCDC cycle map (kapiti-coast-cycle-map-2022.pdf) for the proposed SUP to tie into.</p> <p>The KCDC CWB strategy is no longer available on the Council website and may have been replaced by the Sustainable Transport Strategy (March 2022).</p>
120.	KCDC	<p><i>The Final Technical Assessment A – Transport (paragraph 32) suggests that a detailed construction methodology will be provided with a Construction Traffic Management Plan (CTMP). Some further information is provided at paragraphs 282 – 300. Could the Applicant please provide more detailed access plans and a draft CTMP as part of the application material?</i></p>	<p>As set out in respect to request 113, the proposed designation Conditions require the preparation of a Construction Traffic Management Plan (CTMP) and the objective and the content of the plan are specified in Schedule 2 (to the proposed Conditions).</p> <p>The CTMP will amongst other things include the location and management of site access routes and access points for heavy vehicles.</p> <p>The CTMP will be provided as part of the Outline Plan process, which will also confirm the design of the Project and its construction methodology.</p>
121.	KCDC	<p><i>Volume III 01 - General Plan Set contains limited detail on the layout of the Active Modes cross section and design, specifically:</i></p> <p><i>a. Integration plan with Ōtaki and the PP2Ō Shared Path</i></p> <p><i>b. Cross section south of the Pukehou Rail Bridge to avoid it being hard up against the existing state highway.</i></p> <p><i>c. Connections from the shared path to local roads e.g. Forest Lakes Road</i></p> <p><i>Could the Applicant please provide this detail?</i></p>	<p>a. The Ō2NL Project Shared Use Path (SUP) is intended to connect directly onto the end of the PP2Ō shared use path. The design of the SUP and the intended connection with the PP2Ō shared use path will be confirmed through the outline plan process.</p> <p>b. Please refer to response to request 119. The design of the SUP and the relationship with the existing state highway will be confirmed through the outline plan process.</p> <p>c. The scope of the SUP and how it connects to the local road network is as shown on the Drawings provided in Volume III and does not include connections across the existing state highway to Forest Lakes Road for example.</p> <p>Please also refer to the response to request 119 that refers to where information on the intended SUP design standards can be found in the notice of requirement documentation.</p>
122.	KCDC	<p><i>Could the Applicant explain how road user legibility and understanding for Ōtaki has been addressed from a legibility and transport user perspective given there are</i></p>	<p>The Ō2NL Project is not making any changes to how Ōtaki is accessed from the highway network (and the recently completed PP2Ō Project).</p> <p>Please refer to response to request 118. The proposed southern interchange will allow road users from Forest Lakes / Manakau heading to and from Otaki / Wellington onto the state highway network.</p>

No.	Jurisdiction	Information requested	Waka Kotahi response
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3 interchanges within 3.5km of each other?

The SUP will provide access to the current road and the PP2Ō SUP. The detailed design of the Ō2NL Project including signs will be confirmed through the outline plan process.

Landscape and Visual

123.	HDC and KCDC	<p><i>The Final Technical Assessment J - Terrestrial Ecology, Appendix J.1, refers to properties with a numerical ID, however there is no table or plan provided that links the numerical ID to a specific property address. Could the Applicant please provide either a plan or table?</i></p> <p><i>The Technical Assessment D - Landscape Visual and Natural Character has a table of properties using the Stantec ID number (refer Appendix D.3 Visual Effects pgs. 127-215). Could the Applicant please clarify if the Stantec ID number is the same as the numerical number that is referred to in the Terrestrial Ecology Technical Assessment?</i></p>	<p>The property identifiers (including Stantec ID numbers) should be the same as used and shown on the Land Requirement Plans and described in the Land Requirement Schedule, both of which are provided in Volume III.</p>
124.	HDC and KCDC	<p><i>Could the Applicant please explain how the Councils will be involved in the Design Audit process from a stakeholder perspective, as described in section 4.1 CEDF?</i></p>	<p>As set out in proposed conditions DTW5 and DGA6(c).ii. Design Review Audits will be carried out prior to construction and every three months during the construction period. They will be made available to the Councils on request. The pre-construction Design Review Audit will be provided to Councils as part of the outline plan process.</p>
125.	HDC and KCDC	<p><i>While condition DLV1 requires the implementation of the landscaping planting shown on the Planting Concept Plans, could the Applicant please advise what the process they propose to be used to certify or amend the planting Concept Plans (e.g. a similar approach as proposed in</i></p>	<p>Landscape plans will be included in the outline plan submitted to Councils as required by section 176A(3)(e) of the RMA. The Councils can request changes to the landscape plans through the outline plan process. Once the outline plan is confirmed, any subsequent changes to the landscape plans would need to be authorised as an amendment to the outline plan, and subject to the same process.</p>

No.	Jurisdiction	Information requested	Waka Kotahi response
		<i>conditions REM2 & REM3 for the Ecology Management Plan for Regional Councils?</i>	
126.	HDC and KCDC	<p><i>Condition DLV1 addresses Landscape Planting. DLV1 b) states that:</i></p> <p><i>Landscape planting must be implemented, maintained, monitored and replaced to achieve a 90% survival rate at five (5) years following the date that initial planting commenced;</i></p> <p><i>Could the Applicant please comment on whether a percentage canopy cover rather than a percentage of plant survival would be a better tool for measuring planting success at the time of Final Completion? For example, if a mass plant failure occurred in Year 4 after planting, and replacement using small grade plants occurred, does it consider this as satisfying the 90% survival rate where the aim in terms of planting success is to create a self-sustaining plant community that is sufficiently established to shade and fend off weed species?</i></p>	<p>It is agreed that canopy coverage be added to condition DLV1, as follows:</p> <p><i>“b) Landscape planting must be implemented, maintained, monitored and replaced to achieve a 90% survival rate and 80% canopy coverage of the ground at five (5) years...”</i></p> <p>This approach is consistent with Waka Kotahi P39 Specification section G Planting, which requires:</p> <ul style="list-style-type: none"> • No greater than 10% loss for grades less than 15lt/PB28 (i.e. most plants); and • No loss for plants over 15lt/PB28 (i.e. specimen trees, street trees); and • 80% canopy coverage of the ground <p>An updated suite of conditions will be provided through the ensuing processing phases.</p>
127.	HDC and KCDC	<p><i>Could the Applicant please comment on the consistency of the proposed conditions across Ecological and Landscape conditions in terms of post installation maintenance and management regimes and the criteria for measuring planting success?</i></p>	<p>Standards have been derived in response to effects. So for example the planting standards in proposed condition DLV1 (which relates to visual and general landscaping) differ from the standards in proposed condition REM13, which relates to ecological offsetting.</p> <p>The standards for landscaping are Waka Kotahi P39 Specification section G Planting referred to in response to request 126.</p> <p>The standards derived for the ecological offsetting are based on the Biodiversity Offset Accounting Model which has specific requirements as explained in Technical Assessment J (Terrestrial Ecology).</p>
128.	HDC and KCDC	<p><i>Could the Applicant please comment on how weed</i></p>	<p>Methodologies for pest plant control within ecological mitigation and offsetting sites will be detailed in the</p>

No.	Jurisdiction	Information requested	Waka Kotahi response
		<i>infestation in the rehabilitation, restoration and landscape plantings, particularly where they adjoin ecological mitigation and off-setting sites, is to be managed and how this is addressed in consent conditions?</i>	<p>Ecological Management Plan (EMP), as required by proposed resource consent condition REM1, and as described in Schedule 7 to the proposed Conditions.</p> <p>This will, in summary, describe the distribution and abundance of all pest plant species. Control methodologies will then be devised based on the type and size of pest plant infestations present. Timelines for initial pest plant control, site preparation, planting, and post-planting maintenance and monitoring will be supplied.</p> <p>No specific weed controls are proposed in the rehabilitation, restoration and landscape planting areas, and this would occur as necessary to meet the maintenance and management standards in proposed condition DLV1. Specific actions as provided for in the EMP may be undertaken in these planting areas to ensure that standards in REM12 are achieved.</p>
129.	HDC and KCDC	<i>Could the Applicant please comment on how pests and weeds on Waka Kotahi land that lies outside the designation that potentially will lie idle /not farmed until practical completion of the works will be controlled?</i>	<p>Most areas of property located outside of the designation are expected to be continued to be used as they are today. Weed and animal pest control would be undertaken as part of any standard property management practice.</p>
Economics			
130.	HDC and KCDC	<p><i>The Final Technical Assessment O - Economics and Town Centre Impacts does not consider or assess the effects of points of access and egress on Ōtaki businesses.</i></p> <p><i>Could the Applicant please provide an assessment of the economic effects of the north of Ōtaki interchange on the Ōtaki town centre?</i></p>	<p>An assessment of the economic effects of the Ō2NL Project on the retail strip on state highway through Ōtaki (and on the Ōtaki town centre) is provided in Technical Assessment O (Volume IV), at paragraphs 20 and 78. This assessment assumes that the north of Ōtaki interchange is in place.</p> <p>Please note that the PP2Ō Expressway (now open) means that through traffic can bypass this retail strip through Ōtaki.</p>
131.	HDC and KCDC	<i>The north of Ōtaki interchange does not provide direct access to the communities of Manakau or Ohau and the Final Technical Assessment O - Economics and Town Centre Impacts does not consider alternative alignment options and the</i>	<p>Details of options considered and assessed (using multi-criteria analysis) and then how a preferred option was selected is described in Part E of the Supporting Information and Assessment of Effects on the Environment Report (Volume II). The option assessments considered impacts on the transport network in terms of the varying scale of safety and efficiency benefits which, in turn, form the basis for economic benefit.</p>

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		<p><i>economic effects that alternatives may present in relation to growing the local communities of Manakau and Ohau, provide more resources locally and reduce trips and trip distances that alternatives which enabling direct access would provide.</i></p> <p><i>Could the Applicant please provide an assessment of alternative alignment options and the economic effects of alternatives on the local communities of Manakau and Ohau?</i></p>	<p>Socio-economic effects, way of life and community cohesion aspects were specifically considered as part of the corridor selection process and are summarised on pages 119 – 121 of the Indicative Business Case (December 2018) and described in detail in Appendix E to that report. Refer: Technical reports Waka Kotahi NZ Transport Agency (nzta.govt.nz)</p>
132.	HDC and KCDC	<p><i>Could the Applicant please explain how the O2NL interchange at Taylors Rd, north of Ōtaki optimise the economic and social capacity of Ōtaki and Manakau?</i></p>	<p>The Ō2NL Project retains the existing social and economic capacity of Ōtaki and Manakau by retaining existing connections via the existing state highway and local roads. The removal of traffic from the current state highway to the Ō2NL Project will provide safety and journey time reliability benefits for users who continue to use the old state highway. New interchanges to the north of Ōtaki and at Levin provide improved connections to the region.</p>
133.	HDC and KCDC	<p><i>The economic effects of O2NL on Tara-Ika and the economic role of Tara-Ika in relation to Levin/Horowhenua are not covered within the Final Technical Assessment O - Economics and Town Centre Impacts, which only considers global issues concerning Levin/Horowhenua and those relating to the existing town.</i></p> <p><i>Could the Applicant please provide an assessment of the economic effects of O2NL on the Tara-Ika growth area?</i></p>	<p>The Horowhenua District Council are part way through a Plan Change process that relates to the Tara-Ika growth area. This plan change (HDC PC4) seeks to enable development in the Tara-Ika growth area, and is currently subject to an Environment Court appeals process (refer to section 9.5.4.3 of the Supporting Information and Assessment of Effects on the Environment report (Volume II)). As far as Waka Kotahi understands, no resource consents have been granted that would enable large-scale development at Tara-Ika. As such, large-scale development at Tara-Ika does not form part of the existing environment in respect of the Ō2NL Project notices of requirement. Accordingly, no assessment of effects on that development is required. However the Ō2NL Project has been designed on basis that urban development is planned to occur at Tara-Ika in the future by for example proposing low noise road surfacing. That said, as discussed in Technical Assessment A, the Ō2NL Project provides capacity in the transport network that is needed to realise the full extent of Tara-Ika. Therefore, the Ō2NL Project will have a significant positive 'enabling' impact on the Tara-Ika development.</p>
134.	HDC and KCDC	<p><i>Could the Applicant please explain what the community connectivity impacts and</i></p>	<p>See response to request 133 in terms of effects on Tara-Ika.</p>

No.	Jurisdiction	Information requested	Waka Kotahi response
		<i>associated economic effects of providing connections only at Queen Street East and Tararua Road on Tara-Ika and the eastern part of Levin are, including between Tara-Ika and Waiopēhu College?</i>	The Ō2NL Project does not preclude the development of additional east west links between Tara-Ika development area and Levin. These links as well as the Ō2NL Project are depicted on the Tara-Ika Structure Plan and are to be brought forward by developers of the Tara-Ika development area, as required to support the Tara-Ika development.
135.	HDC and KCDC	<i>Could the Applicant please explain why/how it considers that not providing the local connections over the 2km wide extent of the interface between Tara-Ika aligns is consistent with the Project Objectives (as set out in Volume II, Part A s.4.6) and the various documents listed in s.1.4 of the CEDF (pgs 16 & 17), in relation to addressing community connectivity, severance, economic, social and environmental sustainability?</i>	One of the Ō2NL Project objectives is to 'provide appropriate connections that integrate the state highway and the local road network to serve urban areas'. Further to the responses to requests 133 and 134, it is acknowledged that Tara-Ika is a planned urban area that does not form part of the existing environment or have a road network. The precise form of Tara-Ika urban area and network is not yet known and is subject to future planning and resource consent processes. The phasing of the development is not defined and initial phases will not, and later phases ultimately may, require additional connections to be provided. The Ō2NL Project proposed to reconnect existing local roads across the new state highway (Queen Street East and Tararua Road) and as part of these to include new walking and cycling facilities. These together with a new interchange on Tararua Road will support the Tara-Ika development.
136.	HDC and KCDC	<i>Could the Applicant please provide the empirical information to demonstrate the social, economic and environmental sustainability impacts of the proposed approach to connections at Tara-Ika and how that relates to the cross connections and urban form proposed in the Tara-Ika Structure Plan?</i>	In addition to the responses to requests 133 and 134, the Ō2NL Project sustains the connection of the existing environment and the social sustainability of the community, it provides ability to connect to these existing links and does not preclude a new connection being provided in the future for a future community.

Urban Design

137.	HDC and KCDC	<i>Could the Applicant please explain why/how, in omitting to provide the connections illustrated by the Tara-Ika Plan Change 4 Structure Plan, the proposal is or can be consistent with the Waka Kotahi Design Principles described at page 10 of the CEDF, specifically, and in</i>	The CEDF principles listed apply to how the Ō2NL Project design is to be advanced and are not intended to apply to development being advanced by others. Waka Kotahi through page 10 of the CEDF supports the development of future connections at Tara-Ika in conjunction with the future development of the Tara-Ika growth area. As explained above in response to Request #134 these links are to be brought forward by the developer of Tara-Ika as and when they are required
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No.	Jurisdiction	Information requested	Waka Kotahi response
		<i>relation to the omission of east-west connections located between Queen Street East and Tararua Road, how the proposal fully and optimally follows the first six of these design principles, in particular Principles 2,3,5 and 6?</i>	by the Tara-Ika development. The Ō2NL Project does not preclude such connections. Also see response to request 133.
138.	HDC and KCDC	<i>Could the Applicant please explain how O2NL, by treating the planned rezoning and urban growth provided for by Plan Change 4 at Tara-Ika as not part of the existing environment, addresses and meets the following project objective: ‘...to provide appropriate connections that integrate the state highway and local road network to serve urban areas’ (refer AEE Volume II, Part A, p23)?</i>	See responses to request 133 and 135.
139.	HDC and KCDC	<i>Could the Applicant please explain what the social and urban design effects would be from the East-West Arterial not being established once O2NL is constructed, including on delivery of the outcomes anticipated and provided for by Plan Change 4 Tara-Ika?</i>	As explained above (responses to requests 133 and 135) the Ō2NL Project does not preclude a connection being provided in conjunction with the future development of Tara-Ika. The hypothetical effects of not providing such a future connection would need to be addressed by that development and are beyond the scope of this notice of requirement.
140.	HDC and KCDC	<i>Could the Applicant please explain how the ‘Project Shared Use Path and Possible Future Connections – Indicative, not part of Ō2NL Project’ diagram (CEDF page 128) provide for the potential for connections to the strategic cycleways that are included in the Tara-Ika Plan Change 4 Structure Plan?</i>	See responses to request 133 and 135. Page 128 of the CEDF notes that other developments may in the future provide additional walking and cycling facilities. Where these have been developed and interface with the Shared Use Path (SUP) proposed by the Ō2NL Project then they can be joined to the SUP at that time by the developer. The SUP has been located on the eastern side of the proposed Ō2NL Project state highway in response to Horowhenua District Council request that it be located on the eastern side so that it may form part of the Tara-Ika walking and cycling network (refer to Table 3-5 on page 15 of the Design and Construction Report, provided as Appendix Four to Volume II).

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141.	HDC and KCDC	<p><i>The AEE Vol II, Part A, page 19 states: "Waka Kotahi will continue both through statutory planning processes but also through future integrated master planning processes and the improvement programme to work with stakeholders to achieve the sustainable urban access critical to reducing enabled emissions."</i></p> <p><i>Could the Applicant please explain how matters of connection, severance and emissions will be achieved and how the proposal is consistent with this statement?</i></p>	<p>See responses to request 133, 135 and 140.</p> <p>The reference on page 19 relates to broader Waka Kotahi responsibilities rather than what is achieved through the Ō2NL Project. They reflect an overall approach of working with councils to integrate urban planning and transport planning to help reduce enabled emissions.</p> <p>The connections provided by the Ō2NL Project are described in sections 3.6 and 3.13 of the Design and Construction Report (Appendix Four to Volume II) and the social effects of the Project (including severance) are assessed in Technical Assessment E (Social Impact Assessment) provided in Volume IV. The Ō2NL Project includes a shared use path and walking and cycling facilities are provided on local roads that are re-connected across the new state highway. This approach promotes multi-modal access opportunities and aligns with sustainable urban access objectives.</p>
142.	HDC and KCDC	<p><i>Could the Applicant also please explain the impact on enabled CO₂ emissions for the foreseeable future in allowing for movement between the 3500+ houses at Tara-Ika and Levin relative to the impact if the connections were to be provided?</i></p>	<p>See response to request 104 and 139.</p> <p>The impact of the Tara-Ika development are matters that need to be addressed by the developers of the Tara-Ika development noting that the Ō2NL Project does not preclude additional connections from being provided, consistent with the Tara-Ika Structure Plan.</p>
143.	HDC and KCDC	<p><i>The Final Technical Assessment A-Transport notes at paras 102-105 that the Ō2NL Project is consistent with the HDC District Plan and "has strong alignment with transport policy at regional and national level."</i></p> <p><i>Could the Applicant please explain how this comment considers the Tara-Ika Plan Change and the effects of Ō2NL on that area, in particular the east-west connections to and from Tara-Ika, including provision for convenient walking and cycling using planned strategic cycleways.</i></p>	<p>See response to request 104, 133, 134, 135 and 141.</p>

No.	Jurisdiction	Information requested	Waka Kotahi response
144.	HDC and KCDC	<p><i>The Final Technical Assessment A-Transport notes at para 206:</i></p> <p><i>“Severance can be created when a road acts as, or feels like, a barrier to movement. This tends to be because people feel unsafe crossing the road. ... If people do not make journeys they would like to, this has negative consequences at both social and economic levels.”</i></p> <p><i>While this comment specifically refers to at-grade crossing, could the Applicant please how this principle applies to the Tara-Ika growth area and its relation to Levin, and what the precise magnitude of the negative consequences of absence of crossing are?</i></p>	See response to request 104, 133, 134, 135 and 141.
145.	HDC and KCDC	<p><i>Final Technical Assessment A-Transport at Figure A.27 shows a diagram describing “2039 Induced and Suppressed Trips in Levin” which shows a connection over the Ō2NL from Tara-Ika on and connecting to Arapaepae Road on the alignment of Liverpool Street, which is inconsistent with the General Arrangement Plans in Volume II-02.</i></p> <p><i>Could the Applicant please explain how the induced traffic analysis would change if that connection across the Ō2NL were to be excluded?</i></p>	If the East West Arterial was excluded, then traffic is anticipated to disperse to Tararua Road and Queen Street East. This is a slightly longer journey for some road users and so there would be a potential for a slight reduction in car travel.
146.	HDC and KCDC	<p><i>In relation to implementing the CEDF could the Applicant please explain:</i></p> <p><i>(a) what is the full process of the Design Review Audit including appointment of suitably</i></p>	<p>a) The Design Review Audit is expected to be led by the Project’s CEDF authors / team who will draw upon technical experts (as required). The expectation is that our iwi partners will form part of the CEDF authors / team.</p> <p>b) See response to request 124.</p>

No.	Jurisdiction	Information requested	Waka Kotahi response
		<p><i>qualified person(s) to cover all elements covered by Chapter 4 of the CEDF?</i></p> <p><i>(b) what is the scope for questioning and/or comment and/or possibly certification by the District Council of any Design Review Audit?</i></p>	
147.	HDC and KCDC	<p><i>Could the Applicant please describe how the project relates to HDC's Tara-Ika urban growth area as per HDC's Plan Change 4, including the road and pedestrian and cycle connections that are part of that plan change?</i></p>	<p>The relationship of the Ō2NL Project with Tara-Ika is described in the Supporting Document and Assessment of Effects on the Environment Report (Volume II) in Part A, Part B (sections 7, 9.1, 9.3, and 9.4), Part D (section 18) and Part E.</p>
148.	HDC and KCDC	<p><i>Could the Applicant please explain how Ō2NL in relation to Tara-Ika responds to the existing traffic network and its problems as discussed by Technical Assessment A-Transport (para 206) to meet the identified Project objectives, which include "To provide appropriate connections that integrate the state highway and local road network to serve urban areas."</i></p>	<p>See response to request 135.</p>
149.	HDC and KCDC	<p><i>Could the Applicant please comment on the following photo simulations contained in Volume III Section 10-Photo Simulations:</i></p> <p><i>(a) the state of completion of rendition of the proposed planting at Viewpoint 4 in the Queen Street East over-bridge as this currently does not include the proposed tree stands nor the 'tree avenue' described in the 09-Planting drawing for this area.</i></p> <p><i>(b) Viewpoint 14 appears to not show the</i></p>	<p>The photo simulations do not depict all planting so as to not unnecessarily obscure the Ō2NL Project proposed state highway or existing vegetation (relevant particularly to VP4 where existing vegetation screens the Prouse homestead/ Ashleigh). All proposed planting areas are shown on the Planting Concept Plans provided in Volume III. What is shown and not shown is described below, to assist:</p> <p>a) VP4 - The planting shown represents conservative growth rates at approximately Year 5. The proposed taller planting that would be in the foreground of this image (which comprises a combination of ecological offset planting, the avenue of trees along the western boundary of the Prouse property, and proposed groups of trees on the Queen Street East bridge embankment) has not been shown in the photo simulations.</p>

No.	Jurisdiction	Information requested	Waka Kotahi response
		<i>planned tree clusters. (The purpose of the yellow lines to describe intervening planting is understood. However, the cluster planting described on the landscape drawings ideally would be included to ensure consistency.)</i>	b) VP14 - Planting shown represents conservative growth rates at approximately Year 5. Proposed taller planting in the foreground of this image which comprises a combination of ecology offset planting and the proposed groups of trees on the embankments has not been shown in the photo simulations.

Terrestrial and Freshwater Ecology

150.	HDC and KCDC	<i>Throughout Technical Assessments J and K, property identifiers are used, however there appears to be no table/reference map which shows the property identifications. Could the Applicant please provide a property identification reference map as part of the drawing set or as part of these Technical Assessments?</i>	The property identifiers used should be the same as those used and shown on the Land Requirement Plans and described in the Land Requirement Schedule, both of which are provided in Volume III.
151.	HDC and KCDC	<i>Proposed condition REM12 outlines performance targets relating to planting implementation and management. Could the Applicant please clarify the difference between enrichment and replacement planting, which appear to be used interchangeably in this condition?</i>	In condition REM-12, under Terrestrial offset and enhancement planting, 'enrichment plants' refer to mature phase species that will be planted at least three years after the revegetation species have been planted (by which time sufficient shelter is provided). These species include titoki, kohekohe, hinau, and totara. Replacement trees refers to planting (mature phase species) within existing habitats such as Arapaepae Bush, where they can be regarded as enrichment or enhancement species, in that they will over time help to improve floristic diversity and structure.
152.	HDC and KCDC	<i>The accepted methodology for long-tailed bat surveys includes surveys in spring/early summer (for breeding females and depend young) and later summer/autumn (for juvenile range establishment and adult mating). Could the Applicant please explain the rationale for undertaking a single ABM deployment for bat</i>	In our opinion, the general paucity of bat roost habitat within the Project footprint, together with an absence of bat records west of the Tararua Range, precluded the need for a follow-up bat survey.

No.	Jurisdiction	Information requested	Waka Kotahi response
		<i>monitoring during bat active period?</i>	
153.	HDC and KCDC	<p><i>Proposed condition RTE7 outlines the requirements relating to the provision of indigenous buffer planting. The proposed timing of the planting under b)ii) specifies that buffer planting be undertaken before the end of the first planting season following the Project being open to the public.</i></p> <p><i>Could the Applicant please clarify and confirm the timing of the buffer planting because this appears to be inconsistent with the recommendations of Technical Assessment J (paragraph 207 (d) and (e), pg 63) where buffer planting is identified as a mitigation measure for potential dust deposition, which can occur during construction?</i></p>	<p>Condition RTE7 will be modified to require buffer planting to be undertaken in advance of construction occurring where practicable.</p> <p>In some instances buffer planting may not be able to be undertaken in advance due to lack of access to property, or due to construction phasing requirements, noting that planting should not occur during summer.</p>
154.	HDC and KCDC	<p><i>Proposed conditions RTE2 e) and RTE3 e) could be interpreted in its current form that if an active nest is found subsequently to work starting that activity can continue inside of 50m exclusion zone if activity doesn't cause nest failure.</i></p> <p><i>Could the Applicant please clarify whether a 50m exclusion zone will be established in the event of nest identified by Condition RTE2/3 d) consistent with the methodology in RTE2/3 b) and e)?</i></p>	<p>Both conditions state that 'where an active nesting site is identified by a monthly survey works may continue subject to a suitably qualified person or persons confirming that the works will not cause the nest to fail.'</p> <p>There is no reference to 50m radius exclusion zones and these do not apply. The suitably qualified person may conclude that such a zone needs to be established or that works do not effect a nest that has established whilst that work was underway.</p>

Noise and Vibration

155.	HDC and KCDC	<p><i>The Final Technical Assessment B – Noise and Vibration presents several differing ranges of noise criteria. For operational</i></p>	<p>For this technical assessment “reasonable noise” has been taken in the context of the construction of a major piece of infrastructure, and as guided by the identified performance standards – see paragraphs 67 onwards. This is consistent with NZS 6806 which provides three</p>
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No.	Jurisdiction	Information requested	Waka Kotahi response
		<p><i>traffic noise, these include criteria based on NZS 6806:2010, WHO guidelines, and subjective response criteria based on UK planning guidance. Could the Applicant please explain what noise criteria have been selected as guidance to what is “reasonable”?</i></p>	<p>different categories, with differing outcomes to residents, but all may be “reasonable” based on engineering / geographic constraints, and local context.</p> <p>For the Ō2NL Project, as set out in Table B.26, compliance with NZS 6806 Categories and comparison with WHO Guidelines were considered as evaluation factors for mitigation design.</p> <p>The assessment of residual effects considers compliance with NZS 6806 categories, comparison with WHO guidelines, and likely subjective response separately, rather than deriving a single criteria for reasonable/unreasonable.</p>
156.	HDC and KCDC	<p><i>At Paragraph 20 of the Final Technical Assessment B – Noise and Vibration the first sentence notes that the operational noise levels will be reasonable. However, the following sentence notes that for some receivers, the operational noise “...may be disruptive, or very disruptive....”. These two sentences appear to be contradictory. Could the Applicant please explain this contradiction and what noise criteria has been used to make this assessment?</i></p>	<p>Paragraphs 71 and 86 of the Technical Assessment B (Noise) explain that the terms ‘disruptive’ and ‘very disruptive’ are derived from the UK planning framework. Paragraph 343 explain that ‘disruptive’ and ‘very disruptive’ effects generally correlate to Category B PPFs (as per NZS6806).</p> <p>Paragraphs 18 and 19 of Technical Assessment B (Noise) explain that the operational noise from Project may mean that in some instances residents change how they use their property. This may mean that residents change the location of where they undertake some of their activities on their property to inside or on a sheltered aspect. Other activities may be avoided or undertaken less frequently.</p> <p>This is consistent with expectations for Category B (and C) PPFs (as per NZS6806), where little outdoor amenity can be expected on areas directly exposed to road-traffic noise.</p> <p>While not desirable, as discussed above in Response #155, these effects may still be and are considered to be reasonable in the context of a project of this scale.</p>
157.	HDC and KCDC	<p><i>At Paragraph 45 of the Final Technical Assessment B – Noise and Vibration, no reference has been provided for the research referred to, regarding New Zealanders exposed to road traffic noise. Could the Applicant please provide the relevant reference to the document for this research?</i></p>	<p>These figures are from the AECOM National Land Transport (Road) Noise Map 2019 Project Report which are available at: https://nzta.govt.nz/assets/Highways-Information-Portal/Technical-disciplines/Noise-and-vibration/Research-and-information/Other-research/national-land-transport-road-noise-map-2019-05-16.pdf</p>
158.	HDC and KCDC	<p><i>There appear to be some anomalies between the</i></p>	<p>The annual average “Existing” noise level has been included in Appendix B4. These have been estimated on</p>

No.	Jurisdiction	Information requested	Waka Kotahi response
		<p><i>information provided in Table B.12 and the same information set out in Appendix B4 of the Final Technical Assessment B – Noise and Vibration. For instance, Table B.12 shows that the current noise level at 47 Sorenson Road is estimated to range between 45 and 50 dB LAeq(24h) whereas Appendix B4 states that the range is 50 to 55 dB LAeq(24h). This type of anomaly between the two sections of the report occurs for a number of assessment locations.</i></p> <p><i>Could the Applicant please explain why is there a difference in current noise level estimates in Table B.12 and Appendix B4?</i></p>	<p>an area-wide basis, without differentiation between PPFs based on vegetation cover and localised noise sources. These estimates have been prepared to assist in understanding what future noise levels might sound like. There are some differences with the measured short-term levels reported in Table B.12, which are at specific locations, and based on conditions with little wind. The estimated LAeq(24h) from measurements is discussed in response to Request #159.</p> <p>The estimate of the annual average on an area basis is considered appropriate, informed by measurements and observations. As shown in Figure B.6, there is significant variation in the LAeq(24h) and undue weighting on a 15-minute measurement is not considered appropriate.</p>
159.	HDC and KCDC	<p><i>At Paragraph 167 of the Final Technical Assessment B – Noise and Vibration, the current ambient noise levels in the area of Sorensons Road are reported as 45 to 55 dB LAeq(15 min) (15 min) during the day, and 35 to 45 dB LAeq(15 min) (15 min) at night. The next sentence concludes that the 24 hour sound level in this vicinity has been estimated as 50 to 55 dB LAeq(15 min) (24h).</i></p> <p><i>Could the Applicant please explain how this conclusion was reached?</i></p>	<p>As the measurements were only 15 minute snapshots of the day and night, during relatively calm conditions, it is anticipated that there will be also be some “loud” noise events outside of the measurement window. These events would increase the LAeq(24h) slightly above what would be calculated using the 2x15min values alone. Due to the energy averaging process, unobserved high noise periods would have greater effect on the LAeq(24h) than unobserved quiet periods.</p> <p>Therefore, the stated LAeq(24h) ranges are considered appropriate for this location and for their purpose.</p>
160.	HDC and KCDC	<p><i>At Paragraph 223 the Final Technical Assessment B – Noise and Vibration notes that the noise from the road milling has not been considered in the construction noise assessment, due to it being a short-term activity.</i></p>	<p>Milling as part of resurfacing may be required either to transition between two road surfaces, or to reduce the ground levels and is work that is anticipated as being needed to tie-in (or join) the new state highway with the existing state highway.</p> <p>Paragraph 223 of Technical Assessment B (Noise) explains that milling at tie-ins is an activity that is anticipated to take hours (not days) and is likely to occur at night (although it may not). Due to the short duration the specific effects are not measured but are proposed to</p>

No.	Jurisdiction	Information requested	Waka Kotahi response
		<i>Road milling machines typically have a sound power level of around LWA 110 dB and the activity is scheduled to occur at night times, therefore could the Applicant please address the noise effects of nighttime road milling in the construction noise assessment?</i>	be managed. The proposed conditions (provided as Appendix Five to Volume II) requires the preparation of a Construction Noise and Vibration Management Plan. The content of this management plan is provided in Schedule 2 of Appendix Five and item (h) states that where noise is predicted to be exceeded, a schedule will set out mitigation and controls to minimise effects as far as reasonably practicable. This means that milling work (if undertaken at night) will be subject to this process. This Schedule process is described in paragraphs 310 and 311 of Technical Assessment B (Noise).
161.	HDC and KCDC	<i>There are two Figures provided which illustrate the location and type of proposed operational noise mitigation, being Figure B.29 of Final Technical Assessment B – Noise and Vibration and Figure 42-4 of “Volume II Supporting Information and Assessment of Effects on the Environment. Could the Applicant please confirm which Figure should be relied on as they are different in terms of level of detail provided?</i>	Figure B.29 provides a pictorial summary of the noise treatment design for the Project as a whole. The Councils should refer to the extent of surfaces and barriers as shown on the noise drawings provided in Volume III (refer to figures NV201-218). Proposed conditions DRN1, DRN2 and DRN3 deal with operational noise and noise barriers and these do not refer to these drawings. These conditions set out the extent of mitigation required by chainage and specifically DRN3 requires the extent of mitigation that is proposed be confirmed as part of the s.176A Outline Plan process (as per condition DG3).

Water Quality

162.	HDC and KCDC	<i>Could the Applicant please explain how the National Policy Statements – Fresh Water (NPSFW), Regional Policy Statements and district plan requirements related to water quality are addressed in the proposed designation conditions such that they fulfil the territorial authority obligations under these instruments?</i>	The proposed designation conditions manage land use effects as regulated by the district plans. That reflects s.176(1)(a) of the RMA, which provides that once a designation is included in a district plan, s.9(3) does not apply to the project subject to the designation. The conditions that address water quality matters are proposed to apply to the various discharge consents and water permits required for the Project works from the respective regional councils. Accordingly, the designation conditions do not address water quality matters. This differentiation of functions is recognised in Chapter 11 of the Horowhenua District Plan where it states that: <i>“...given the framework of the law, many of the methods that have been identified for dealing with water issues involve actions by Horizons Regional Council, as set out in the One Plan, whose functions enable it to have more direct influence over activities involving water. It should be noted that the “water” issue below is principally concerned with the land use effects on water and the surface of the water. It is acknowledged that Horizons</i>
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No.	Jurisdiction	Information requested	Waka Kotahi response
			<p><i>Regional Council is principally responsible for the quality and quantity of water within Horowhenua."</i></p> <p>The obligations of the territorial authorities with regards to the proposed designation conditions is to assess them in terms of their legality and effectiveness in managing the relevant adverse effects of the Project, and to recommend changes to Waka Kotahi as the Requiring Authority.</p> <p>A full assessment of the Project against the relevant provisions of the NPS-FM, the respective RPS's, and the respective Operative and Proposed District Plan's is provided in Part I of the AEE.</p>
163.	HDC and KCDC	<p><i>The KCDC District plan, Policy INF Gen P4 calls for the use of adaptive management measures.</i></p> <p><i>Could the Applicant please clarify how this adaptive approach has been incorporated into the mitigation measures proposed to manage water quality effects?</i></p>	<p>Policy INF Gen P4 (clause e) requires adaptive management measures to be implemented where uncertainty may exist around impacts over time. In this case, the water quality mitigation measures proposed are based on significant experience on other similar projects across New Zealand. The receiving environments and their characteristics are well understood as are the nature of the Project activities that require consent. On that basis, there is no uncertainty around what impacts the Project activities may have over time and an adaptive management approach is not required in terms of clause e) of the policy.</p>
164.	HDC and KCDC	<p><i>The CEMP requirements as required by the designation conditions do not appear to be connected to the CEMP required by the resource consent conditions. The designation conditions are silent on the matter of minimizing and managing erosion. Could the Applicant please clarify how the requirements of the territorial authorities under the relevant national, regional and district policies and objectives and in relation to erosion are captured in the conditions for this application and how the CEMP will be prepared and approved to address both district and regional requirements?</i></p>	<p>Refer to response to request 162.</p> <p>The approach to managing effects is provided in Part H of the Supporting Information and Assessment of Effects on the Environment (provided in Volume II). Relevant sections include:</p> <ul style="list-style-type: none"> - Sections 59.2 and 59.3 describe the approach and process proposed for management plans. An explanation as to content is provided in section 59.2.2 and the proposed approval processes (which councils) are in section 59.3. - Section 60 provides information on the measures to manage effects and specifically the role of management plans in implementing those measures. <p>Section 61 summarises the effects that are managed by the designation and the resource consent conditions.</p>
165.	HDC and KCDC	<p><i>Technical Assessment H - Water Quality recommends instream water quality</i></p>	<p>Refer to response to Request #162, which explains that water quality is managed through the regional consent applications and conditions.</p>

No.	Jurisdiction	Information requested	Waka Kotahi response
		<p><i>monitoring upstream and downstream of the construction zone to determine the water quality effects of the project.</i></p> <p><i>Could the Applicant please clarify how this is captured in the conditions?</i></p>	<p>Conditions in respect of water quality monitoring and erosion and sediment control are proposed in Appendix Five of Volume II. Refer to for example RFE4, RGW2 & 3, RES1-10 and RWB2.</p>
166.	HDC and KCDC	<p><i>Technical Assessment H - Water Quality outlines the methodology used to estimate concentrations of contaminants in the receiving environment during construction. These are based on current TSS values in the stream which are increased on a pro-rata fashion based on a % increase in sediment generation for the contributing catchment.</i></p> <p><i>Given this is the case, could the Applicant please explain how we can be confident that the concentrations estimated are accurate enough to enable acute effects during rain fall events to be adequately assessed and how will the predicted 40% change in catchment D which exceeds the One Plan target will be minimised?</i></p>	<p>Refer to response to Request #162, which explains that water quality is managed through the regional consent applications and conditions.</p> <p>The Erosion and Sediment Control Technical Report (provided as Appendix 4.3 to Appendix Four in Volume II) provides details of the sediment yield estimates (refer page 24 to 31) and includes an explanation as where estimation has been used on previous projects, that USLE significantly over estimated actual yields (paragraph 119) and thence the confidence that can be taken from the available prediction tools.</p>
167.	HDC and KCDC	<p><i>The Design and Construction Report recognizes that higher intensity rainfall events have the potential to increase the volume and sediment load discharged from sediment control devices and has set trigger events above which more significant outflows from sediment control devices are likely to occur.</i></p> <p><i>Could the Applicant please clarify how these events affect downstream water quality in the receiving environment and how do the</i></p>	<p>Refer to response to request 162, which explains that water quality is managed through the regional consent applications and conditions.</p> <p>The Erosion and Sediment Control Technical Report (provided as Appendix 4.3 to Appendix Four in Volume II) describes the proposed management approach. The outputs from this report inform Technical Assessment H (Water Quality) and in turn informs Technical Assessment K (Freshwater Ecology). The development of the proposed erosion and sediment control was iterative in response to outputs and response from Technical Assessments H and K (as well as Assessment J).</p> <p>The approach is then provided for in the proposed resource consent conditions provided in Appendix Five to Volume II.</p>

No.	Jurisdiction	Information requested	Waka Kotahi response
		<i>mitigation measures proposed respond to this increased risk of adverse water quality effects in high intensity rain fall events and appropriately minimise them?</i>	
168.	HDC and KCDC	<p><i>The operational estimates of contaminant concentrations in the receiving environment are based on an average annual rainfall depth. Runoff and entrainment of contaminants tends to be worse during high intensity rain fall events.</i></p> <p><i>Could the Applicant please clarify how the shorter term, potentially acute effects resulting from such events have been addressed and shown to be appropriately minimised?</i></p>	<p>Refer to response to request 162, which explains that water quality is managed through the regional consent applications and conditions.</p> <p>The operation of the stormwater treatment devices is described in Appendix 4.2 which is provided with the Design and Construction Report (Appendix Four to Volume II).</p> <p>In terms of water quality treatment of rainfall runoff, the “first flush” volumes will go through the treatment train of swales and constructed wetland before release into the receiving environment. The lengths of the swales are long and with a flat gradient, meaning a long residence time for water in the swales. After swale treatment, flows pass into the forebay and constructed wetland volumes for further treatment by settlement, biofiltration and vegetated uptake. The storage volumes are large compared to short duration, high intensity rainfall volumes and so water spends a long time inside the constructed wetlands. This means that the “first flush” from high intensity, short duration rainfall is treated through the treatment train of swale and constructed wetland – minimising the effects of road contaminants reaching beyond the constructed wetland facilities.</p>
169.	HDC and KCDC	<p><i>The extent of earthworks will not be uniform across the construction period. Could the Applicant please explain when peak earthworks will occur and how does the USLE and recommended erosion and sediment control approach accommodate this peak, manage the extent of un stabilised construction footprint and thus address the relatively increased potential risk to water quality?</i></p>	<p>Refer to response to request 162, which explains that water quality is managed through the regional consent applications and conditions and to Request #166, which explains that USLE can significantly overestimate actual sediment yield.</p> <p>Paragraph 125 of the Erosion and Sediment Control Technical Report (provided as Appendix 4.3 to Appendix Four in Volume II) provides the assumptions for the USLE calculation, which includes an assumption that the catchment will be fully exposed for the full eight months of the earthworks period (assumption (b)). This assumption is conservative as in practice areas will be progressively stabilised.</p>
170.	HDC and KCDC	<p><i>Could the Applicant please explain what erosion and sediment controls are proposed for yard areas,</i></p>	<p>Refer to response to request 162, which explains that water quality is managed through the regional consent applications and conditions.</p>

No.	Jurisdiction	Information requested	Waka Kotahi response
		<i>temporary works areas and other activities undertaken during the enabling/establishment works period, how this will be documented and how will the appropriateness of the controls be confirmed?</i>	Section 4.3 of the Design and Construction Report (Appendix Four to the Volume II) confirms that erosion and sediment control measures are proposed to be used during establishment works. Proposed resource consent conditions (provided as Appendix Five to Volume II) require that erosion and sediment control plans to be certified by the regional councils (refer to condition RES3 and RES6 for example).
171.	HDC and KCDC	<i>Parts of the proposed project will be constructed in a flood plain. Could the Applicant please explain how the additional risks to erosion and sediment controls and consequently, water quality, have been addressed in these areas?</i>	Refer to response to request 162, which explains that water quality is managed through the regional consent applications and conditions. Almost the entire Ō2NL Project will be constructed on the piedmont alluvial plain at the foot of the Tararua Range. In general, such landforms are low angle and low energy environments subject to deposition rather than erosion. Consequently, the environment should naturally mitigate rather than exacerbate the risk of erosion and the need for sediment control. The measures proposed are therefore conservative, greater than likely necessary.
172.	HDC and KCDC	<i>Technical Assessment H - Water Quality states that hydrological effects could be mitigated through increased infiltration in catchments predicted to have > 10% impervious area. Could the Applicant please explain how and where this will be achieved?</i>	Refer to response to request 162, which explains that water quality is managed through the regional consent applications and conditions. The operation of the stormwater treatment devices is described in Appendix 4.2 which is provided with the Design and Construction Report (Appendix Four to Volume II). This explains that any potential increase in runoff during the 'extreme' design event considered (1% AEP +CC) will be accommodated within the stormwater management system. This generally relies on attenuation and then infiltration and percolation. When infiltration and percolation are not possible (when events exceed the design standards) excess flow will be discharged to existing watercourses. Any effects of the proposed highway on water quality will be 'less than minor' compared to other contaminants. All contaminants will be 'diluted' by the large flows.
174.	HDC and KCDC	<i>Technical Assessment H - Water Quality does not address the potential effects and mitigation in relation to water quality and flood plain function for the material supply areas adjacent to the Ohau River and Waikawa stream. Could the Applicant please provide this information?</i>	Refer to response to request 162, which explains that water quality is managed through the regional consent applications and conditions. The Draft Erosion and Sediment Control Plan (provided as Appendix 4.3.3 to Appendix Four in Volume II) applies to all earthworks, including material supply sites. Site specific erosion and sediment control plans (proposed condition RES1) will be prepared that respond to context and sensitivity with input from experts as required.

No.	Jurisdiction	Information requested	Waka Kotahi response
176.	HDC and KCDC	<p><i>The application states that in the absence of management actions, the effects of water abstraction are high and this includes potential exacerbation of water quality effects. Technical Assessment H - Water Quality does not appear to address this point.</i></p> <p><i>Could the Applicant please clarify the type, scale and potential risk to water quality from this activity?</i></p>	<p>Refer to response to Request 162 that explains that water quality is managed through the regional consent applications and conditions.</p> <p>Management actions are proposed and, therefore, the stated potential high effect will not eventuate. In summary, the proposed water abstraction strategy, using various other sources of water prior to abstraction from rivers and a global consent to 'share the load' will largely avoid any water quality effects. Taking only from the existing core allocation (except when above median flows), only above minimum flow, and at a maximum rate of 10% of the minimum flow means that any effects will be within the measurement uncertainty ($\pm 8\%$) of open channel flow. The effects of abstraction will therefore be 'less than minor' and not "high".</p>
177.	HDC and KCDC	<p><i>Could the Applicant please describe how resource the permanent stormwater devices will be operated and maintained in a manner that enables them to provide efficient and effective treatment of stormwater prior to discharge and how will performance of these devices be assessed and reported during operation?</i></p>	<p>The operation of the stormwater treatment devices is described in Appendix 4.2 which is provided with the Design and Construction Report (Appendix Four to Volume II) (facilities) and is described in response to request 168.</p> <p>Technical Assessment H (Water Quality) (Volume IV) assesses the effects of stormwater runoff from the operation of the Project and this confirms that an overall positive effect on water quality. The water quality mitigation measures proposed are based on significant experience on other similar projects across New Zealand. The receiving environments and their characteristics are well understood as are the nature of the Project activities that require consent. Accordingly, no conditions are proposed requiring the performance on the devices to be reported during operation.</p> <p>The proposed stormwater treatment system will fall within Waka Kotahi maintenance regime. Maintenance of swales and constructed wetlands is documented in New Zealand best practice guidelines in the Wellington region and elsewhere. The key features are visual monitoring of plant health, sediment and litter capture volumes, clear flowpaths and free-flowing conditions in pipes/catchpits. Maintenance is generally carried out with hand tools, gardening skills and clear of the traffic lanes. Access for vehicles and small machinery will be incorporated into the landscape design of the device areas.</p>

Hydrology and Flooding

178.	HDC and KCDC	<p><i>Para 115 in the Final Technical Assessment F – Hydrology and Flooding report indicates inundation duration will be short, based on the short catchment response times. The Report</i></p>	<p>Please find below figures that show the change in duration of inundation from the Ō2NL Project during the 1% AEP design event (1:100 year flood event at 2130 and allowing for climate change) (provided at full size as Attachment 5).</p>
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No.

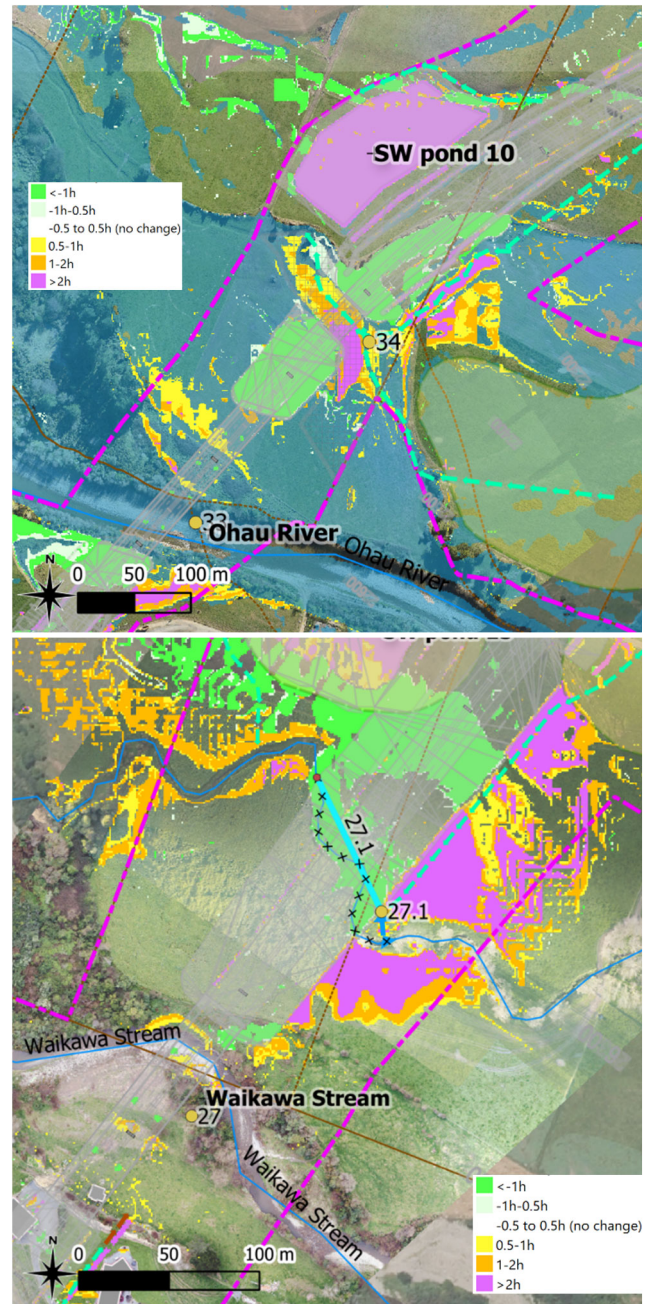
Jurisdiction

Information requested

Waka Kotahi response

provides two figures (F.15 and F.25) showing pre and post water level comparisons over time at two locations with neither of these figures appearing to extend over a long enough period to account for when inundation depths approach zero metres.

Could the Applicant please quantify the changes to the duration of flood inundation on active pasture and/or crop land beyond the designation boundary within the 2D extents of the three models? (This could be mapped as a time difference between pre and post O2NL construction from when inundation commences to when inundation ceases for a range of time bands (minimum of 0 to 1 hour) and for both the 10 year and 100 year scenarios).



These figures show that in a 1:100 year flood event at 2130 and allowing for climate change:

- Ohua River - the duration of inundation increase is approximately 60 minutes in a small section of the property located to the east of the Project.
- Waikawa Stream - the duration of inundation increase is between 60 and 120 minutes on land upstream of the Project.

Technical Assessment F therefore concludes that the final highway could be constructed so that any effects outside of the designation would be 'less than minor'.

No.	Jurisdiction	Information requested	Waka Kotahi response
			<p>The reasons for this conclusion were that those few areas potentially affected:</p> <ul style="list-style-type: none"> - Are small and of limited extent; - Are under pastoral land use ; - Are generally already prone to flooding, or immediately adjacent to areas prone to flooding; - Any increase in the depth of flooding will be small, generally only a few centimetres; - Any increase in the duration of flooding will be short, generally less than an hour or two; - Given the above, the area will recover rapidly from any increased inundation; and - The potential effects of the increased flood risk will be infrequent and only during extreme events.
179.	HDC and KCDC	<p><i>Figures showing peak water level differences and velocity changes in the Final Technical Assessment F – Hydrology and Flooding Report do not include a legend clarifying the various colour bands.</i></p> <p><i>Could the Applicant please provide legends for these Figures?</i></p>	<p>A revised version of the technical report to include the legends that were omitted in error has been prepared and included in Attachment 6.</p>

Contaminated Land

180.	HDC and KCDC	<p><i>Could the Applicant please explain how, at this stage in the project, excluding site contamination from the application does not pose a material issue/risk to other disciplines regarding their respective design/approach, and therefore the overall project concept?</i></p>	<p>The NoR is based on a concept design to allow an envelope of effects to be assessed and consented, and the extent of the land required for the Project to be defined sufficiently for the NoRs to be given.</p> <p>Detailed design stages undertaken subsequent to the confirmation of the NoRs will incorporate the findings of a range of updated investigations (for example, site specific geotechnical assessments and detailed site investigations). Any material findings from the contaminated land investigation will be factored into that detailed design process.</p> <p>Should the detailed design process necessitate any changes to the designation conditions, or result in additional land being required, then any necessary RMA approvals will be sought at the time. This is common practice throughout the country for major linear infrastructure projects.</p> <p>It is important to note that any risks associated with not seeking contaminated land related resource consents are borne solely by Waka Kotahi as the Project proponent.</p>
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No.	Jurisdiction	Information requested	Waka Kotahi response
181.	HDC and KCDC	<p><i>The submitted PSI has identified 35 'potential HAIL sites', 30 within the proposed designation and 5 adjacent and has further ranked these sites as either 'low', 'medium' or 'high' risk, based on 'the likelihood and the nature of contamination existing at the site from a particular activity'. Eight sites ranked 'medium' risk and one site ranked 'high' risk are identified as requiring further investigation and these sites are listed in proposed condition REW4.</i></p> <p><i>Following the process set out in the NES-CS, and as full site walkover has not yet been undertaken, could the Applicant please comment if it would be more appropriate to first require the PSI to be revised and updated following a complete site inspection, and then require DSIs for all identified pieces of land where the PSI cannot conclude that it is 'highly unlikely that there will be a risk to human health if the change of use is made' (Regulation 8(4) and/or that the soil disturbance component cannot meet permitted activity thresholds (Regulation 8(3))?</i></p>	<p>Waka Kotahi considers that the PSI is complete for its intended purpose and does not require subsequent revision.</p>
182.	HDC and KCDC	<p><i>The PSI states that the risk screening system is based on the Ministry for the Environment (MfE) Contaminated Management Guideline No 3: 'Risk Screening System'.</i></p> <p><i>Could the Applicant please provide the template and workings of the risk screening, including the parameters adopted and the inputs?</i></p>	<p>This information is not required to better understand the nature or extent of effects given that no applications have been made during this process. This is a technical approach matter that can be discussed by the relevant experts during and as part of the preparation of any future applications for resource consent under the NES-CS.</p>

No.	Jurisdiction	Information requested	Waka Kotahi response
Planning			
183.	HDC and KCDC	<p><i>Section 19 of Volume II Part D states:</i></p> <p><i>'The activities that require resource consents pursuant to sections 9(2), 13, 14 and 15 of the RMA, the NES-F, the NES-CS, One Plan and the PNRP are described in detail within the Rule Assessment at Appendix One and summarised below. Appendix One also sets out the permitted activity rules applicable to the Ō2NL Project.</i></p> <p><i>All regional resource consents required for the Ō2NL Project are being sought as part of this application, whether they are explicitly specified or not. If, after detailed design is complete, further or different consents are required these will be sought at the time'.</i></p> <p><i>Section 19.7 of Volume II Part D states:</i></p> <p><i>'Waka Kotahi will undertake detailed site investigations (DSIs) including soil testing of sites traversed by the Ō2NL Project in subsequent design phases and once land access becomes available. Informed by the DSI results, if necessary</i></p>	<p>Waka Kotahi confirms that DSIs will be undertaken as access to the sites where investigations are required becomes available. Until this access is secured Waka Kotahi is not in a position to confirm whether any resource consents are necessary.</p> <p>Should the investigations confirm that a resource consent is required by the NES-CS regulations, then such consents will be sought at that time.</p> <p>The proposed approach to contaminated soil is embedded by proposed resource consent condition REW4.</p> <p>Waka Kotahi does not anticipate that any resource consent required by the NES-CS regulations will necessitate works outside of the designations. However, if this is the case Waka Kotahi has the ability to, if necessary, seek an alteration to the designation under section 181 of the RMA.</p>

No.	Jurisdiction	Information requested	Waka Kotahi response
		<p><i>Waka Kotahi will then apply for any resource consents required by the NES-CS regulations and/or the relevant Regional Plans. Waka Kotahi will share the results of the DSI with the relevant district and regional council when they are completed.'</i></p> <p><i>These paragraphs appear to contradict each other and there is potential that the consents required by the NES-CS could affect the alignment of the designation. Could the Applicant please explain why potential consenting requirements under the NES -CS do not need to be addressed at this stage?</i></p>	
184.	HDC and KCDC	<p><i>The O2NL Project does not include a connection between East Levin and Tara-Ika between Tararua Road and Queen Street East, and yet this is shown as a key component of the Tara-Ika Structure plan.</i></p> <p><i>Could the Applicant please provide a place based comparison of the before (no link) and after (with the pedestrian link and then a multi-mode link) assessment of connection options.</i></p>	See the response to request 139.
185.	HDC and KCDC	<p><i>Appendix 5, reference D.1 and D.2 describes the designation as:</i></p> <p><i>'The construction, operation, maintenance and</i></p>	The term improvement in the context of the designation relates to potential improvements that may be needed to be undertaken to enable the continued efficient, effective and safe operation of the land transport system. Such improvement activities may for example include new

No.	Jurisdiction	Information requested	Waka Kotahi response
		<p><i>improvement of a state highway and shared user path and associated infrastructure, between Taylors Road (to the north of Ōtaki) and State Highway 1 north of Levin known as the Ōtaki to North of Levin Highway Project.</i></p> <p><i>Could the Applicant please explain what is meant by 'improvement' and describe the nature of the activities undertaken that would constitute improvement?</i></p>	<p>improved barriers, pavement, lane control or lighting technology.</p>
186.	HDC and KCDC	<p><i>Appendix 1 of the AEE provides a Rules Assessment against the Horizons One Plan and the Proposed Natural Resources Plan for the Wellington Region, however, there is no assessment of the Project against the Kapiti Coast District Council and Horowhenua District Council District Plan rules.</i></p> <p><i>Could the Applicant please provide an assessment of the Project against the HDC and KCDC District Plan rules, to demonstrate that a Notice of Requirement to designate is the most appropriate mechanism to achieve the objectives of the Requiring Authority (s.171(1)(c) RMA)?</i></p>	<p>Waka Kotahi notes that the s171(1)(c) of the RMA test is not whether the work and designation are the most appropriate mechanism for achieving the Project objectives, but whether the work and designation are reasonably necessary to achieve the Project objectives.</p> <p>An assessment of whether the work and designation is reasonably necessary to achieving the objectives of the Ō2NL Project is provided in section 72.2 of the Supporting Information and Assessment of Effects on the Environment Report (Volume II).</p> <p>No assessment of the District Plan rules is necessary to address s171(c).</p>
187.	HDC and KCDC	<p><i>Section 12.8 of the AEE notes that the design and timing of reconnecting network utilities effected by the O2NL will be discussed and developed in consultation with network utility owners.</i></p> <p><i>Could the Applicant please comment on whether the intention is to rely on the Network Utility provisions of the HDP and KCDP to</i></p>	<p>The scope of the proposed designation (through the NoR) seeks to authorise all works needed to construct, maintain and operate the state highway. It was intended that this extended to include any works necessary to protect, relocate and reconnect network as required to enable the Ō2NL Project. These works fall within the proposed definition of 'establishment works' included in the proposed Conditions (see also section 4.3 the Design and Construction Report provided as Appendix Four to Volume II).</p> <p>As explained in the response to request 192, these works are generally permitted by the rules in the HDP and KCDP. It is for this reason Waka Kotahi seeks that</p>

No.	Jurisdiction	Information requested	Waka Kotahi response
		<p><i>undertake these works, and whether these works are likely to be permitted by the District Plans?</i></p>	<p>the requirement for an outline plan is waived under section 176A(2) (see response to request 193).</p>
188.	HDC and KCDC	<p><i>Section 18.6 notes that within the Kāpiti Coast District, for several hundred metres, the SUP is located outside of the Ō2NL designation, but within the existing SH1 designation. Section 19.12.3 of the AEE notes that in some locations the SUP is located outside of the area subject to the proposed designation.</i></p> <p><i>(a) Could the Applicant please clarify if those parts of the SUP that are outside the proposed O2NL designation are within the existing SH1 designation, or are there parts of the SUP that fall outside either designation?</i></p> <p><i>(b) If the SUP is located outside either the existing SH1 designation or the proposed O2NL designation, could the Applicant please comment on the potential resource consents that may be required under the KCDP, or if the works are permitted by the rules in the KCDP?</i></p>	<p>The existing property boundaries for SH1 are shown in a brown line on drawing set 02 – General Arrangement and the proposed Ō2NL Project designation is shown in a purple line. This shows the SUP is within the Ō2NL Project designation and when the SUP is outside of the purple lines, it is within the brown lines which is the existing SH1 designation. Therefore, the SUP is within the existing SH1 designation when not within the Ō2NL Project designation.</p>
189.	HDC and KCDC	<p><i>Section 19.12.3 of the AEE notes that the works to relocate and improve the Tararua Road and existing SH1 intersection are located outside of the proposed designation and partially within the existing SH1 designation and 'where the SUP and intersection are not within the existing or</i></p>	<p>It is assumed that this request relates only to the works proposed at the intersection of Tararua Road with SH1 and the associated level crossing of NIMT.</p> <p>A planning assessment of works against the rules of Horowhenua District Plan is attached (Attachment 7). The works associated with the relocation of the level crossing can comply with the rules in the District Plan and Therefore no resource consent or designation is required from HDC to authorise the works.</p> <p>However, s176(1)(b) approval will be required for any works undertaken on the KiwiRail designation, including</p>

No.	Jurisdiction	Information requested	Waka Kotahi response
		<p><i>proposed designations, the rules in the HDP apply'.</i></p> <p><i>Could the Applicant please provide an assessment of the SUP and intersection works that are not located within the existing or proposed designation against the HDP rules and identify whether the works are permitted or will require consent under the HDP?</i></p>	<p>the closure of the existing level crossing and the construction of the relocated level crossing.</p>
190.	HDC and KCDC	<p><i>Section 10.1 of the AEE, final paragraph discusses the Design Audit process and makes reference to a Figure, however the Figure appears to be missing.</i></p> <p><i>Could the Applicant please provide the referenced Figure?</i></p>	<p>The reference to a figure in Section 10.1 of Volume II is an error and therefore the reference to a figure should be ignored.</p>
191.	HDC and KCDC	<p><i>Section 3.3.3 of the AEE notes the following:</i></p> <p><i>'The Tara-Ika Structure Plan shows an east/west arterial road (referred to as East West Arterial) crossing over Ō2NL and connecting the Tara-Ika Growth Area with Arapaepae Road. The East West Arterial provides access to the proposed commercial centre of Tara-Ika and provides additional capacity in the transport network. As the East West Arterial will cross over O2NL it will require bridging, which will require RMA approvals. It is expected that the RMA approvals will be sought in the near future.'</i></p> <p><i>(a) Could the Applicant please explain what structures (i.e. bridging and supports) would be required to accommodate the EWA and O2NL as depicted in the District Plan and NOR (noting that</i></p>	<p>See the responses to request 133 to 139.</p> <p>Any structures necessary for the East West Arterial do not form any part of the scope of NoR for the Ō2NL Project and therefore any description of, or design of, such structures is not relevant to the consideration of the NoR.</p> <p>For this reason, the effects of such structures are not relevant to the consideration of the NoR.</p> <p>In addition, Waka Kotahi notes that the construction of the East West Arterial is not a permitted activity and that it would require separate district council and regional council consents.</p>

No.	Jurisdiction	Information requested	Waka Kotahi response
		<p><i>construction of the EWA road itself is currently a permitted activity albeit subject to s178(2))?</i></p> <p><i>(b) Do any effects on the environment arise from these structures (including e.g. traffic and transportation effects, social and urban design effects, landscape / visual effects, cultural effects, and effects on the delivery of the outcomes anticipated and provided for by Plan Change 4 Tara-Ika)?</i></p>	
192.	HDC and KCDC	<p><i>Section 18.2 of the AEE notes that ‘establishment works are limited in scale and have minor adverse effects. Further, establishment works are generally permitted by the rules in the relevant District Plan. It is on this basis that Waka Kotahi seeks to waive the requirement for an outline plan for establishment works’.</i></p> <p><i>Could the Applicant please undertake an assessment of the establishment works as defined in Appendix 5 Draft Conditions, to confirm that establishment works are permitted by the HDP and KCDP and that the subsequent request to waive the for an outline plan is appropriate?</i></p>	<p>See the response to request 187.</p> <p>A planning assessment has been undertaken for the establishment works. This assessment confirms that the establishment works are permitted. The assessment is provided as Attachment 8.</p> <p>Condition DGA8 states that the “<i>requirement for an outline plan for establishment works is waived under section 176A(2) of the RMA</i>”. The intention of the Condition is to confirm that the circumstances in section 176A(2) apply to establishment works and therefore the requirement for an outline plan is waived.</p> <p>For the avoidance of doubt, Waka Kotahi confirms that it seeks that the requirement for an outline plan for establishment works (as described in section 4.3 of the Design and Construction Report (provided as Appendix Four to the Volume II) are waived under section 176A(2).</p>
193.	HDC and KCDC	<p><i>Could the Applicant please comment on the intent of proposed condition DGA8 - Establishment Works when there is a process specified under the RMA (s.176A(2)) for a Requiring Authority to seek a waiver to an Outline plan requirement?</i></p>	<p>See the response to request 192.</p>

No.	Jurisdiction	Information requested	Waka Kotahi response
194.	HDC and KCDC	<p><i>Final Technical Assessment N – Productive Land, at paragraph 7 notes that the ‘extent of the restored land (and to what state it will be restored) is unknown’.</i></p> <p><i>Could the Applicant please explain what are the options available for restoration and are there minimum standards required that could be set as conditions to enable as much highly productive and highly versatile land to be restored?</i></p>	<p>Paragraph 7 in Technical Assessment N is referring to land that is needed for construction purposes and following construction will be no longer required for the future operation and maintenance of the Ō2NL Project state highway and shared use path.</p> <p>On these areas of land (that are not permanently required for the operation and maintenance of the Ō2NL Project), the general approach to restoration is to clear construction materials, replace topsoil (either stockpiled or sourced) and revegetate with grass. In some instances, land will have been used during construction in a manner that is likely to result in an adverse impact on the underlying condition of the soil, subsoil and substructure layers, when compared to the pre-Project condition of the soil in a particular locality. In other instances construction activity may not have any material effect on the productivity and versatility of the land post construction.</p> <p>It is not possible to provide minimum standards that relate to versatile land and instead the point being made is that land under the construction footprint will become available again following construction and is not permanently lost to production, although productivity potential of this land area is likely to be impacted in some instances.</p>

Waka Kotahi trusts that the above responses sufficiently address matters raised in your request for additional information. Please do not hesitate to contact the us if you have any queries.

Nāku noa, nā



Caitlin Kelly, Principal Planner

Attachments:

Attachment 1: Transport Level of Service at 2039 using the 95th percentile growth scenario

Attachment 2: Traffic count data at telemetry sites at SH1, Ohua and SH57, Shannon

Attachment 3: Memo from Phil Peet, Stantec providing an assessment of the transport performance of Southern Intersection (Taylors Road)

Attachment 4: Transport links and integration with the PP2Ō Project (now open)

Attachment 5: Change in duration of inundation from Ō2NL Project at Ohau River and Waikawa Stream in 2130

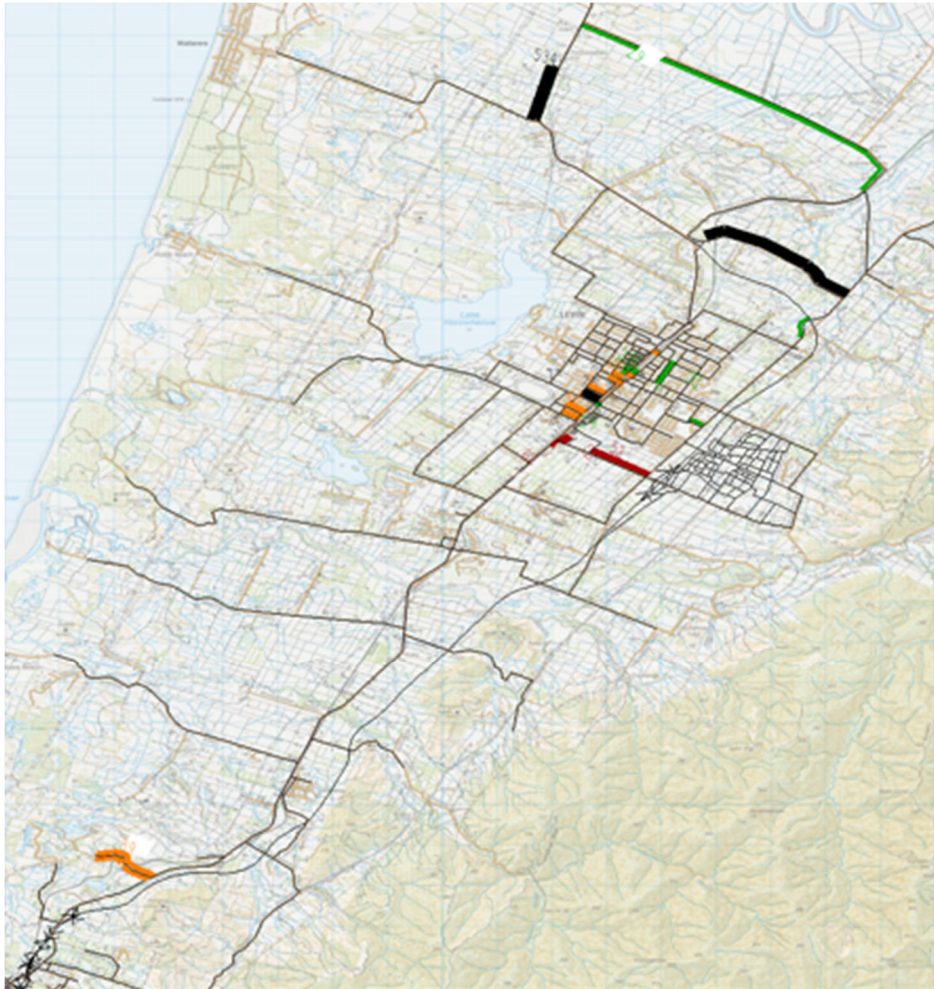
Attachment 6: Updated Technical Assessment F (Hydrology and Flooding)

Attachment 7: Assessment of the proposed works at the intersection of Tararua Road and State Highway 1 and level crossing NIMT against the rules of Horowhenua District Council Plans

Attachment 8: Assessment of establishment works against the rules of Horowhenua and Kāpiti Coast District Plans

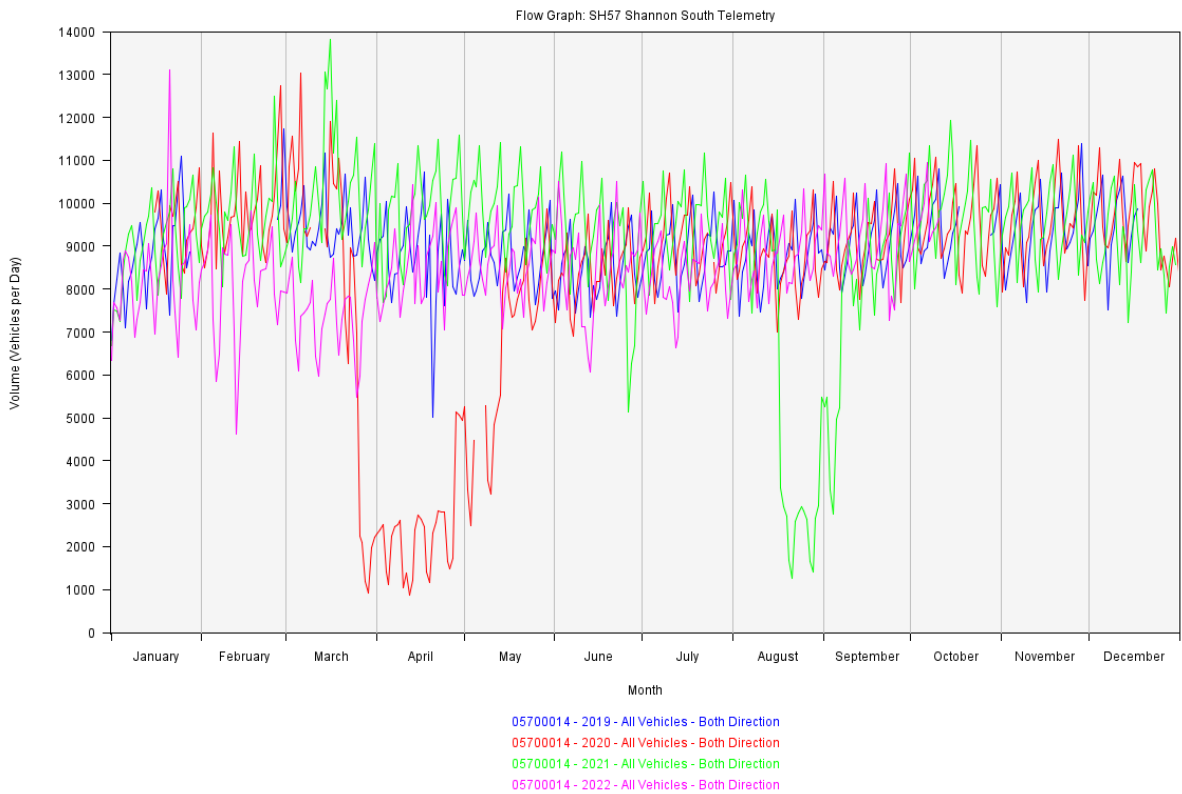
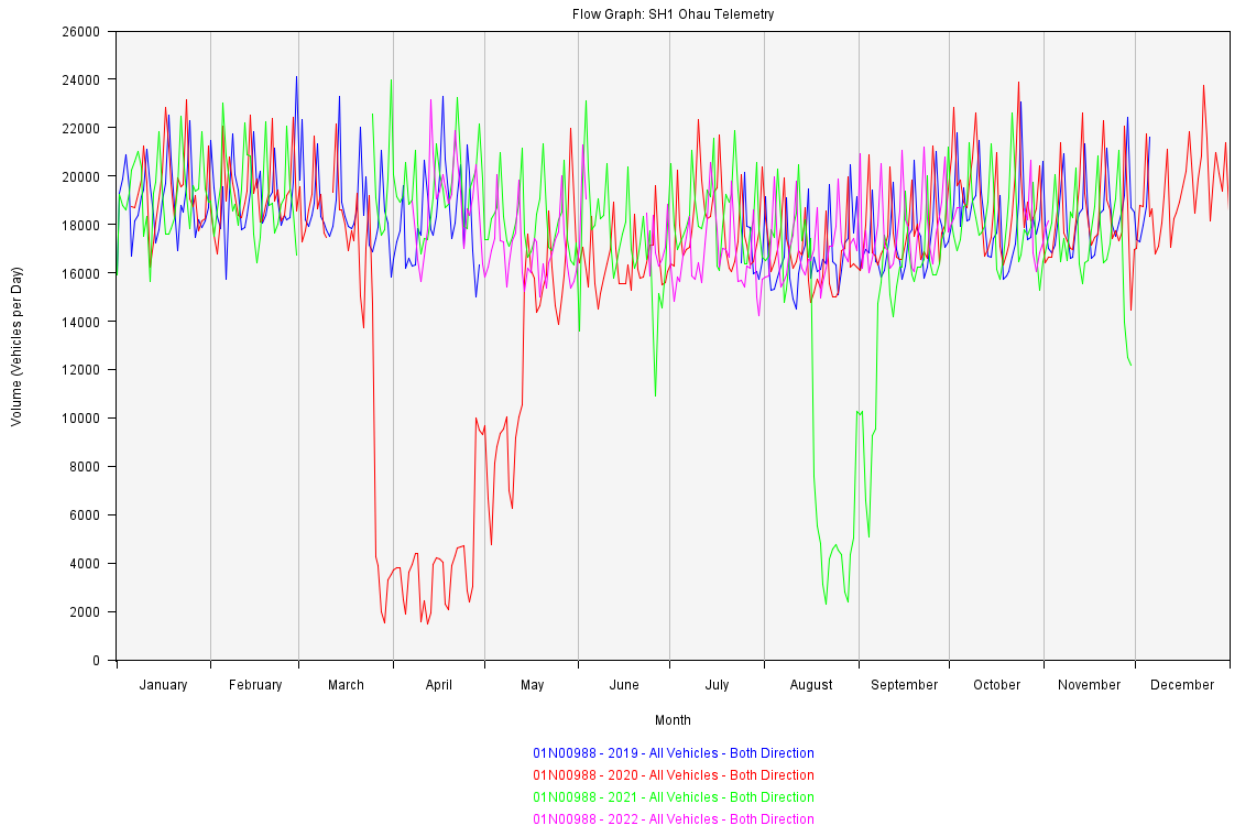
Attachment 1: Transport Level of Service at 2039 using the 95th percentile growth scenario

This figure is referred to in response to Request # 108



Attachment 2: Traffic count data at telemetry sites at SH1, Ohua and SH57, Shannon

This figure is referred to in response to Request # 109.



Attachment 3: Memo from Phil Peet, Stantec providing an assessment of the transport performance of Southern Intersection (Taylors Road)

Provided in response to Request #115

To: Rob Napier
Waka Kotahi
Project/File: 310203848

From: Phil Peet & Sam Rudge
Wellington
Date: 8 July 2022

Reference: Ōtaki to North of Levin Taylors Road Interchange Outcomes

1 Purpose

To summarise the available evidence and rationale for including an interchange at Taylors Road as part of the main works on the Ōtaki to North of Levin (Ō2NL) project.

The two options considered in detail are shown below, with the no connection option in Figure 1 and the half interchange in Figure 2.



Figure 1: Taylors Road no connection

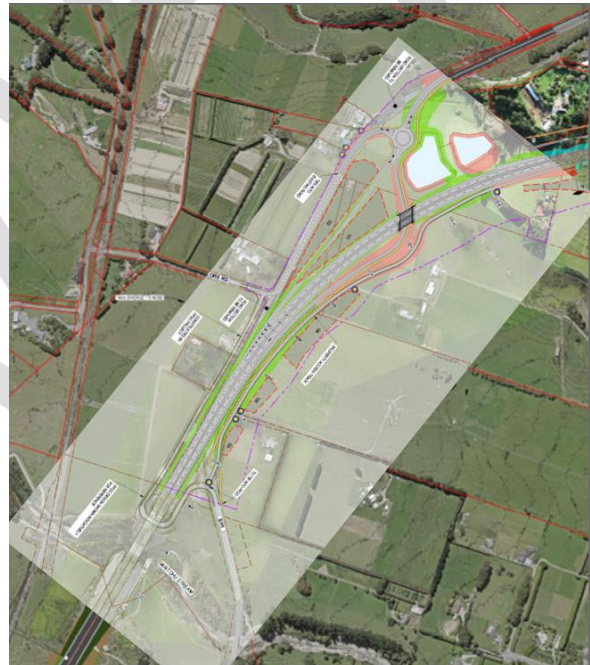


Figure 2: Taylors Road half interchange

Both options maintain property access to all required properties.

2 Option History and Issues Identified

Interchange Optioneering Timelines

- The interchange options report developed in mid-2020 identified principals for interchange design including location. The interchange principals and design requirements considered:
 - Current urban form
 - Future urban form
 - Environmental and cultural impacts
 - Suitable separation between interchanges and other significant structures
 - Direct impacts on well-established residential / commercial areas are to be avoided if possible
 - Interchanges need to connect to an existing road (and the existing road ideally should be of a standard and function that it serves a reasonable community catchment), and
 - Interchanges are generally not to be located where ramp entry and exits would be on tight horizontal curves, and
 - Interchanges need to be safe for all modes.
- Taylors Road was not identified as a potential interchange location at this time.
- Local road options for accessing Taylors Road were developed at high level in mid-2020 and progressed through an MCA Process. The MCA process identified grade separating the current SH1 with Ō2NL with no connection between and a T intersection serving Taylors Road.
- A concurrent MCA process identified that no interchange in the Manakau area was preferred.
- In August 2020 public consultation on the MCA preferred option at Taylors Road and the lack of Manakau interchange was undertaken. This is shown in Figure 3.



Figure 3: August 2020 consultation option

Full details for interchange requirements, and the development and shortlisting process, is outlined in the Interchange Options Report. Details of the option selection is available in the Ō2NL MCA Report.

Reference: 310203848

- An additional half diamond interchange with south facing ramps near Taylors Road
- Utilising the grade-separation connection already proposed for reconnecting old SH1 to:
 - Connect northbound highway traffic more directly onto the old SH1 (through to Manakau)
 - Connect southbound highway traffic from the old SH1 (from Manakau)

The design review also concluded that this option can be delivered for no additional cost (and potentially marginal cost reduction) than the no connection option as the bridge structure can be reduced in length and provide for unidirectional traffic movement only (i.e. as a southbound on-ramp), so is a smaller structure.

Waka Kotahi then progressed the option through their MCA process which found in favour of the original option with no interchange. The MCA was in favour of the half interchange for resilience and social considerations, but strongly against it in terms of visual impacts and noise impacts.

The remainder of this memo discusses those benefits and impacts.

3 Traffic Impacts

As the presence and absence of a half interchange has significant impacts on the connectivity and therefore route choice of the option, the two options were run through the project traffic model for 2039 under the 75%ile growth scenario (this model run did not have an interchange in the Manakau area). The traffic volumes north of Ōtaki are shown in Figure 4.



Figure 4: Traffic volume differences north of Ōtaki

It can be seen that under this scenario the half interchange removes approximately 3,000 vehicles off the current SH1 north of Ōtaki, compared to having no connection.

Reference: 310203848

It also shows the impact of the average speed on access to the north. It is known that Waka Kotahi does not use a 70 km/h speed limit, however this would be representative of the speed environment with the proposed revocation programme dropping the towns to 50 km/h and 80 km/h remaining on the fully rural sections and the perception of the new highway being a more attractive route. With this in place, traffic volumes on the old SH1 north of Ōtaki would be approximately 2,400 vehicles per day.

Further south in Ōtaki the difference is not as significant, but removes a reasonable proportion of the Ōtaki township traffic as seen in Figure 5.



Figure 5: Impacts to traffic volumes through Ōtaki township

The presence of the half interchange reduces traffic flow through the Ōtaki township, while not as significant as the impacts north of Ōtaki, at a 14% reduction it is a moderate proportion of the traffic .

In summary, in comparison to the direct option with no access, the half interchange would,:

- Remove around 3,000 vehicles per day on the stretch of old SH1 between Taylors Road and the PP2Ō north facing ramps north of Ōtaki as vehicles can use the new highway over this length
- No change in traffic on Mill Road for trips to Ōtaki Town Centre or Ōtaki Beach
- Remove around 1,000 vehicles per day on the old SH1 through Ōtaki as vehicles from the Manakau and Ohau use the new highway for longer trips south.

Reference: 310203848

4 Benefits and Disbenefits

A discussion about the relative merits between options for some key considerations is outlined below:

Project Objectives

Resilience

The scoring of project objectives during the MCA process only differed in terms of resilience. Not providing an interchange scored worse due to the large distance between south of Ōtaki and Tararua interchanges, creating a large diversion back onto the existing highway. This diversion would be needed for any incident along this 20km stretch of highway. The provision of the half interchange reduces the distance travelled for some detours by approximately 4km, but importantly avoids diverting all traffic through the Ōtaki township. While the road alignment for the detour was noted to be worse than the no interchange option, it was considered that overall this was an increase in the corridor's resilience compared to the no interchange option.

The worst case from the half interchange option would be a flood event that closed the access road under the Waithou Stream Bridge at the same time as an incident occurred on the Peka Peka to Ōtaki expressway over the Waitohu Stream Bridge. This is because the access road is the diversion route. However, this is considered to be incredibly unlikely as it is two unlikely events happening concurrently. It is also an issue that will be present upon PP2Ō opening and not worsened with Ō2NL¹.

Safety

From safety perspective there are benefits to both options:

- The close proximity of the on and off ramps could lead to weaving issues, however this has been discussed with technical experts from Waka Kotahi and was judged to be acceptable given the capacity of the new highway and merge / diverge volumes.
- The presence of the half interchange removes a forecast 3,000-3,200 vehicles per day from the old highway, including approximately 1,000 vehicles per day through the township itself to access destinations to the south. This is an approximate 15% reduction in traffic which has an associated safety risk improvement particularly for pedestrians and cyclists.

Other Project Objectives

No other project objective resulted in a preference for one option over the others. However, it is noted that the project objectives purposely consider benefits and impacts highway traffic rather than detailed consideration of local access.

Other MCA Considerations

Noise and Vibration

¹ In fact it is better with Ō2NL because there will be four lanes provided meaning improved contraflow opportunity, plus the entirety of the highway is elevated through this flood catchment, which is not the case with only PP2Ō in place.

Reference: 310203848

From a noise and vibration perspective the no interchange option was preferred as it avoided the likelihood of additional noise and/or vibration effects on nearby dwellings created by traffic stopping and starting at the roundabout. This is likely to affect around half a dozen properties in proximity to the roundabout, but it is noted that these dwellings will likely be experiencing a reduction in traffic noise due to most traffic moving onto the new highway.

Visual

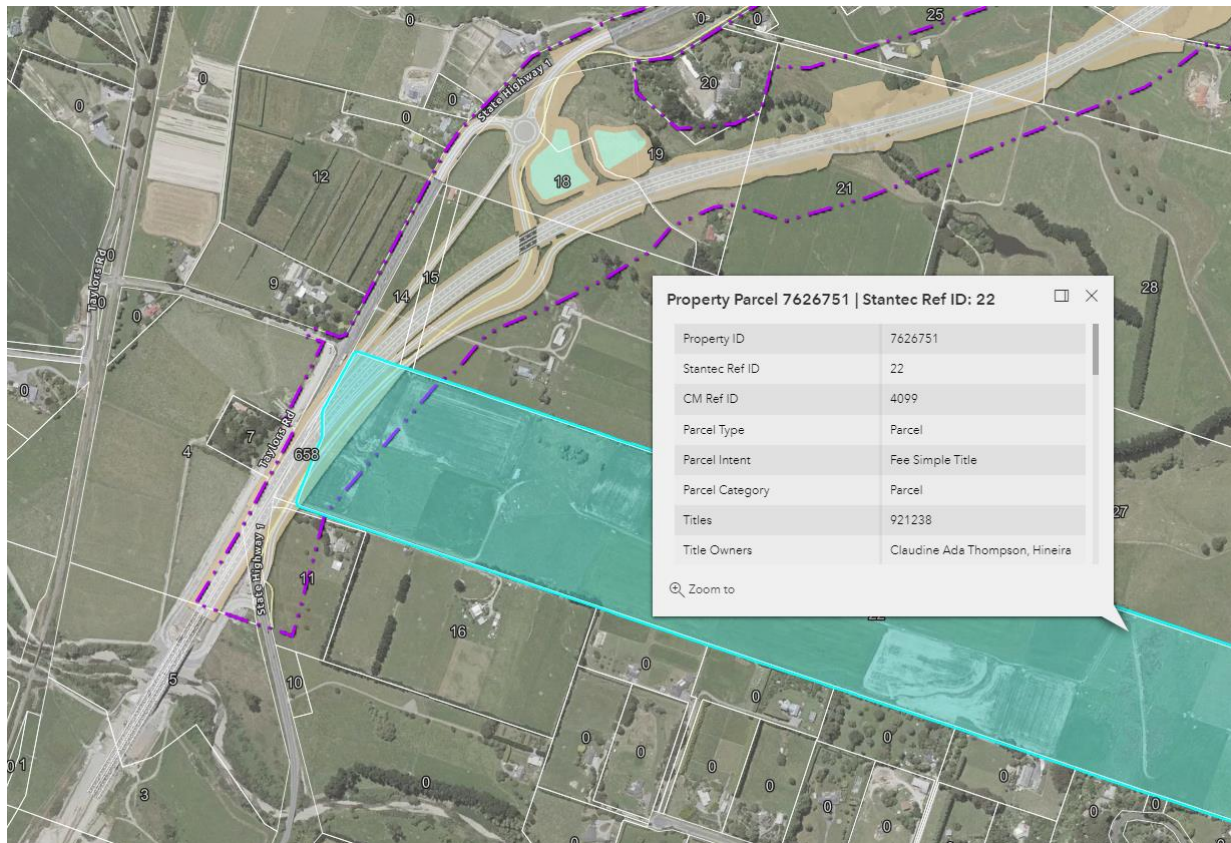
Through the MCA process it was noted that the no interchange option would result in “flowing curves”, follow the historic existing SH1, and would form part of a legible local spine linking Ōtaki, Manakau, Kuku, Ōhau, and Levin. It was judged that the half interchange was inferior as it would result in increased visual clutter (a mix of different forms with no aesthetic coherence) and the historic spine road between Levin and Ōtaki would be diverted through a circuitous and less legible route.

Other Considerations

Māori Land

The half interchange option allows a tighter curve under the new highway which enables the on-ramp and property access road to be much closer to the highway and therefore a reduction in land needed from the Māori land parcel in this area. This landowner has been affected already by PP2Ō and ideally further land take should be minimised.

Reference: 310203848



Costs

The half interchange has savings of approximately \$5M compared to the no interchange option. While the half interchange has additional costs in terms of pavements and earthworks, it has reduced complexity and size for the structural elements which more than offsets the additional roadbuilding costs.

Access

There are significant access benefits from delivering the half interchange. The southern Horowhenua area will retain direct access onto the Kāpiti Expressway without needing to traverse through Ōtaki. Access to Taylors Road from the north is simpler, and there is better connectivity to the expressway and destinations to the south. Not providing the half interchange will increase traffic through Ōtaki which will have a negative amenity impact on the township.

Traffic accessing Ōtaki from Manakau and Ohau will join the new highway at Taylors Road, use a 600m stretch of PP20 then leave the highway north of Ōtaki. This will mean some local trips using the new highway for local trips and is not expected to create any issues.

Future Proofing

The provision of access onto the Kāpiti Expressway without traversing Ōtaki will enable growth in southern Horowhenua without an interchange in the Manakau area. It is likely that this will delay the need for an interchange in this area compared to not delivering the half interchange.

Reference: 310203848

Walking and Cycling

Both options can facilitate a direct link between the PP2Ō and the Ō2NL shared use paths.

Land Acquisition

The half interchange option requires more land, but the MCA process did not identify either option as being more difficult. Both options impact on the same land parcels. As above, the half interchange is likely to have lesser effects on Māori owned land.

Alternative Route

The half interchange does not provide as higher standard alternative route in the event that the new highway is closed as it requires traffic to divert onto the route underneath the Waitohu Stream bridge. However, this is only an issue if an incident takes place on the 600m stretch between the end of the north facing ramps north of Ōtaki and the start of the south facing ramps at Taylors Road and the chances of an incident on this short stretch are very small.

As noted above, the half interchange does help mitigate the chance that SH1 traffic is required to divert through Ōtaki.

5 Council Suggested Alternative

After the development of the half interchange, a hybrid quarter interchange with full north south connectivity on the old alignment was proposed by a council representative. This was developed to ensure a two-way two-lane parallel route to SH1 throughout Kāpiti. This is outlined in Figure 6.

Reference: 310203848

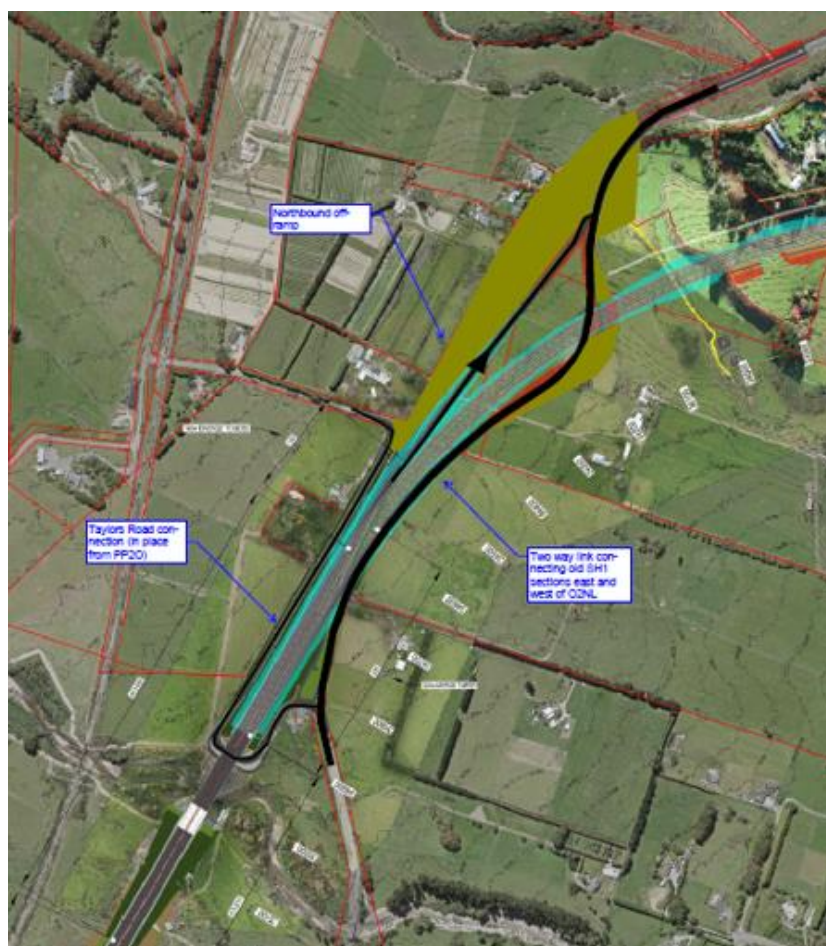


Figure 6: Quarter interchange option

Notably, to create the two-way-two lane link, it necessitated the removal of the southbound on-ramp onto the new highway.

The option was assessed at a high level but not progressed. In its favour it:

- does not have a roundabout in close proximity to the houses thereby reducing noise; and
- provides a parallel two-way two-lane road; and
- provides for north-bound trips from the highway to Manakau and Ohau

However, in terms of issues it:

- would introduce network legibility considerations as only one ramp is provided. This means that northbound trips need to take a different route to southbound trips.
- does not provide benefits to southbound travellers.
- only provides resilience benefits in one direction.
- creates a safety risk of inadvertent wrong-way use of the off-ramp by confused drivers which is more difficult to design out without a roundabout
- may have visibility issues for traffic traversing under the new highway
- requires the larger two-way link and therefore increased structural costs.

Reference: 310203848

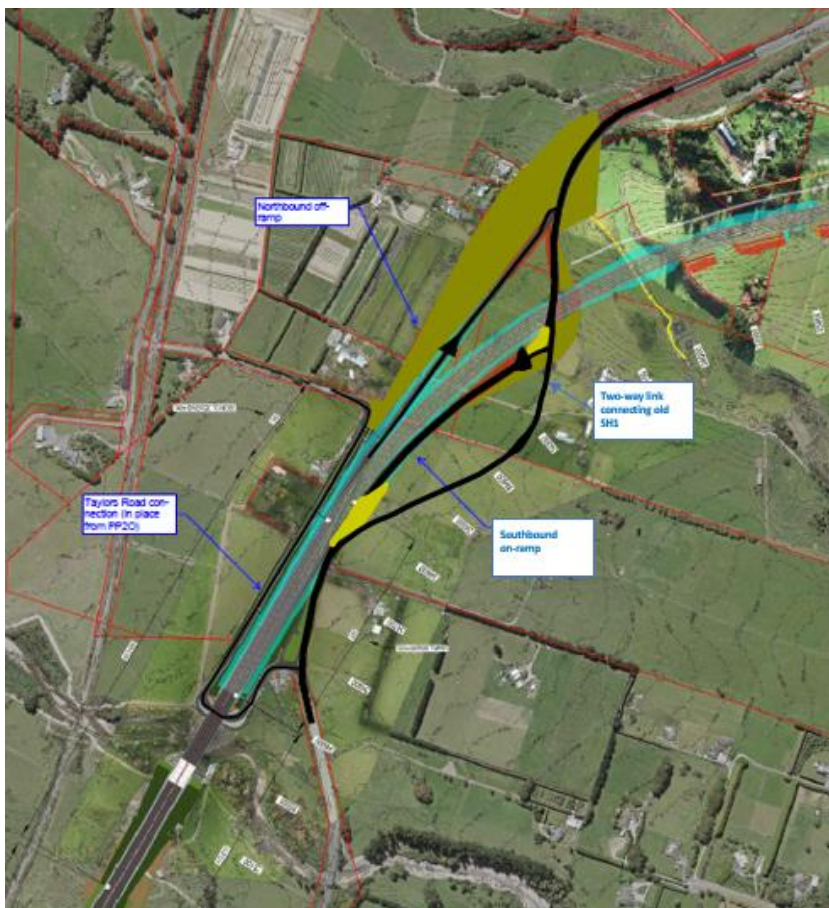
- would preclude safely being able to add a southbound onramp in the future if desired.
- results in all Taylors Road movements using the double dog leg underneath the Waitohu Stream Bridge with no alternative option if closed (such as due to flooding).

The option was discounted as while there were some benefits, it only solves half the problems and leaves half the issues. The consistency in northbound and southbound trips provided by the other two options is considered to provide a better outcome.

6 Ability to Deliver Parallel Route and Ramps

Consideration was given to whether it would be possible to deliver a two-way two land parallel route as well as south facing ramps at this location. To provide both it is likely the following would be required:

- A considerably larger structure to ensure visibility
- A realigned road that meets geometric and visibility standards, including those for the intersections.
- Increase earthworks to enable sufficient area to provide for safe turning movements onto the on-ramp
- Increased land take to enable the above works



Reference: 310203848

A key concern of this option is the additional land take needed to construct this link. It would be greater than either of the previously identified options and is likely to require land outside of the previously advised 'blue haze' presented to the landowner and outside the currently identified draft designation.

This option also creates two new priority intersections onto the reconnected old SH1. Neither of these priority intersections would be Safe System compliant and on the basis of traffic speeds and the turning movement types involved, when crashes do occur at these conflict points would likely result in death or serious injury.

This option would add significant cost and high severity crash risk without adding significant benefit.

Although it would allow a parallel route, it would only improve resilience in the extremely rare scenario that both the Taylors Road diversion and Waitohu Stream bridge are closed at the same time. It would not likely address the landscape and visual concerns or the noise concerns. This is not considered to be a significant improvement in outcomes compared to the cost and impact.

7 Summary

Despite the MCA process identifying no interchange as the preferred option for the area, the DBC has progressed a half interchange. When considering just the project objectives, it was the preferred option in the MCA process, and it has other wider benefits such as maintaining the traffic pattern that road users will have become familiar with and expectant of for 7-8 years, delaying the need for a Manakau area interchange, removing traffic from the Ōtaki township and allowing more direct access to the highway from Manakau and Ohau. These effects were not considered by the MCA criteria and their exclusion from the MCA does not preclude them being used to inform the decision-making process.

The progression of a half interchange will improve the resilience of the corridor, while improving community outcomes and connectivity which is one of the project objectives and key outcomes sought by the project.

Regards,

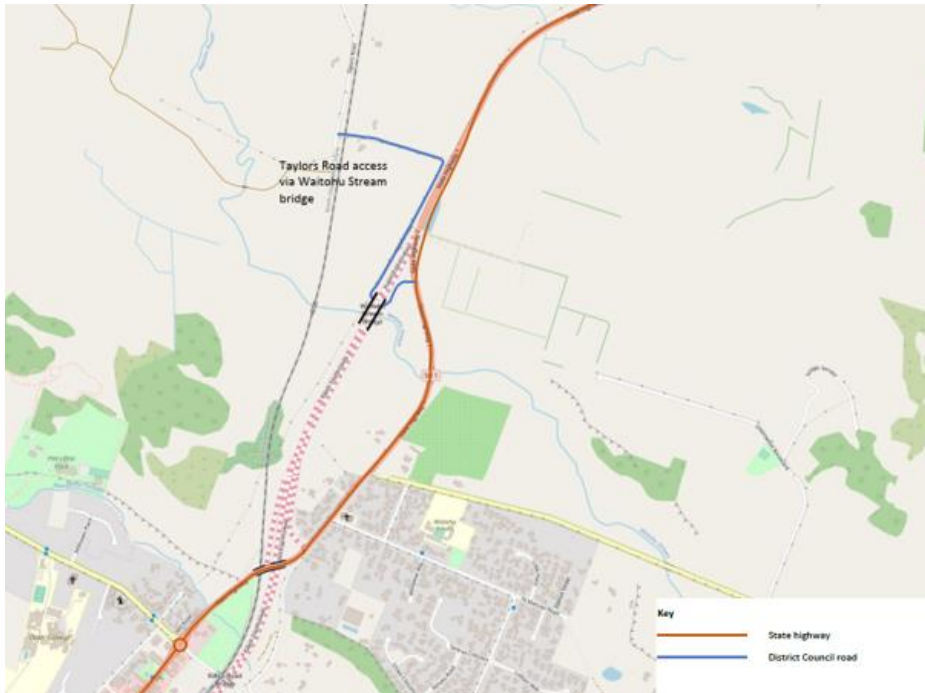
Stantec New Zealand

Phil Peet

Title: Sector Leader - Transport Advisory

Phone: +64 27 211 8246

Phil.peet@stantec.com

Appendix A: Staging of the Taylors Road Connections


- PP20 not open**
- now to late 2022
 - Taylors Rd traffic uses dog legs under bridge



- PP20 open**
- late 2022
 - Taylors Rd traffic uses dog legs under bridge
 - Travel south to Ōtaki to head north on expressway

Reference: 310203848



PP20 & Safety Works

- 2023
- Taylors Rd left-in & left-out
- Turnaround at Ōtaki interchange and SH1 turnaround facility
- Bridge dog-legs closed or restricted use (walking & cycling?)

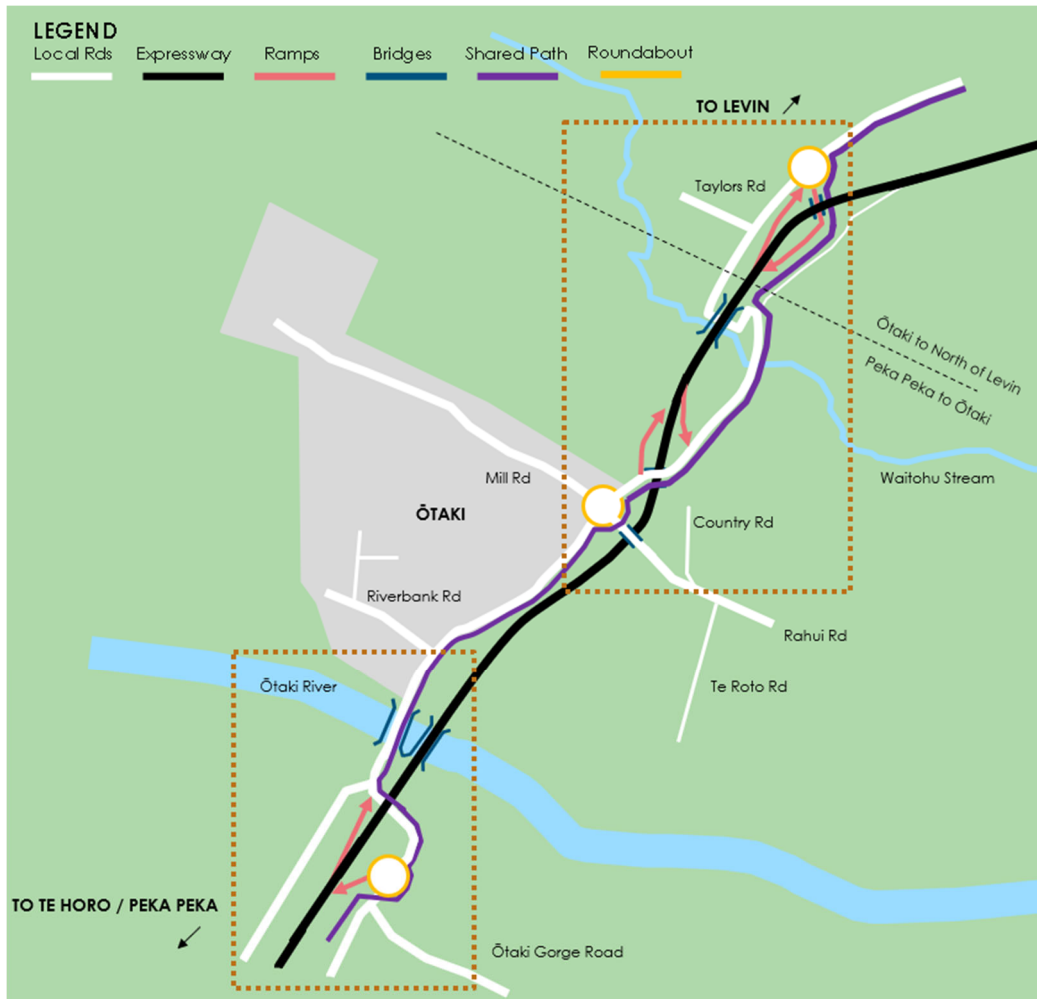


Ō2NL Open

- 2029
- Taylors Rd connected to new roundabout
- Taylors Road traffic uses old SH1 northwards, or expressway southwards
- Bridge dog-legs closed or restricted use
- Walking and cycling via connected PP20 and Ō2NL shared paths

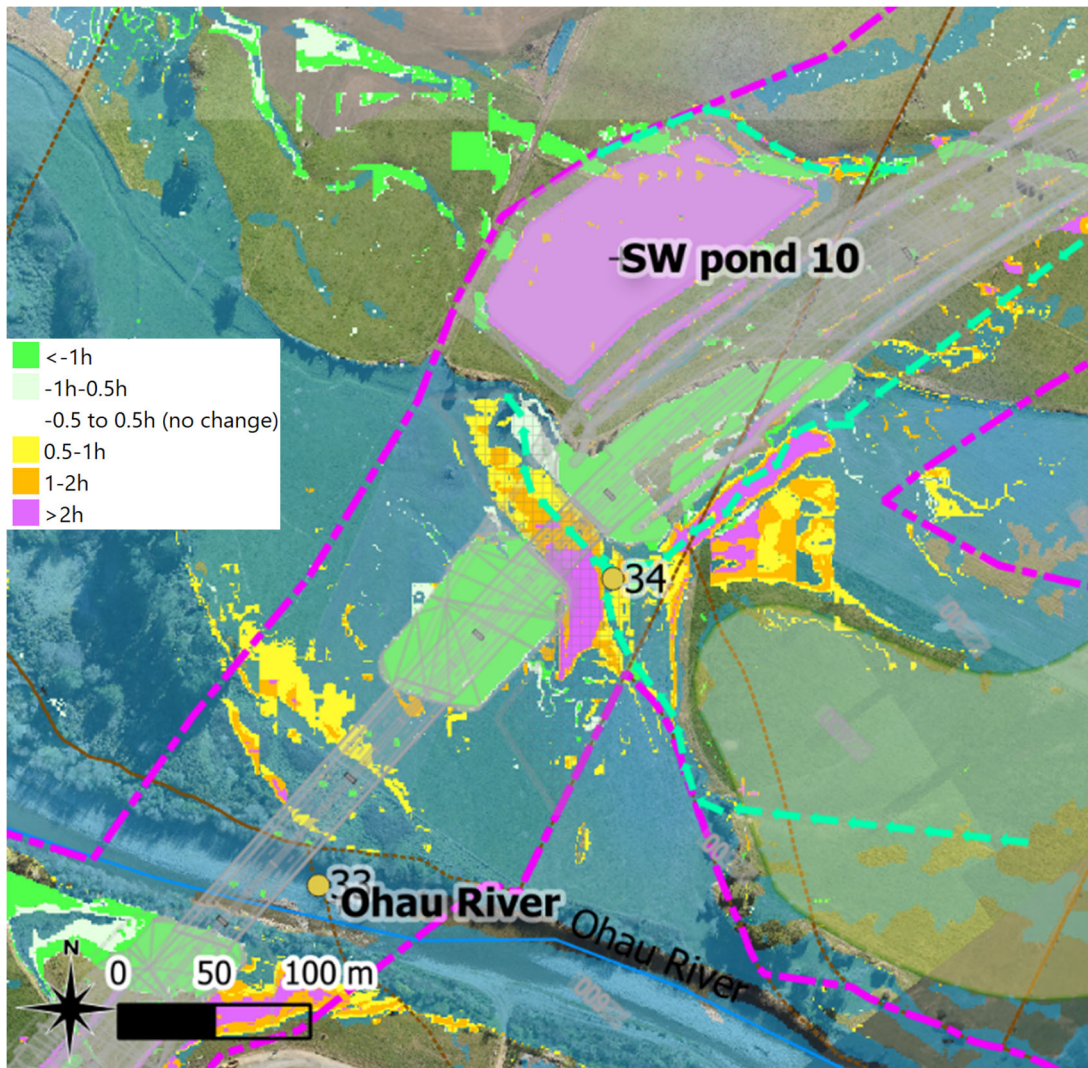
Attachment 4: Transport links and integration with the PP20 Project (now open)

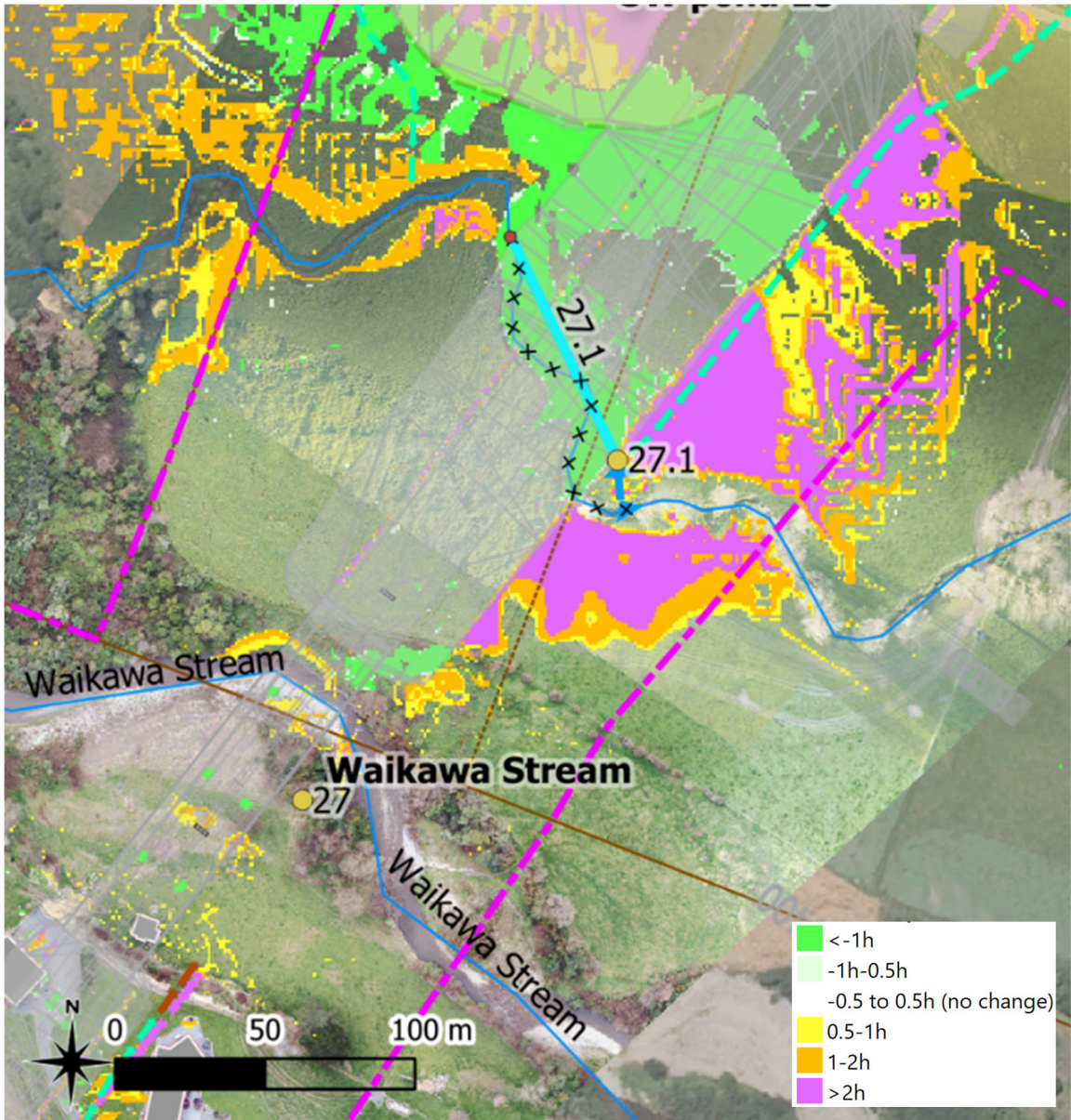
The figure below is referred to in response to Request # 118.



Attachment 5: Change in duration of inundation from Ō2NL Project at Ohau River and Waikawa Stream in 2130

The figures below are referred to in response to Request #178.





Attachment 6: Updated Technical Assessment F (Hydrology and Flooding)

A revised version of this report has been uploaded to the SharePoint site and also to the Waka Kotahi web site: [RMA applications | Waka Kotahi NZ Transport Agency \(nzta.govt.nz\)](#)

ATTACHMENT 7: PLANNING ASSESSMENT - STATE HIGHWAY 1/TARARUA ROAD INTERSECTION AND NORTH ISLAND MAIN TRUNK RAIL LINE LEVEL CROSSING

Purpose

The following sets out an assessment of the likely Resource Management Act 1991 (RMA) approval requirements from Horowhenua District Council for the improvement of the State Highway 1 and Tararua Road intersection including the relocation and upgrade of the North Island Main Trunk Rail Line (NIMT) level crossing.

Proposed activity

It is proposed to close the existing level crossing at Cambridge Street South and replace this crossing with a new crossing at the western extent of Tararua Road. The proposed works include associated earthworks and vegetation clearance; discharges of construction and operational stormwater to surface water and land; and the undergrounding of existing overhead electricity lines.

Site location

Tararua Road reserve (parcel ID 4098312), State Highway 1 road reserve (parcel ID 4104096, designation D2) and KiwiRail designation (parcel ID 4067264). The indicative location is shown on Figure 1. The existing level crossing is at X coordinates - 1792212.68 and Y coordinates - 5499145.9 and the relocated crossing will be located approximately X coordinates - 1792087.78 and Y coordinates - 5498995.81.

Figure 1: Proposed relocation of the SH1/Tararua Road/NIMT level crossing

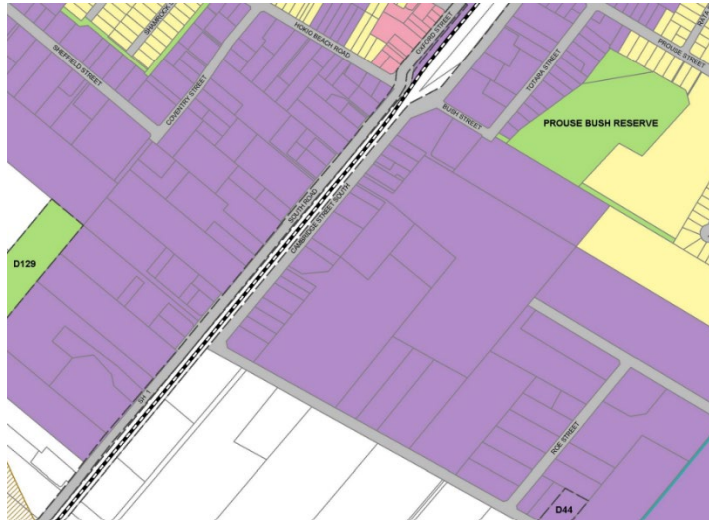


RMA Planning approval requirements

Horowhenua District Plan - Maps

The Horowhenua District Plan was made operative in 2015. The site is shown on planning map 29 (in Figure 2).

Figure 2: Excerpt of Planning Map 29



The Horowhenua District Plan Index Map notes that:

“1. The roads and railway shown on the Planning Maps are shaded grey and white respectively for ease of reference. Although the roads and railway are shaded grey and white they are all zoned. Roads and the railway share the same zoning as the land nearest to each point of the road or railway. Where the zone is different on either side of the road or railway, the boundary between the zones is the centre line of the road or railway.”

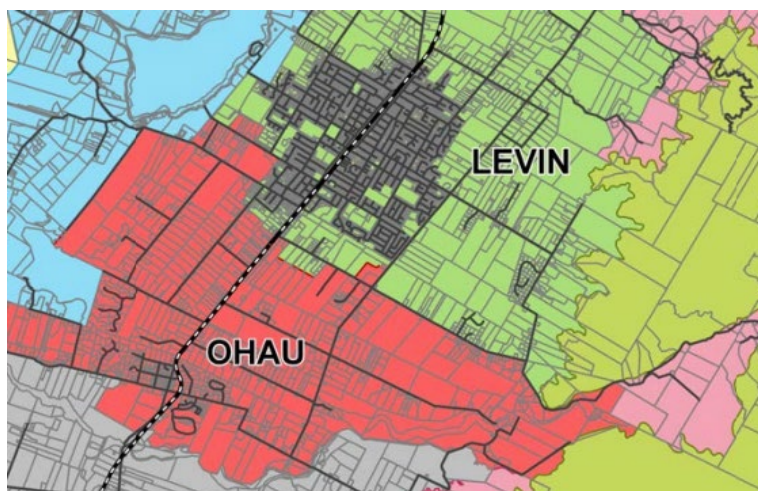
On this basis the proposed new crossing is located predominantly within the Industrial Zone (purple) and likely partially within the Rural Zone (white).

The site is also subject to the following designations set out in Schedule 1 to the District Plan:

1. Designation D1, for ‘Railway Purposes (for which KiwiRail Holdings Limited is the requiring authority).
2. Designation D2, for ‘State Highway 1 - To undertake maintenance, operation and use of, and improvement of a State Highway’ (for which NZ Transport Agency is the requiring authority).

The site is also located in the Levin Koputaroa Landscape Domain and the Levin Ohau Landscape Domain (shown on Planning Map 39 that is included as Figure 3).

Figure 3: Excerpt of Planning Map 39



Horowhenua District Plan - Rules

The District Plan includes a definition of 'network utility'¹. The proposed activity falls within this definition.

Rule 16.1(n)(i) provides for the construction, operation, maintenance and upgrading of network utilities in the Industrial Zone as a permitted activity.

Permitted Activity Condition 16.6.18 requires that:

- (a) *All network utilities and structures associated with network utilities shall comply with the permitted activity conditions in Chapter 22.*
- (b) *All other permitted activity conditions specified in this Chapter of the District Plan shall also apply to any network utility or associated structure."*

Rule 19.1(m)(i) similarly provides for the construction, operation, maintenance and upgrading of network utilities in the Rural Zone as a permitted activity.

Permitted Activity Condition 19.6.24 requires that:

- (a) *All network utilities and structures associated with network utilities shall comply with the permitted activity conditions in Chapter 22.*
- (b) *All other relevant conditions in this part of the District Plan shall also apply to any new network utilities or upgrade of any network utility or associated structures which are not able to meet the permitted activity under Rule 22.1.10."*

Rule 22.1.10 relates to the maintenance, replacement and upgrading of network utilities and therefore the exemption in Condition 19.6.24 is not relevant to the proposed activity.

The following Table 1 sets out the permitted activity conditions in Chapter 22 and the relevant zone related permitted activity conditions along with a commentary in respect of compliance with these conditions.

Table 1: Horowhenua District Plan - Relevant Permitted Activity Conditions

Permitted Activity Condition	Commentary on Compliance
Chapter 22 – Network Utilities	
22.1.1 Gas Pressure	The proposed activity does not include reticulated gas and therefore this Condition is not relevant.
22.1.2 Electricity Voltage	The proposed activity does not include electricity transmission or distribution and therefore this Condition is not relevant.
22.1.3 Radio Frequency Radiation	The proposed activity does not generate radio frequency fields and therefore this Condition is not relevant.
22.1.4 Sites Adjoining the Residential Zone	The site does not adjoin a Residential Zone and therefore this Condition is not relevant.

¹ "Network Utility includes any:

- (a) *aerial or mast or antennae or dish antennae;*
- (b) *tower or pole, including any wind turbine;*
- (c) *pole-mounted street light;*
- (d) *line for telecommunication, cable television, transmission, sub-transmission, or any distribution line for conveying electricity, including associated pole, or ground mounted switch gear;*
- (e) *transformer, substation, compressor station, or pumping station;*
- (f) *water supply or irrigation race, drain, or channel;*
- (g) *pipeline for the distribution or transmission of natural or manufactured gas and any necessary incidental equipment, including compressors and gate stations;*
- (h) *water supply, irrigation supply, drainage and sewerage systems, including pipes that collect, drain, dispose and convey water, stormwater, sewage and/or other wastes;*
- (i) *navigational aid, lighthouse, or beacon;*
- (j) *survey peg or survey monument;*
- (k) *meteorological installation;*
- (l) *telephone booth;*
- (m) *Equipment incidental to the household or commercial or industrial connections to such utilities; and*
- (n) *Roading and railway lines.*

Whether these are for private or public purposes; and includes routine maintenance of these network utilities."

Permitted Activity Condition	Commentary on Compliance	
22.1.5 Undergrounding of Services	<p>“(a) <i>All new electricity, gas (natural and manufactured) and telecommunication supply lines shall be reticulated underground in the Residential, Greenbelt Residential, Commercial and Industrial Zones.</i></p> <p><i>Note: electricity supply lines in this rule do not include high voltage</i></p> <p>...</p> <p>(c) <i>Earthworks associated with installing and maintaining underground reticulated services are permitted activities.”</i></p>	<p>The existing overhead electricity distribution lines located alongside Tararua Road will be undergrounded as part of the proposed activity in a manner consistent with Condition 22.1.5. On this basis, the proposed activity complies with Condition 22.1.5.</p>
22.1.6 Underground Services - Reinstatement	<p>“(a) <i>Where network utilities or associated structures are located underground, the ground surface and any vegetation disturbed in the course of installation shall be repaired or replaced as soon as practicable after installation.”</i></p>	<p>Any works associated with underground network utilities will include the reinstatement of the ground surface (where the surface is not occupied by the proposed new crossing and intersection) and therefore the proposed activity complies with Condition 22.1.6.</p>
22.1.7 Height, Size and Location of Network Utility Buildings	<p>The proposed activity does not include any network utility buildings and therefore this Condition is not relevant.</p>	
22.1.8 Height of Network Utility Masts, Pylons, Towers Aerials and other Structures	<p>“(a) <i>All masts, pylons, towers, support structure, aerials, antennas and other structures associated with network utilities and domestic scale renewable energy device shall not exceed the following maximum height requirements:</i></p> <p>...</p> <p>(iv) <i>25 metres in the Industrial Zone.</i></p> <p>...</p> <p>(v) <i>20 metres in the Rural Zone, other than Rural zoned parts of the Coastal Environment, Coastal Lakes, Manakau Downlands and Hill Country Landscape Domains. ...”</i></p>	<p>All structures associated with the proposed activity do not exceed 20 metres in height and therefore the proposed activity complies with Condition 22.1.8.</p>
22.1.9 Antennas	<p>The proposed activity does not include any dish or panel antennas and therefore this Condition is not relevant.</p>	
22.1.10 Maintenance, Replacement and Upgrading Network Utilities including Generation and Distribution Utilities for Renewable Source of Energy	<p>The proposed activity is a new intersection and level-crossing and therefore this Condition is not relevant.</p>	
Chapter 16 – Industrial Zone		
16.6.1 Maximum Building Height	<p>The proposed activity does not include any buildings and therefore this Condition is not relevant.</p>	
16.6.2 Sites Adjoining Residential Zone, Greenbelt Residential	<p>“(a) <i>Where a site adjoins the Residential Zone, Greenbelt Residential Zone, Open Space</i></p>	<p>While the proposed activity straddles the boundary between the Rural Zone and the Industrial Zone, all structures</p>

Permitted Activity Condition		Commentary on Compliance
Zone, Open Space Zone or Rural Zone	<p><i>Zone or Rural Zone, the following conditions shall apply:</i></p> <ul style="list-style-type: none"> <i>(i) All buildings and structures adjoining either the Residential Zone, Greenbelt Residential Zone, Open Space Zone or Rural Zone shall comply with the daylight setback envelope of the Residential Zone.</i> <i>(ii) All buildings and structures shall be setback 4.5 metres from the Residential Zone boundary, Greenbelt Residential Zone boundary, Open Space Zone boundary or Rural Zone boundary.</i> <i>(iii) All buildings, outdoor carparking, storage, servicing and loading areas shall be screened by a close-boarded fence made of solid material with a minimum height of 1.2 metres and a maximum height of 2 metres."</i> 	<p>associated with the proposed activity are able to be located so that they achieve the setbacks from the site boundary in the Rural Zone. Therefore the proposed activity complies with Condition 16.6.2. The proposed activity does not include buildings, outdoor carparking, storage, servicing and loading areas and therefore clause (iii) is not relevant.</p>
16.6.3 Sites with Frontage to State Highway 1	<ul style="list-style-type: none"> <i>"(a) No building shall be located closer than 10 metres from the State Highway 1 (Oxford Street, or Main Road South, Levin, and Johnston Street and Russell Street, Foxton) road boundary.</i> <i>(b) The area between any building or carpark and the front road boundary shall include a landscaping strip. This landscaping strip shall comply with the following conditions: ..."</i> 	<p>The proposed activity does not include buildings or carparking and therefore this Condition is not relevant.</p>
16.6.4 Signs	<ul style="list-style-type: none"> <i>"(a) All permitted signs shall comply with the following:</i> <i>(i) All signs shall comply with the maximum height, and where adjoining a Residential, Greenbelt Residential or Open Space Zone, the applicable daylight setback for the adjoining Zone shall apply.</i> <i>(ii) All signs attached to buildings shall not exceed the highest point of the roof.</i> <i>(iii) All signs extending over a footpath shall be a minimum of 2.5 metres above the foot path and 450mm setback from the kerb of a road or road boundary. ..."</i> 	<p>The proposed activity includes official signs for traffic safety purposes. Such signs are designed and located to comply with Condition 16.6.4.</p>
16.6.5 Noise	<p><i>" ...</i></p> <ul style="list-style-type: none"> <i>(d) Construction, maintenance and demolition works shall be measured, assessed, managed and controlled in accordance with the provisions of NZS 6803:1999 Acoustics – Construction noise.</i> <i>(e) The noise limits in Rule 16.6.5(a), 16.6.5(b) and 16.6.5(c) shall not apply to the following activities:</i> 	<p>Construction activities will be undertaken in a manner that complies with clause (d). While clause (e) provides an exemption to operational noise standards. As such, the proposed activity complies with Condition 16.6.5.</p>

Permitted Activity Condition		Commentary on Compliance
	<p>...</p> <p>(ii) Construction, maintenance and demolition work.</p> <p>(iii) The operation of the Main North Island Trunk Railway.</p> <p>(iv) Vehicles being driven on a road (within the meaning of Section 2(1) of the Transport Act 1962). ...”</p>	
16.6.6 Vibration	<p>“(a) No activity shall create any vibration which exceeds the limits in the following standards:</p> <p>(i) AS 2670.1-2001 Evaluation of human exposure to whole-body vibration – General requirements.</p> <p>(ii) AS 2670.2-1990 Evaluation of human exposure to whole-body vibration - Continuous and Shock-Induced Vibration in Buildings (1 to 80 Hz).</p> <p>(iii) DIN 4150-3:1999 Effects of vibration on structures.</p> <p>(iv) NZS 4403:1976 Code of Practice for Storage, Handling, and Use of Explosives, and any subsequent amendments.”</p>	The proposed activity will be constructed and operated in a manner that complies with Condition 16.6.6.
16.6.7 Odour	The proposed activity does not give rise to any odour and therefore this Condition is not relevant.	
16.6.8 Light Spill	<p>“(a) The spill of light from any artificial lighting shall not exceed 10 lux (lumens per square metre) onto any site within the Residential Zone. The maximum lux shall be measured horizontally or vertically at the Residential Zone site boundary.”</p>	The proposed activity is located some distance from a Residential Zone and intersection lighting is designed to limit light spill. As such, the proposed activity complies with Condition 16.6.8.
16.6.9 Storage Areas	The proposed activity does not include storage areas and therefore this Condition is not relevant.	
16.6.10 Unsightly Buildings	The proposed activity does include buildings and therefore this Condition is not relevant.	
16.6.11 Water Supply	<p>“(a) All sites shall be provided with a water supply to meet the capacity and quality requirements of the activities undertaken on the site in accordance with Chapter 24.”</p>	The proposed activity does not require a water supply and therefore this Condition is not relevant.
16.6.12 Wastes Disposal	<p>“(a) All wastes (including sewage, effluent, and refuse) that are generated or stored on any site shall be collected, treated, and disposed of in a manner that avoids any significant adverse effects or nuisance for adjoining properties.”</p>	The proposed activity does not give rise to sewage, effluent or refuse and therefore this Condition is not relevant.
16.6.13 Surfacewater Disposal	<p>“(a) All activities shall make provision for the management of stormwater as means of dealing with water quantity and water quality to avoid significant adverse effects or nuisance and shall include bunding sufficient to avoid run-off contaminated with</p>	The proposed activity is designed to provide for the management of stormwater that connects into existing adjacent stormwater systems on SH1 and on Tararua Road as appropriate, and as additional road length is not being created, stormwater runoff will

Permitted Activity Condition		Commentary on Compliance
	<i>hazardous substances, including oil into stormwater drains.”</i>	be managed to same degree as current. Therefore, the proposed activity complies with Condition 16.6.13.
16.6.14 Engineering Works	<i>“(a) All activities, subdivisions and developments shall comply with the permitted activity conditions in Chapter 24.”</i>	As relevant to the proposed activity, the conditions in Chapter 24 are achieved and therefore the proposed activity complies with Condition 16.6.14.
16.6.15 Vehicle Access	<i>“(a) All activities shall be provided with practicable vehicle access from a public road in accordance with the permitted activity conditions in Chapter 21.”</i>	The proposed activity is a public road and as such complies with Condition 16.6.15.
16.6.16 Vehicle Parking, Manoeuvring, and Loading	<i>“(a) All activities shall provide vehicle parking spaces, manoeuvring areas, and loading facilities in accordance with the permitted activity conditions in Chapter 21.”</i>	The proposed activity does not require vehicle parking, manoeuvring areas or loading facilities and therefore this Condition is not relevant in this regard. The design of the level crossing is consistent with the requirements of Chapter 21.
16.6.17 Safety and Visibility at Road and Rail Intersection	<i>“(a) No building or structure shall be erected, no materials shall be placed, or vegetation planted that would obscure the railway level crossing approach sight triangles as detailed in Rule 21.1.11 in Chapter 21.”</i>	As above, the proposed activity is designed to achieve compliance with Condition 16.6.17.
16.6.18 Network Utilities	As set out above	
16.6.19 Hazardous Substances	<i>“(a) All activities using, storing, transporting or disposing of hazardous substances shall comply with the Hazardous Substances Classification parameters for the Industrial Zone in Chapter 23 and shall comply with the permitted activity conditions in that Chapter.”</i>	Any use, storage or transportation of hazardous substances associated with construction works complies with conditions and parameters that apply to the Industrial Zone that are set out in Chapter 23.
16.6.20 Flood Hazard Overlay Area	The proposed activity is not in a Flood Hazard Overlay Area and therefore this Condition is not relevant.	
16.6.21 Notable Trees	The proposed activity is not in the vicinity of notable tree and therefore this Condition is not relevant.	
16.6.22 Sites of significance to Tangata Whenua	The proposed activity is not in the vicinity of a site of significance to Tangata Whenua and therefore this Condition is not relevant.	
16.6.23 Temporary Activities	The proposed activity is not a temporary activity and therefore this Condition is not relevant.	
16.6.24 Temporary Military Training Activities	The proposed activity is not a temporary military training activity and therefore this Condition is not relevant.	
Chapter 19 – Rural Zone		
19.6.1 Number of Residential Dwelling Units and Family Flats	The proposed activity does not include residential dwelling units and therefore this Condition is not relevant.	

Permitted Activity Condition	Commentary on Compliance	
19.6.2 Family Flats Maximum Floor Area	The proposed activity does not include a family flat and therefore this Condition is not relevant.	
19.6.3 Maximum Building Height	The proposed activity does not include any buildings and therefore this Condition is not relevant.	
19.6.4 Daylight Setback Envelope	The proposed activity does not include any buildings and therefore this Condition is not relevant.	
19.6.5 Building Setbacks from Boundaries and Separation Distances	The proposed activity does not include any buildings and therefore this Condition is not relevant.	
19.6.6 Home Occupations	The proposed activity is not a home occupation and therefore this Condition is not relevant.	
19.6.7 Noise Insulation	The proposed activity is not a noise sensitive activity and therefore this Condition is not relevant.	
19.6.8 Noise	<p>“ ...</p> <p>(c) <i>Construction, maintenance and demolition work shall be measured, assessed, managed and controlled in accordance with the provisions of NZS 6803:1999 Acoustics – Construction noise.</i></p> <p>(d) <i>Except the noise limits in Rule 19.6.8 (a) and (b) shall not apply to:</i></p> <p>...</p> <p>(iv) <i>Construction, maintenance and demolition work.</i></p> <p>(v) <i>The operation of the Main North Island Trunk Railway.</i></p> <p>(vi) <i>Vehicles being driven on a road (within the meaning of Section 2(1) of the Transport Act 1962), or within a site as part of, or compatible with, a normal residential activity. ...”</i></p>	Construction activities will be undertaken in a manner that complies with clause (c). While clause (d) provides an exemption to operational noise standards. As such, the proposed activity complies with Condition 19.6.8.
19.6.9 Vibration	<p>“(a) <i>No activity shall create any vibration which exceeds the limits in the following standards:</i></p> <p>(i) <i>AS 2670.1-2001 Evaluation of human exposure to whole-body vibration – General requirements.</i></p> <p>(ii) <i>AS 2670.2-1990 Evaluation of human exposure to whole-body vibration - Continuous and shock-induced vibration in buildings (1 to 80 Hz).</i></p> <p>(iii) <i>DIN 4150-3:1999 Effects of vibration on structures.</i></p> <p>(iv) <i>NZS 4403:1976 – Code of Practice for Storage, Handling and Use of Explosives, and any subsequent amendments.”</i></p>	The proposed activity will be constructed and operated in a manner that complies with Condition 19.6.9.
19.6.10 Odour	The proposed activity does not give rise to any odour and therefore this Condition is not relevant.	
19.6.11 Moutoa Floodway	The proposed activity is not located in the Moutoa Floodway and therefore this Condition is not relevant.	

Permitted Activity Condition	Commentary on Compliance	
19.6.12 Flood Hazard Overlay Area	The proposed activity is not located in a Flood Hazard Overlay Area and therefore this Condition is not relevant.	
19.6.13 Earthworks-Specific Landscape Domains	The site is not located in the landscape domains to which this Condition applies and therefore the Condition is not relevant.	
19.6.14 Sites of Significance to Tangata Whenua	The proposed activity is not located in the vicinity of a site of significance to Tangata Whenua and therefore this Condition is not relevant.	
19.6.15 National Grid Corridor	The proposed activity is not located in the National Grid Corridor and therefore this Condition is not relevant.	
19.6.16 Planting Setbacks for Plantation Forestry and Shelterbelt Planting	The proposed activity is not plantation forestry or shelterbelt planting and therefore this Condition is not relevant.	
19.6.17 Wastes Disposal	<p><i>“(a) All refuse, compost and recyclable materials including scrap metal that are generated or stored on any site shall be collected, treated, and disposed of in a manner that avoids, remedies or mitigates any significant adverse effects or nuisance for:</i></p> <ul style="list-style-type: none"> <i>(i) an adjoining property;</i> <i>(ii) any natural habitat or indigenous species;</i> <i>(iii) any outstanding landscape or natural feature.</i> <p><i>In particular, in accordance with Chapter 24 of this District Plan.</i></p> <p><i>...”</i></p>	All materials at the site are to be managed to comply with Condition 19.6.17.
19.6.18 Water Supply	<p><i>“(a) All activities occurring on any site shall be supplied with sufficient water suitable for consumption by the people and by the livestock associated with the activity/activities and in accordance with Chapter 24.”</i></p>	The proposed activity does not require a water supply and therefore this Condition is not relevant.
19.6.19 Surfacewater Disposal	<p><i>“(a) All activities shall make provision for the management of stormwater as means of dealing with water quantity and water quality to avoid significant adverse effects or nuisance.”</i></p>	The proposed activity is designed to provide for the management of stormwater that connects into existing adjacent stormwater systems on SH1 and on Tararua Road as appropriate, and as additional road length is not being created, stormwater runoff will be managed to same degree as current. Therefore, the proposed activity complies with Condition 19.6.19.
19.6.20 Engineering Works	<p><i>“(a) All activities, subdivision and development shall comply with the permitted activity conditions in Chapter 24.”</i></p>	As relevant to the proposed activity, the conditions in Chapter 24 are achieved and therefore the proposed activity complies with Condition 19.6.20.

Permitted Activity Condition		Commentary on Compliance
19.6.21 Vehicle Access	“(a) All activities shall be provided with practicable vehicle access from a public road in accordance with the permitted activity conditions in Chapter 21.”	The proposed activity is a public road and as such complies with Condition 19.6.21.
19.6.22 Vehicle Parking, Manoeuvring, and Loading	“(a) All activities shall provide onsite vehicle parking spaces, manoeuvring areas, and loading facilities in accordance with the permitted activity conditions in Chapter 21.”	The proposed activity does not require vehicle parking, manoeuvring areas or loading facilities and therefore this Condition is not relevant in this regard. The design of the level crossing is consistent with the requirements of Chapter 21
19.6.23 Safety and Visibility at Road and Rail Intersection	“(a) No building or structure shall be erected, no materials shall be placed, or vegetation planted that would obscure the railway level crossing approach sight triangles as detailed in Rule 21.1.11 in Chapter 21.”	As above, the proposed activity is designed to achieve compliance with Condition 19.6.23.
19.6.24 Network Utilities and Energy	As set out above	
19.6.25 Hazardous Substances	“(a) All activities using or storing hazardous substances shall comply with the Hazardous Substances Classification parameters for the Rural Zone in Table 23.2 in Chapter 23 and shall comply with all relevant permitted activity standards in that Chapter.”	Any use, storage or transportation of hazardous substances associated with construction works complies with conditions and parameters that apply to the Rural Zone that are set out in Chapter 23.
19.6.26 Signs	<p>“(a) All signs shall relate to, or be associated with, services, products or events available or occurring on the site on which the sign is located, except where specifically provided for as a permitted activity including official signs, temporary signs or signs for the sale or auction of land.</p> <p>...</p> <p>(e) All signs shall comply with the height, and where applicable recession plane requirements, but shall not be required to comply with rules relating to setbacks from road boundaries.</p> <p>(f) No sign shall be illuminated.</p> <p>...</p> <p>(h) No sign shall be erected on, or adjacent to, a road which will:</p> <ul style="list-style-type: none"> (i) obstruct the line of sight of any corner, bend, intersection or vehicle crossing; (ii) obstruct, obscure or impair the view of any traffic sign or signal; (iii) physically obstruct or impede traffic or pedestrians; (iv) resemble or be likely to be confused with any traffic sign or signal; (v) use reflective materials that may interfere with a road user’s vision; 	The proposed activity includes official signs for traffic safety purposes. Such signs are designed and located to comply with Condition 19.6.26.

Permitted Activity Condition		Commentary on Compliance
	(vi) use flashing or revolving lights; or (vii) project light onto the road so as to cause a hazard or distraction to users of the road (including pedestrians). (i) The minimum lettering sizes in Table 19-2 below shall apply to all signs located within 15 horizontal metres of a road: ...”	
19.6.27 Notable Trees	The proposed activity is not located in the vicinity of a notable tree and therefore this Condition is not relevant.	
19.6.28 Activities on the Surface of the Water	The proposed activity is not on the surface of the water and therefore this Condition is not relevant.	
19.6.29 Temporary Activities	The proposed activity is not a temporary activity and therefore this Condition is not relevant.	
19.6.30 Temporary Military Training Activities	The proposed activity is not a temporary military training activity and therefore this Condition is not relevant.	
19.6.31 Buildings and development within the Muhunua West Forest Park Overlay	The proposed activity is not located in the Muhunua West Forest Park Overlay and therefore this Condition is not relevant.	
19.6.32 Relocated Buildings	The proposed activity does not include relocated buildings and therefore this Condition is not relevant.	

As set out in Table 1, the proposed activity is able to comply with all of the relevant Permitted Activity Conditions and therefore has status as a permitted activity under Rules 16.1(n)(i) and 19.1(m)(i).

Existing Designations

Where the proposed activity is located within designation D2, the works may also be ‘authorised’ under section 176A of the RMA as follows:

- “(1) Subject to subsection (2), an outline plan of the public work, project, or work to be constructed on designated land must be submitted by the requiring authority to the territorial authority to allow the territorial authority to request changes before construction is commenced.
- (2) An outline plan need not be submitted to the territorial authority if—
 - (a) the proposed public work, project, or work has been otherwise approved under this Act; or
 - (b) the details of the proposed public work, project, or work, as referred to in subsection (3), are incorporated into the designation; or
 - (c) the territorial authority waives the requirement for an outline plan.
- (3) An 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.

- (4) *Within 20 working days after receiving the outline plan, the territorial authority may request the requiring authority to make changes to the outline plan.*
- (5) *If the requiring authority decides not to make the changes requested under subsection (4), the territorial authority may, within 15 working days after being notified of the requiring authority's decision, appeal against the decision to the Environment Court.*
- (6) *In determining any such appeal, the Environment Court must consider whether the changes requested by the territorial authority will give effect to the purpose of this Act.*
- (7) *This section applies, with all necessary modifications, to public works, projects, or works to be constructed on designated land by a territorial authority."*

Where the proposed activity is located within designation D1, written consent from KiwiRail Holdings Limited (being the requiring authority responsible for designation D1) will also be required under section 176(1)(b) of the RMA that applies as follows:

- "(b) No person may, without the prior written consent of that requiring authority, do anything in relation to the land that is subject to the designation that would prevent or hinder a public work or project or work to which the designation relates, including—*
- (i) undertaking any use of the land; and*
 - (ii) subdividing the land; and*
 - (iii) changing the character, intensity, or scale of the use of the land."*

ATTACHMENT 8: PLANNING ASSESSMENT - ESTABLISHMENT WORKS

Purpose

The following sets out an assessment of the likely Resource Management Act 1991 (RMA) approval requirements from Kāpiti Coast District Council and Horowhenua District Council for the establishment works that are required to be undertaken prior to the commencement of construction of the Ōtaki to north of Levin Highway Project (Ō2NL Project or the Project).

Proposed activity

Establishment works are defined in the proposed designation conditions as follows:

“Preliminary activities undertaken in advance of construction activities commencing, including within a particular stage or geographic area, as follows:

- a) *site-wide geotechnical investigations and material reuse testing and earthwork methodology;*
- b) *topographical surveys;*
- c) *ecological, cultural, archaeological and heritage surveys and relocations;*
- d) *baseline monitoring;*
- e) *contaminated land testing;*
- f) *protection of and/or relocation of utilities;*
- g) *formation of site access and haul roads, including temporary stream crossings;*
- h) *formation of construction access tracks and/or reconfiguration of existing of access tracks;*
- i) *development of the construction yard and main site offices;*
- j) *works associated with the abstraction of water needed to construct the Project and associated reservoirs (for storage);*
- k) *property fencing and demarcation of areas where construction activities will not occur;*
- l) *installation of erosion and sediment control measures associated with establishment works;*
- m) *clearance of vegetation associated with establishment works (and clearing buildings and other features); and*
- n) *management plan production.”*

RMA Planning approval requirements – Kāpiti Coast District Council

Kāpiti Coast District Plan – Maps

The Kāpiti Coast District Plan (KCDP) was made operative in 2021. The Project solely traverses land that is in the Rural Production Zone, subject to the Rural Hills Precinct (PREC 24) and the Rural Plains Precinct (PREC 49).

Features in close proximity to the Project are shown on Planning Maps 22 are as follows:

- two ecological sites; and
- Special Amenity Landscape SAL 15 – Pukehou.

Existing State Highway 1 is subject to a designation (NZTA-001) for which Waka Kotahi is the requiring authority.

Kāpiti Coast District Plan – Rules

The following Table 1 sets out the relevant rules that apply to the various activities that are establishment works, including a commentary in respect of compliance with those rules.

Table 1: Kāpiti Coast District Plan – Relevant Rules

Establishment works activity	KCDP rule and activity status	Commentary on compliance
Site-wide geotechnical investigations and material reuse testing and earthwork methodology	The proposed activity falls within the definition of 'land disturbance' ¹ . The KCDP only regulates land disturbance in respect of historic heritage features and waahi tapu and other places and areas significant to Māori. As such, no resource consent is required for the proposed activity.	
Topographical surveys	Not applicable	Does not involve physical works
Ecological, cultural, archaeological and heritage surveys and relocations	Not applicable	Does not involve physical works, except for ecological relocations. Such activities are not regulated by the KCDP and, instead, are addressed by the Wildlife Act 1953.
Baseline monitoring	Not applicable	Does not involve physical works
Contaminated land testing	Contaminated land testing is regulated by the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NES-CS) as described below.	
Protection of and/or relocation of utilities	<p>Rule INF-PNU-R3 provides for the operation, maintenance, repair, replacement or removal of any existing network utility as a permitted activity.</p> <p>Rule INF-PNU-R4 provides for the following as a permitted activity:</p> <p><i>“1. minor upgrading of any electricity and telecommunication line; and</i></p> <p><i>2. the upgrading of all other network utilities, excluding:</i></p> <p><i>a. electricity transmission lines above 110kV; and</i></p> <p><i>b. gas distribution pipelines at a pressure exceeding 2000 kilopascals.”</i></p> <p>The Standards that apply to Rule INF-PNU-R4 are as follows:</p> <p><i>“1. Upgrading must comply with any permitted activity standard applicable to that network utility under Rules INF-PNU-R9 (Antenna attached to building for network utility purposes); and INF-PNU-R10 (cabinets).</i></p> <p><i>2. Poles to support lines for network utility structures must comply with the maximum height of 12 m (above original ground level) and diameter of 300 millimetres.</i></p> <p><i>3. Any additional antenna attached to existing masts must not exceed either the maximum height requirements in INF-PNU-R9 or the maximum height of the existing mast, whichever is greater. The additional antenna must not exceed either the maximum diameter requirements in INF-PNU-R9 or the existing diameter of antenna attached to the mast, whichever is greater.”</i></p>	Works associated with existing network utilities are permitted by Rules INF-PNU-R3 and INF-PNU-R4.

¹ “... means the alteration or disturbance of land (or any matter constituting the land including soil, clay, sand and rock) that does not permanently alter the profile, contour or height of the land.”

Establishment works activity	KCDP rule and activity status	Commentary on compliance
Formation of site access and haul roads, including temporary stream crossings	Rule TR-R3 provides for the formation of site access as a permitted activity subject to the following Standards: <i>"1. Access - every site must provide vehicular access over land or by mutual right of way or service lane for parking and/or loading and shall be in accordance with TR-Diagram - 2.</i>	It is anticipated that site access points can be designed to achieve the Standards in Rule TR-R3.
Formation of construction access tracks and/or reconfiguration of existing of access tracks	<ol style="list-style-type: none"> 2. <i>Access - all vehicle accesses must be designed, constructed and maintained to ensure that:</i> <ol style="list-style-type: none"> a. <i>they are able to be used in all weather conditions;</i> b. <i>they have no adverse impact on the roadside drainage system; and</i> c. <i>surface water and detritus (including gravel and silt) does not migrate onto the highway pavement.</i> 3. <i>Access - all accesses must meet the following:</i> <ol style="list-style-type: none"> a. <i>be a minimum of 3.5 metres wide, except for as set out in TR-Table 1.</i> b. <i>be a maximum of 9 metres wide ...</i> 4. <i>Access - sites containing non-residential activities and which provide more than 6 carparks, shall provide two-way accesses which must be a minimum of 6 metres wide.</i> 5. <i>Access to/from a state highway - sites that only have access via a state highway must only have one crossing point and shall be in accordance with Diagrams TR-Diagram - 1 and TR-Diagram - 2.</i> 6. <i>Access spacing - at intersections (except on strategic arterial routes) carrying traffic volumes of 1,000 vehicles or more in any peak hour, or at which traffic signals are operating, no part of a crossing point must be located within 30 metres of an intersection or within 60 metres on the departure side of an urban state highway intersection.</i> ... 7. <i>Access spacing - Where a site is located near an intersection having volumes less than 1,000 vehicles in any peak hour; the minimum distance between the crossing point and the roadway edge or kerb line must be:</i> <ol style="list-style-type: none"> a. <i>9 metres measured from the intersecting point of the kerb lines or road edge lines or 4.5 metres from the tangent point of the kerb lines or road edge whichever is greater; and</i> b. <i>12 metres where a "Stop" or "Give Way" control exists on the roadway measured from the intersecting point of the kerb lines or road edge lines.</i> 8. <i>Access spacing for major traffic activities - no crossing point must be located closer to any intersection than the distance specified in TR-Table 2 - Access Distance Dimensions. Distances are measured in metres (m) to the intersecting kerb line.</i> 	Where existing access tracks are repaired or reconfigured Rule EW-R3 applies. The relevant standards are achieved, including through the erosion and sediment control measures required by regional resource consents. Rule EW-R2 provides for any earthworks associated with the formation of new access tracks. Given the topography of the 'subject site' it is anticipated that the volume of material that would constitute 'earthworks' would be limited, however it is acknowledged that it is possible that the establishment works may not achieve the permitted activity standards in respect of volume and proximity to waterbodies. In the absence of the proposed designation, such earthworks would require a resource consent for a restricted discretionary activity under Rule EW-R5.

Establishment works activity	KCDP rule and activity status	Commentary on compliance
	<p>9. <i>Access spacing sight distances - the required minimum sight distance between the access and the road must be in accordance with TR-Diagram - 3 and TR-Table 3 - Sight Distance Dimensions} (where m = metres)</i></p> <p>10. <i>Access spacing for state highways - the minimum distance between accesses on the same side of the road must be 7.5 metres for residential activities (excluding visitor accommodation that is not temporary residential rental accommodation) and 15 metres for all other activities.</i></p> <p>11. <i>The minimum separation distances between vehicle access to/from a state highway/rural road and an intersection on that state highway/rural road, between a vehicle access to/from a local road and the intersection of that local road with a state highway/rural road and between vehicle accesses to/from a state highway/rural road must meet the provided distances in TR-Table 4 - Access Distance Dimensions for State Highways and Rural Roads (where m = metres, km/h = kilometres per hour, and vpd = vehicles per day) ..."</i></p> <p>Rule EW-R2 provides for the following as a permitted activity:</p> <p><i>"Earthworks, excluding those listed in EW-R3, in all areas except areas subject to flood hazards, outstanding natural features and landscapes, ecological sites, geological features, areas of outstanding natural character, areas of high natural character."</i></p> <p>The following Standards apply to earthworks permitted by Rule EW-R2:</p> <p><i>"1. Earthworks must not be undertaken:</i></p> <ul style="list-style-type: none"> <i>a. on slopes of more than 28 degrees; or</i> <i>b. within 20 metres of a waterbody, including wetlands and coastal water.</i> <p><i>2. In all other areas except as provided for in Standard 3, earthworks must not:</i></p> <p>...</p> <ul style="list-style-type: none"> <i>b. disturb more than 100m³ (volume) of land per subject site in rural zones within a 5 year period; and</i> <i>c. alter the original ground level by more than 1 metre, measured vertically.</i> <p><i>This standard applies whether in relation to a particular earthwork or as a total of cumulative earthworks within the specified period.</i></p> <p>...</p> <p><i>4. Standards 1 and 2 under this rule do not apply, to:</i></p> <ul style="list-style-type: none"> <i>a. earthworks associated with farm and forestry tracks permitted under GRUZ-R4, RPROZ-R4, RLZ-R4 and FUZ-R4;</i> <i>b. planting trees;</i> <i>c. removing trees;</i> <p>...</p>	

Establishment works activity	KCDP rule and activity status	Commentary on compliance
	<p>g. <i>drilling bores;</i> h. <i>installing and maintaining services such as water pipes and troughs; ...</i></p> <p>5. <i>Any earthworks must ensure that:</i></p> <p>a. <i>Surface runoff from the subject site is isolated from other subject sites and existing infrastructure; and</i></p> <p>b. <i>The potential for silt and sediment to enter the stormwater system or waterbodies in surface runoff from the subject site, is minimised; and</i></p> <p>c. <i>Erosion and sediment control measures are installed and maintained for the duration of the construction period, where necessary.</i></p> <p>6. <i>Accidental Discovery Protocol (HH-Table 1) to be followed for any accidental discovery of a waahi tapu or other cultural site.</i> ...”</p> <p>Rule EW-R3 provides for earthworks associated with the maintenance of accessways as a permitted activity subject to the following Standards:</p> <p>“1. <i>Any earthworks must ensure that:</i></p> <p>a. <i>surface runoff from the subject site is isolated from other subject sites and existing infrastructure; and</i></p> <p>b. <i>the potential for silt and sediment to enter the stormwater system or waterbodies in surface runoff from the subject site, is minimised; and</i></p> <p>c. <i>erosion and sediment control measures are installed and maintained for the duration of the construction period, where necessary.</i></p> <p>2. <i>Archaeological Discovery Protocol to be followed for any accidental discovery of a waahi tapu or other cultural site. ...”</i></p>	
Development of the construction yard and main site offices	<p>Rule RPROZ-R3 provides for buildings and structures as a permitted activity subject to Standards that relate to the height and location of buildings in relation to boundaries.</p> <p>Rule EW-R3 provides for earthworks associated with approved building developments as a permitted activity subject to the Standards set out above.</p>	<p>It is anticipated that the establishment of site offices can be undertaken in a manner that achieves the Standards in Rule RPROZ-R3.</p> <p>If earthworks (as opposed to land disturbance) is required to form the yard, such works are anticipated to be permitted by Rule EW-R3.</p>
Works associated with the abstraction of water	<p>Rule INF-PNU-R5 provides for new network utilities² as a permitted activity when not located within:</p>	<p>To the extent that water abstraction activities fall</p>

² “Network utilities means any service provided by a network utility operator as defined under Section 166 of the Resource Management Act 1991 and includes:

...
4. *the distribution of water for supply including irrigation;*
...or

Establishment works activity	KCDP rule and activity status	Commentary on compliance
needed to construct the Project and associated reservoirs (for storage)	<p>“1. <i>an ecological site;</i> 2. <i>a well-defined fault avoidance area;</i> 3. <i>a well-defined extension fault avoidance area;</i> 4. <i>an open space (conservation and scenic) zone;</i> 5. <i>an outstanding natural features and landscapes;</i> 6. <i>a river corridor;</i> 7. <i>a stream corridor;</i> 8. <i>a ponding area;</i> 9. <i>a shallow surface flow area;</i> 10. <i>an overflow path;</i> 11. <i>a residual overflow path; or</i> 12. <i>a site containing a historic heritage area, building, structure or place identified in Schedules 7, 8 or 9; ...”</i></p> <p>Earthworks for installing and maintaining water pipes are exempt from the volume and location Standards in Rule EW-R2 (by EW-R2(4)).</p> <p>Where earthworks are required for the storage of water, Rule EW-R2 (set out above) that provides for earthworks as a permitted activity, subject to Standards, applies.</p>	<p>within the definition of network utilities (being the distribution of water for supply to the Project), the works are generally permitted by Rule INF-PNU-R5. In some circumstances, the works may be located in the areas listed in Rule INF-PNU-R5. In the absence of the proposed designation, such works would require a resource consent for a restricted discretionary activity under INF-PNU-R13.</p> <p>Where earthworks are required for the storage of water, it is possible that the establishment works may not achieve the permitted activity standards in respect of earthwork volumes and proximity to waterbodies. In the absence of the proposed designation, such earthworks would require a resource consent for a restricted discretionary activity under Rule EW-R5.</p>
Property fencing and demarcation of areas where construction activities will not occur	<p>The KCDP does not include any general rules that relate to fencing. Rule RPROZ-R1 provides for any activity that is not otherwise specified as a permitted, controlled, restricted discretionary, discretionary or non-complying activity in this chapter as a permitted activity.</p>	<p>Fencing activities are permitted by Rule RPROZ-R1.</p>
Installation of erosion and sediment control measures associated with establishment works.	<p>See above, the Standards that apply to Rules EW-R2 and EW-R3.</p>	<p>The installation of erosion and sediment control measures is a requirement of the Standards that apply to Rules EW-R2 and EW-R3, as such it is considered that these activities are ancillary to earthworks permitted by these rules.</p>
Clearance of vegetation associated with establishment works (and clearing buildings and other features)	<p>The KCDP does not include rules that regulate the clearance of vegetation generally.</p> <p>Rule ECO-R4 provides for the trimming or modification of indigenous vegetation in the Rural Production Zone as a permitted activity subject to the following Standard:</p> <p>“1. <i>Trimming or modification of indigenous vegetation must not be carried out on any indigenous vegetation that:</i> a. <i>is within an ecological site (Schedule 1);</i></p>	<p>The clearance of non-indigenous vegetation is not regulated by the KCDP.</p> <p>Indigenous vegetation clearance as part of enabling works can be undertaken to comply with the relevant Standard in Rule ECO-R4.</p>

9. *undertaking a project or work described as a “network utility operation” by regulations made under the Resource Management Act 1991; ...”*

Establishment works activity	KCDP rule and activity status	Commentary on compliance
	<p><i>b. is a rare and threatened vegetation species (Schedule 3);</i></p> <p><i>c. is listed in the schedule of key indigenous tree species (ECO-Table 1) and exceeds either of the maximum size criteria (diameter or height) (excluding planted vegetation) except that ECO-Table 1 shall not apply to indigenous vegetation in the Rural Hills Precinct; or</i></p> <p><i>d. forms a contiguous areas of more than 100m² (excluding planted vegetation); except that this contiguous area provision of more than 100m² of indigenous vegetation shall not apply within the Rural Hills Precinct; or</i></p> <p><i>e. is within 20 metres of a waterbody (including within the waterbody itself) or the coastal marine area excluding planted vegetation) except where required to restore or maintain river crossing structures or culverts to a maximum track width of 10 metres.”</i></p>	
Management plan production	Not applicable	Does not involve physical works.

RMA Planning approval requirements – Horowhenua District Council

Horowhenua District Plan – Maps

The Horowhenua District Plan (HDP) was made operative in 2015. The proposed Ō2NL Project designation is primarily over land that is zoned ‘Rural’ in the HDP. Much of the rural land within the designation (particularly to the north) is also subject to a ‘Versatile Land (LUC Class I & II Soil)’ notation. At locations where the Project traverses streams and rivers, the HDP includes a ‘Flood Hazard Area’ notation.

Landscape Domains traversed by the Project are:

- Levin Koputaroa Domain
- Levin Ohau Domain
- Kuku Domain
- Manakau Downlands Domain
- Hill Country Domain

The following existing designations are also relevant to the Ō2NL Project:

- the North Island Main Trunk Rail Line (NIMT) shown as designation D1 with KiwiRail Holdings Limited being the requiring authority responsible for the designation (Planning Maps 7, 25 and 29);
- existing SH1 shown as designation D2 with Waka Kotahi being the requiring authority responsible for the designation (Planning Maps 7, 10, 25, 28, 29 and 37);
- existing SH57 shown as designation D4 with Waka Kotahi being the requiring authority responsible for the designation (Planning Maps 7, 8, 28, 30 and 32).

The Project traverses land that is zoned ‘Greenbelt Residential Deferred’ in the operative District Plan. This area is subject to Structure Plan 13 ‘Gladstone Greenbelt Levin - Queen Street/Tararua Road’. Proposed Plan Change 4 to the HDP seeks to amend Planning Map 30 to apply a ‘Residential Zone’ over the Tara-Ika Growth Area and replaces Structure Plan 13. PC4 is now subject to various appeals that are being considered by the Environment Court.

Horowhenua District Plan - Rules

The following Table 2 sets out the relevant rules that apply to the various activities that are establishment works, including a commentary in respect of compliance with those rules. This assessment is in respect of the rules that apply to the Rural Zone.

Table 1: Horowhenua District Plan – Relevant Rules

Establishment works activity	HDP rule and activity status	Commentary on compliance
Site-wide geotechnical investigations and material reuse testing and earthwork methodology	The proposed activity does not fall within the definition of ‘earthworks’ ³ in the HDP. The HDP does not regulate such investigations. As such, no resource consent is required for the proposed activity.	
Topographical surveys	Not applicable	Does not involve physical works
Ecological, cultural, archaeological and heritage surveys and relocations	Not applicable	Does not involve physical works, except for ecological relocations. Such activities are not regulated by the HDP and, instead, are addressed by the Wildlife Act 1953.
Baseline monitoring	Not applicable	Does not involve physical works
Contaminated land testing	Contaminated land testing is regulated by the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NES-CS) as described below.	
Protection of and/or relocation of utilities	Rule 19.1(m)(i) provides for the construction, operation, maintenance and minor upgrading of network utilities ⁴ as a permitted activity in the Rural Zone. Permitted Activity Condition 19.6.24 requires that: <i>“(a) All network utilities and structures associated with network utilities shall comply with the permitted activity conditions in Chapter 22.</i>	Works associated with existing network utilities are permitted by Rule 19.1(m)(i) on the basis that the works are consistent with Rule 22.1.10 and therefore other Permitted Activity Conditions do not apply.

³ “Earthworks means any alteration to the existing natural ground level including re-shaping, re-contouring, excavation, backfilling, compaction, stripping of vegetation and top soil and depositing or removal of clean fill. In particular, earthworks does not include:

- (a) Aggregate Extraction;
- (b) activities such as cultivation and harvesting of crops, planting trees, removal of trees and horticultural root ripping, where these activities do not reshape or recontour the land;
- (c) digging post holes;
- (d) drilling bores, digging of pits, and burials of dead stock and plant waste and installation of services except for the application of Rules 18.6.32(b) and 19.6.14(b) National Grid Corridor.”

⁴ “Network Utility includes any:

- (a) aerial or mast or antennae or dish antennae;
- (b) tower or pole, including any wind turbine;
- (c) pole-mounted street light;
- (d) line for telecommunication, cable television, transmission, sub-transmission, or any distribution line for conveying electricity, including associated pole, or ground mounted switch gear;
- (e) transformer, substation, compressor station, or pumping station;
- (f) water supply or irrigation race, drain, or channel;
- (g) pipeline for the distribution or transmission of natural or manufactured gas and any necessary incidental equipment, including compressors and gate stations;
- (h) water supply, irrigation supply, drainage and sewerage systems, including pipes that collect, drain, dispose and convey water, stormwater, sewage and/or other wastes;
- (i) navigational aid, lighthouse, or beacon;
- (j) survey peg or survey monument;
- (k) meteorological installation;
- (l) telephone booth;
- (m) Equipment incidental to the household or commercial or industrial connections to such utilities; and
- (n) Roading and railway lines.

Whether these are for private or public purposes; and includes routine maintenance of these network utilities.”

Establishment works activity	HDP rule and activity status	Commentary on compliance
	<p>(b) <i>All other relevant conditions in this part of the District Plan shall also apply to any new network utilities or upgrade of any network utility or associated structures which are not able to meet the permitted activity under Rule 22.1.10.</i></p> <p>Rule 22.1.10 provides for the maintenance and replacement of the following utilities as a permitted activity:</p> <p><i>(i) Existing transformers and lines above ground for conveying electricity at all voltages and capacities.</i></p> <p><i>(ii) Existing telecommunication lines.</i></p> <p><i>(iii) Existing telecommunication and radiocommunication facilities.</i></p> <p><i>(iv) Existing buildings and depots.</i></p> <p><i>(v) Existing weather radar.</i></p> <p><i>(vi) Existing river protection works.</i></p> <p><i>(vii) Existing gas transmission and distribution facilities.</i></p> <p><i>(viii) Council network utilities.</i></p> <p>Rule 22.1.10 includes the following notes:</p> <p><i>“For the purpose of this rule, the term “maintenance and replacement” shall mean any work or activity necessary to continue the operation and/or functioning of an existing utility and shall also provide for the replacement of an existing line, telecommunication line, building, structure or other facility with another of the same or similar height, size or scale, within the same or similar position and for the same or similar purpose; and the addition of extra lines to existing poles or other support structures; and the replacement of existing conductors.”</i></p> <p><i>“The activities permitted by this Condition are not required to comply with the other conditions in Chapter 22.”</i></p>	
Formation of site access and haul roads, including temporary stream crossings	Rule 19.1(m)(i) (set out above) provides for construction, operation, maintenance and minor upgrading of network utilities (including roading for private purposes) as a permitted activity in the Rural Zone.	Roading for private purposes falls within the definition of network utilities. As such the formation of access tracks and haul roads for the
Formation of construction access tracks and/or reconfiguration of existing of access tracks	<p>As set out above, where works are not the maintenance and replacement of existing network utilities, the Permitted Activity Conditions in Chapters 19 and 22 apply. These Conditions relate to the following:</p> <p><u>Chapter 19</u></p> <ul style="list-style-type: none"> • 19.6.1 Number of Residential Dwelling Units and Family Flats • 19.6.2 Family Flats Maximum Floor Area • 19.6.3 Maximum Building Height • 19.6.4 Daylight Setback Envelope • 19.6.5 Building Setbacks from Boundaries and Separation Distances • 19.6.6 Home Occupations • 19.6.7 Noise Insulation • 19.6.8 Noise • 19.6.9 Vibration • 19.6.10 Odour • 19.6.11 Moutoa Floodway 	<p>Project can be considered network utilities.</p> <p>The majority of Permitted Activity Conditions are not relevant to the formation of access, access tracks and haul road. Those that have the potential to be relevant are as follows:</p> <p>- Flood Hazard Overlay: Condition 19.6.12 sets a volume limit for earthworks, however, the limit does not apply to tracks where the existing ground level is not altered by greater than 0.1</p>

Establishment works activity	HDP rule and activity status	Commentary on compliance
	<ul style="list-style-type: none"> • 19.6.12 Flood Hazard Overlay Area • 19.6.13 Earthworks-Specific Landscape Domains • 19.6.14 Sites of Significance to Tangata Whenua • 19.6.15 National Grid Corridor • 19.6.16 Planting Setbacks for Plantation Forestry and Shelterbelt Planting • 19.6.17 Wastes Disposal • 19.6.18 Water Supply • 19.6.19 Surfacewater Disposal • 19.6.20 Engineering Works • 19.6.21 Vehicle Access • 19.6.22 Vehicle Parking, Manoeuvring, and Loading • 19.6.23 Safety and Visibility at Road and Rail Intersection • 19.6.24 Network Utilities and Energy • 19.6.25 Hazardous Substances • 19.6.26 Signs • 19.6.27 Notable Trees • 19.6.28 Activities on the Surface of the Water • 19.6.29 Temporary Activities • 19.6.30 Temporary Military Training Activities • 19.6.31 Buildings and development within the Muhunua West Forest Park Overlay • 19.6.32 Relocated Buildings. <p><u>Chapter 22</u></p> <ul style="list-style-type: none"> • 22.1.1 Gas Pressure • 22.1.2 Electricity Voltage • 22.1.3 Radio Frequency Radiation • 22.1.4 Sites Adjoining the Residential Zone • 22.1.5 Undergrounding of Services • 22.1.6 Underground Services - Reinstatement • 22.1.7 Height, Size and Location of Network Utility Buildings • 22.1.8 Height of Network Utility Masts, Pylons, Towers Aerials and other Structures • 22.1.9 Antennas • 22.1.10 Maintenance, Replacement and Upgrading Network Utilities including Generation and Distribution Utilities for Renewable Source of Energy. <p>Rule 19.3.3 provides for any permitted activity within a Flood Hazard Overlay Area (excluding Moutoa Floodway) that does not comply with the permitted activity standards in Rule 19.6.12 as a restricted discretionary activity.</p>	<p>metres in any 12 month period.</p> <p>- Earthworks – Specific Landscape Domains: Condition 19.6.13 includes a 3 metre cut and fill depth standards for the Hill Country Landscape Domain.</p> <p>- Surfacewater Disposal – Condition 19.6.19 requires that stormwater be managed to avoid effects.</p> <p>- Vehicle Access and Engineering Works – Conditions 19.6.20 and 19.6.21 set the design and construction standard for such works.</p> <p>The formation of access, access tracks and haul roads can comply with the relevant Conditions and therefore has status as a permitted activity. Where located in the Flood Hazard Overlay, the topography of the area limits the situations where Condition 19.6.12 cannot be achieved. In such situations, in the absence of the proposed designation, an access track would require a resource consent for a restricted discretionary activity under Rule 19.3.3.</p>
Development of the construction yard and main site offices	<p>Rule 19.1(m)(i) (set out above) provides for construction, operation, maintenance and minor upgrading of network utilities as a permitted activity in the Rural Zone. As set out above, the Permitted Activity Conditions in Chapters 19 and 22 apply.</p> <p>Further, Rule 19.1(t) provides or temporary activities⁵ as a permitted activity in the Rural Zone. Permitted Activity</p>	<p>Construction yards and site offices may be considered either a network utility (including network utility buildings) or temporary activities. As such, the proposed activity is a permitted activity, subject to</p>

⁵ “Temporary Activity means any short term activity and any buildings and structures associated with that activity and includes, but is not limited to ...”

Establishment works activity	HDP rule and activity status	Commentary on compliance
	<p>Condition 19.6.29 establishes that the maximum building heights do not apply to temporary activities.</p> <p>Rule 19.2(d) provides for the placement of any non-residential relocated building and/or relocated accessory building over 40m² in gross floor area on any site as a controlled activity.</p>	<p>the relevant Permitted Activity Conditions.</p> <p>It is anticipated that the establishment of site offices can be undertaken in a manner that complies with the relevant Permitted Activity Conditions, including in respect to the bulk and location of building and achieving the construction/formation standards for the yard (including the management of stormwater). Should any relocated building exceed the maximum area in Condition 19.6.32, in the absence of the proposed designation, resource consent would be required for a controlled activity under Rule 19.2(d).</p>
<p>Works associated with the abstraction of water needed to construct the Project and associated reservoirs (for storage)</p>	<p>Rule 19.1(m)(i) provides for construction, operation, maintenance and minor upgrading of network utilities as a permitted activity in the Rural Zone. As set out above, the Permitted Activity Conditions in Chapters 19 and 22 apply.</p> <p>Rule 19.3.3 provides for any permitted activity within a Flood Hazard Overlay Area (excluding Moutoa Floodway) that does not comply with the permitted activity standards in Rule 19.6.12 as a restricted discretionary activity.</p>	<p>The works associated with the abstraction of water can comply with the relevant Permitted Activity Conditions and therefore has status as a permitted activity. That said, should any significant earthworks be undertaken in the Flood Hazard Overlay Condition 19.6.12 may not be achieved. In such situations, in the absence of the proposed designation, works associated with the abstraction of water would require a resource consent for a restricted discretionary activity under Rule 19.3.3.</p>
<p>Property fencing and demarcation of areas where construction activities will not occur</p>	<p>The HDP does not include any general rules that relate to fencing. As such, no resource consent is required for fencing activities.</p>	
<p>Installation of erosion and sediment control measures associated with establishment works.</p>	<p>See above, Permitted Activity Condition 19.6.19 Surfacewater Disposal requires the following:</p> <p><i>“(a) All activities shall make provision for the management of stormwater as means of dealing with water quantity and water quality to avoid significant adverse effects or nuisance.”</i></p>	<p>The installation of erosion and sediment control measures is proposed as part of a suite of measures and results in all works, including establishment works, achieving compliance with Permitted Activity Condition 19.6.19.</p>

Establishment works activity	HDP rule and activity status	Commentary on compliance
Clearance of vegetation associated with establishment works (and clearing buildings and other features)	The HDP does not include rules that regulate the clearance of vegetation, buildings, structures or features for new activities, however Rule 22.1.10 provides for the trimming and felling of trees (where not notable trees) and the removal of vegetation for the maintenance, replacement and upgrading of network utilities.	The clearance of vegetation and the removal of buildings, structure or features is not regulated by the HDP. As such, no resource consent is required for such activities.
Management plan production	Not applicable	Does not involve physical works.

Other RMA Planning Approval Requirements

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

Regulation 8(2) of the NES-CS provides for sampling soil as a permitted activity as follows:

- “(2) *Sampling the soil of the piece of land is a permitted activity while the following requirements are met:*
- (a) *controls to minimise the exposure of humans to mobilised contaminants must—*
 - (i) *be in place when the activity begins;*
 - (ii) *be effective while the activity is done;*
 - (iii) *be effective until the soil is reinstated to an erosion-resistant state;*
 - (b) *the soil must be reinstated to an erosion-resistant state within 1 month after the end of the course of sampling for which the activity was done;*
 - (c) *soil must not be taken away in the course of the activity except as samples taken for the purpose of laboratory analysis;*
 - (d) *the integrity of a structure designed to contain contaminated soil or other contaminated materials must not be compromised.”*

Existing designations

Where the proposed activity is located within existing designations for which Waka Kotahi is the requiring authority, it is considered that the establishment works are consistent with the purpose of these existing designations and, as such, the works may also be ‘authorised’ under section 176A of the RMA as follows:

- “(1) *Subject to subsection (2), an outline plan of the public work, project, or work to be constructed on designated land must be submitted by the requiring authority to the territorial authority to allow the territorial authority to request changes before construction is commenced.*
- (2) *An outline plan need not be submitted to the territorial authority if—*
- (a) *the proposed public work, project, or work has been otherwise approved under this Act; or*
 - (b) *the details of the proposed public work, project, or work, as referred to in subsection (3), are incorporated into the designation; or*
 - (c) *the territorial authority waives the requirement for an outline plan.*
- (3) *An 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.*
- (4) *Within 20 working days after receiving the outline plan, the territorial authority may request the requiring authority to make changes to the outline plan.*
 - (5) *If the requiring authority decides not to make the changes requested under subsection (4), the territorial authority may, within 15 working days after being notified of the requiring authority's decision, appeal against the decision to the Environment Court.*
 - (6) *In determining any such appeal, the Environment Court must consider whether the changes requested by the territorial authority will give effect to the purpose of this Act.*
 - (7) *This section applies, with all necessary modifications, to public works, projects, or works to be constructed on designated land by a territorial authority."*

In respect of the proposed establishment works Waka Kotahi does not consider that an outline plan is necessary (in accordance with section 176A(2) of the RMA) and as such seeks that the requirement for an outline plan be waived.

Where the proposed activity is located within a designation for which KiwiRail Holdings Limited is the requiring authority responsible, written consent will also be required under section 176(1)(b) of the RMA that applies as follows:

- "(b) No person may, without the prior written consent of that requiring authority, do anything in relation to the land that is subject to the designation that would prevent or hinder a public work or project or work to which the designation relates, including—*
- (i) undertaking any use of the land; and*
 - (ii) subdividing the land; and*
 - (iii) changing the character, intensity, or scale of the use of the land."*

APPENDIX 16

FULL LIST OF SUBMITTERS

Submission #	Submitter Name	Horizons	GWRC	HDC	KCDC	Heard / Not Heard
		Support / Oppose	Support / Oppose	Support / Oppose	Support / Oppose	
1	Nestbox NZ Ltd (Ben Summers)	Oppose	Not Specified	Oppose	Not Specified	Heard
2	Sjaan Henry	Oppose	Not Specified	Not Specified	Not Specified	Not Specified
3	Neil & Sheryl White	Support	Not Specified	Support	Not Specified	Not Heard
4	Heritage New Zealand Pouhere Taonga	Support	Not Specified	Not Specified	Not Specified	Heard
5	Robert Woodhouse Bevin Smith	Oppose	Not Specified	Not Specified	Not Specified	Not Heard
6	Horowhenua Equestrian Advocacy Group - Richard Schimpf	Oppose	Oppose	Oppose	Oppose	Heard
7	Bill Hunt - Ratanui Farm Ltd	Not Specified	Not Specified	Not Specified	Not Specified	Not Specified
8	Wendy McAlister-Miles and Dion Miles	Oppose	Oppose	Oppose	Oppose	Not Specified
9	Helen Naylor	Support	Support	Support	Support	Not Heard
10	Gary Williams - Waterscape	Support	Support	Support	Support	Heard
11	Adam & Joanne McCallum	Oppose	Not Specified	Not Specified	Not Specified	Not Heard
12	Josien Reinalda	Oppose	Oppose	Oppose	Oppose	Not Specified
13	Central Economic Development Agency Ltd (CEDA)	Neutral	Neutral	Support	Support	Heard
14	Beth Reille	Oppose	Oppose	Oppose	Oppose	Not Heard
15	Ia Ara Aotearoa Transporting NZ Incorporated	Support	Support	Support	Support	Heard
16	Wayne Grattan	Support	Support	Support	Support	Heard
17	Lesley Grant	Neutral	Neutral	Oppose	Not Specified	Not Heard
18	Palmerston North City Council	Neutral	Neutral	Support	Support	Heard

Submission #	Submitter Name	Horizons	GWRC	HDC	KCDC	Heard / Not Heard
		Support / Oppose	Support / Oppose	Support / Oppose	Support / Oppose	
19	The Horowhenua Company Ltd (thcl)	Support	Support	Support	Support	Not Specified
20	Louise Miles	Oppose	Not Specified	Oppose	Oppose	Not Specified
21	Ross Wallis on behalf of Christine Wallis	Oppose	Oppose	Oppose	Oppose	Heard
22	Glenys Anderson	Oppose	Oppose	Oppose	Oppose	Heard
23	Stephen and Miriam Main	Neutral	Neutral	Neutral	Neutral	Heard
24	Anita Lenaghan	Not Specified	Not Specified	Not Specified	Not Specified	Not Specified
25	Maria Storey	Not Specified	Not Specified	Not Specified	Not Specified	Not Specified
26	Kelly Henry	Oppose	Oppose	Oppose	Not Specified	Not Specified
27	Maggie Braddock	Oppose	Oppose	Oppose	Oppose	Not Specified
28	Antony & Nancy Young	Support	Support	Support	Support	Not Specified
29	Martyn Vause	Oppose	Not Specified	Oppose	Not Specified	Not Heard
30	Roger Paron	Support	Not Specified	Support	Not Specified	Not Specified
31	Sharon Walker	Oppose	Oppose	Oppose	Oppose	Not Heard
32	Ruth Halliday on behalf of Kapiti Equestrian Advocacy Group	Oppose	Oppose	Oppose	Oppose	Heard
33	HRC - Transport Team - Mark Read	Support	Support	Support	Support	Not Heard
34	Spark New Zealand Trading Limited (Spark) and Connexa Limited (Connexa)	Neutral	Neutral	Oppose	Oppose	Heard
35	Horowhenua New Zealand Trust	Support	Support	Support	Support	Not Specified
36	Dakin & Ally Bramwell	Neutral	Neutral	Neutral	Not Specified	Not Specified
37	Lynette Bailey	Support	Support	Support	Support	Not Specified
38	Lynne Moore	Oppose	Oppose	Oppose	Oppose	Not Specified
39	Anita Jones	Oppose	Oppose	Oppose	Oppose	Not Specified
40	RM Murray-Apatu & M Apatu	Neutral	Neutral	Neutral	Neutral	Heard
41	John and Jenny Brown	Neutral	Neutral	Neutral	Neutral	Heard
42	Jacqui Lane	Oppose	Not Specified	Not Specified	Not Specified	Heard

Submission #	Submitter Name	Horizons	GWRC	HDC	KCDC	Heard / Not Heard
		Support / Oppose	Support / Oppose	Support / Oppose	Support / Oppose	
43	Michael Braddock	Oppose	Oppose	Oppose	Oppose	Not Heard
44	shelly Warwick	Oppose	Oppose	Oppose	Oppose	Heard
45	Public Health Services, Midcentral, Te Whatu Ora	Support	Support	Support	Support	Heard
46	Lynda Andrews	Oppose	Oppose	Not Specified	Oppose	Not Specified
47	Janice Jakeman	Neutral	Neutral	Not Specified	Neutral	Not Heard
48	Kevin Daly	Support	Support	Not Specified	Support	Heard
49	Karen and Stephen Prouse	Oppose	Not Specified	Oppose	Not Specified	Heard
50	Cher McCartney	Oppose	Oppose	Oppose	Not Specified	Heard
51	Rebecca Wilson	Oppose	Oppose	Oppose	Oppose	Not Heard
52	Roger Mcleay	Support	Support	Support	Support	Not Specified
53	Lindsay Poutama	Support	Support	Support	Support	Heard
54	Craig Nash	Neutral	Neutral	Support	Support	Not Heard
55	Nicola Robinson	Not Specified	Not Specified	Not Specified	Not Specified	Heard
56	Merie Cannon and Trevor Guy	Neutral	Oppose	Neutral	Oppose	Not Specified
57	EJ Christiansen	Support	Support	Support	Support	Not Specified
58	Alan Jamison	Oppose	Oppose	Not Specified	Not Specified	Heard
59	Fish and Game (Ami Coughlan)	Oppose	Oppose	Oppose	Oppose	Heard
60	Carl and Emma Chalmers	Neutral	Neutral	Neutral	Neutral	Not Heard
61	Bronwen Holman	Oppose	Not Specified	Not Specified	Not Specified	Not Heard
62	Royal Forest and Bird Protection Society Inc	Neutral	Neutral	Neutral	Neutral	Not Specified
63	Te Ao Turoa Environmental Centre, Rangitane o Manawatu	Neutral	Neutral	Neutral	Neutral	Heard
64	Adrian Gregory	Support	Support	Not Specified	Not Specified	Heard
65	Sarah De Geest	Oppose	Oppose	Not Specified	Oppose	Not Heard
66	John Bent	Oppose	Oppose	Oppose	Oppose	Heard
67	Mayor Wanden (HDC)	Support	Support	Support	Support	Heard
68	Alauta and Frederick Paul van Iddekinge	Oppose	Oppose	Not Specified	Not Specified	Heard

Submission #	Submitter Name	Horizons	GWRC	HDC	KCDC	Heard / Not Heard
		Support / Oppose	Support / Oppose	Support / Oppose	Support / Oppose	
69	Jan Windleburns	Oppose	Neutral	Oppose	Neutral	Heard
70	Sam Hadley-Jones (Electra Limite)	Support	Support	Support	Support	Not Heard
71	sarah Hodge	Oppose	Oppose	Oppose	Not Specified	Heard
72	James Mcdonnell Limited	Neutral	Neutral	Neutral	Neutral	Heard
73	KiwiRail Holdings Limited (Michelle Grinlinton-Hancock)	Support	Support	Support	Support	Heard
74	Muaupoko Tribal Authority	Not Specified	Not Specified	Not Specified	Not Specified	Heard
75	Chris Corke	Neutral	Neutral	Neutral	Neutral	Not Heard
76	NZ Heavy Haulage Association (Jonathan Bhana-Thomson)	Support	Support	Support	Support	Not Heard
77	KaingaOra - Homes and Communitues	Oppose	Oppose	Oppose	Oppose	Heard
78	NZ Automobile Association (Garry Goodman)	Support	Support	Support	Support	Not Heard
79	Simon Austin	Oppose	Oppose	Oppose	Oppose	Not Heard
80	The Collective Hapu of Ngati Raukawa ki te Tonga (10 Hapu)	Support	Support	Support	Support	Heard
81	Ngāti Kapumanawawhiti	Support	Support	Support	Support	Heard
83	Ngāti Huia ki Poroutawhao	Support	Support	Support	Support	Heard
84	Ngāti Huia ki Mātau	Support	Support	Support	Support	Heard
85	Ngāti Kikopiri	Support	Support	Support	Support	Heard
86	Ngāti Ngarongo	Support	Support	Support	Support	Heard
87	Ngāti Pareraukawa	Support	Support	Support	Support	Heard
88	Ngāti Takihiku	Support	Support	Support	Support	Heard
89	Ngāti Tukorehe	Support	Support	Support	Support	Heard
90	Ngāti Wehiwehi	Support	Support	Support	Support	Heard

APPENDIX 17

SUMMARY OF SUBMISSIONS

Topic	See submission numbers	No. Subs on this topic
Cultural/ Tangata Whenua	24, 44, 49, 51, 55, 63, 65, 67, 74, 80-90	19
Archeological / SOS	4, 49, 74	3
Air quality/ dust	1, 2, 8, 9, 10, 11, 22, 23, 25, 29, 36, 40, 47, 48, 49, 52, 60, 66, 70, 73	20
Noise and light	1, 2, 3, 8, 9, 10, 11, 20, 22, 23, 25, 29, 36, 40, 47, 48, 49, 53, 60, 68, 71, 72, 77, 79	24
Construction Effects	1, 8, 9, 10, 11, 12, 16, 22, 23, 25, 29, 36, 40, 47, 49, 56, 71, 73, 77	19
Erosion, Sediment, Earthworks	36, 59, 60, 73	4
Outstanding Landscape	74	1
Natural Character	20, 41, 47, 49, 62, 67	6
Offsetting/ compensation	12, 15, 36, 52, 53, 59, 62, 67	8
Terrestrial Ecology	1, 8, 11, 20, 22, 24, 25, 29, 32, 40, 41, 44, 48, 49, 51, 55, 62, 71,	18
Freshwater Ecology	20, 45, 59, 62	4
Stormwater / Drainage	2, 3, 9, 10, 11, 20, 22, 23, 29, 36, 40, 41, 45, 47, 49, 50, 52, 56, 57, 59, 60, 66, 68, 72, 73, 75, 79	27
Discharge from contaminated land	41, 49, 66, 75	4
Water quality inc wetlands	15, 59, 62	3
Water quality	41, 59	2
Water take effects	56, 71	2
NOR	13, 18, 25, 33, 34, 50, 54, 56	8
Statutory	12, 63, 66, 74	4
Consultation	1, 8, 9, 10, 19, 21, 22, 25, 32, 34, 40, 56, 59, 60, 63, 64, 74, 78, 80-90	28
Social	20, 23, 26, 27, 35, 37, 43, 49, 70	9
Connectivity	1, 8, 10, 13, 17, 18, 19, 26, 33, 34, 37, 48, 53, 58, 64, 69, 70, 78	18
Urban Design	69, 70	2
Economic	1, 10, 13, 15, 16, 18, 19, 20, 23, 24, 28, 31, 32, 33, 35, 37, 38, 39,	32

Topic	See submission numbers	No. Subs on this topic
	40, 42, 43, 44, 46, 51, 52, 55, 56, 57, 60, 64, 70, 71	
Productive Land	7, 8, 67, 71, 75	5
Visual	1, 20, 22, 23, 47, 48, 49, 71, 77	9
Landscape	49	1
Contaminated Land	49, 50, 75	3
Natural Hazards / Flooding	2, 3, 9, 10, 11, 20, 22, 23, 29, 36, 40, 41, 45, 47, 49, 50, 52, 57, 59, 60, 66, 68, 71, 72, 73, 75, 79	27
Solutions / Suggestions	2, 3, 5, 6, 8, 9, 11, 12, 14, 16, 20, 22, 23, 24, 26, 27, 29, 31, 32, 33, 34, 36, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 55, 57, 58, 59, 60, 61, 62, 63, 65, 68, 69, 71, 72, 74, 77, 79, 80-90	62
Other	1, 8, 12, 16, 21, 22, 24, 32, 33, 35, 37, 38, 40, 42, 43, 44, 46, 48, 49, 51, 52, 53, 55, 56, 57, 59, 60, 62, 63, 65, 72, 73, 74, 77, 80-90	44
Route location/ necessity (economic)	7, 11, 13, 15, 17, 30, 34, 52, 57, 58, 69, 70, 71, 72	14
Shared path	6, 12, 14, 24, 26, 27, 31, 32, 33, 38, 39, 42, 43, 44, 46, 48, 51, 55, 58, 60, 61, 65, 72,	23
Traffic/ design/ safety	9, 11, 12, 15, 23, 24, 27, 30, 31, 32, 33, 35, 36, 37, 38, 42, 43, 44, 45, 46, 47, 51, 52, 53, 55, 57, 61, 65, 67, 68, 69, 70, 76, 77, 78, 79	36
Recreation/ access	1, 17, 24, 26, 27, 28, 30, 38, 41, 43, 44, 46, 48, 51, 54, 55, 58, 59, 65, 68, 70, 75, 76	23