
I hereby give notice that a hearing by commissioners will be held on:

Date: **Week One: Tuesday 6 - Friday 9 October 2020**
Week Two: Monday 12 - Thursday 15 October 2020

Time: **9.30am**
Meeting Room: **Main Hall**
Venue: **Warkworth Masonic Hall,
3 Baxter Street, Warkworth**

HEARING REPORT

VOLUME TWO – NOTICE OF REQUIREMENT

**MULTIPLE SITES BETWEEN WARKWORTH AND
NORTH OF TE HANA**

**WAKA KOTAHI - THE NEW ZEALAND
TRANSPORT AGENCY**

COMMISSIONERS

Chairperson	Kitt Littlejohn
Commissioners	Kim Hardy
	Juliane Chetham
	Nigel Mark-Brown

Paulette Kenihan
SENIOR HEARINGS ADVISOR

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WHAT HAPPENS AT A HEARING

At the start of the hearing, the Chairperson will introduce the hearing panel and council staff and will briefly outline the procedure. The Chairperson may then call upon the parties present to introduce themselves to the panel. The Chairperson is addressed as Mr Chairman or Madam Chair.

Any party intending to give written or spoken evidence in Māori or speak in sign language should advise the hearings advisor at least five working days before the hearing so that a qualified interpreter can be provided.

Catering is not provided at the hearing. Please note that the hearing may be audio recorded.

Scheduling submitters to be heard

A timetable will be prepared approximately one week before the hearing for all submitters who have returned their hearing attendance form. Please note that during the course of the hearing changing circumstances may mean the proposed timetable is delayed or brought forward. Submitters wishing to be heard are requested to ensure they are available to attend the hearing and present their evidence when required. The hearings advisor will advise submitters of any changes to the timetable at the earliest possible opportunity.

The hearing procedure

The usual hearing procedure is:

- The Requiring Authority (the applicant) will be called upon to present their case. The Requiring Authority may be represented by legal counsel or consultants and may call witnesses in support of the application. After the Requiring Authority has presented their case, members of the hearing panel may ask questions to clarify the information presented
- The relevant local board may wish to present comments. These comments do not constitute a submission however the Local Government Act allows the local board to make the interests and preferences of the people in its area known to the hearing panel. If present, the local board will speak between the applicant and any submitters.
- Submitters (for and against the application) are then called upon to speak. Submitters may also be represented by legal counsel or consultants and may call witnesses on their behalf. The hearing panel may then question each speaker. The council officer's report will identify any submissions received outside of the submission period. At the hearing, late submitters may be asked to address the panel on why their submission should be accepted. Late submitters can speak only if the hearing panel accepts the late submission
- Submitters wishing to present written information (evidence) in support of their applications or submissions should provide the number of copies indicated in the notification letter
- Only members of the hearing panel can ask questions about submissions or evidence. Attendees may suggest questions for the panel to ask but it does not have to ask them. No cross-examination - either by the applicant or by those who have lodged submissions – is permitted at the hearing
- After the Requiring Authority and submitters have presented their cases, the chairperson may call upon council officers to comment on any matters of fact or clarification
- When those who have lodged submissions and wish to be heard have completed their presentations, the Requiring Authority or their representative has the right to summarise the application and reply to matters raised by submitters. Hearing panel members may further question the Requiring Authority at this stage

- The chairperson then generally closes the hearing and the Requiring Authority, submitters and their representatives leave the room.
- The hearing panel will then deliberate “in committee” and make a decision on the resource consent application and a recommendation to the Requiring Authority on the Notice of Requirement. The Requiring Authority then has 30 working days to make a decision and inform council of that decision. You will be informed in writing of both decisions separately, the reasons for the decision and what your appeal rights are
- The decision on the resource consent component is usually available within 15 working days of the hearing closing.

Notice of Requirement and Resource Consent application
Multiple sites between Warkworth and north of Te Hana
Date: Week One: Tuesday 6 - Friday 9 October 2020
Week Two: Monday 12 - Thursday 15 October 2020

A NOTIFIED DISCRETIONARY RESOURCE CONSENT APPLICATION BY WAKA KOTAHI - THE NEW ZEALAND TRANSPORT AGENCY.

AND

A NOTIFIED NOTICE OF REQUIREMENT TO THE AUCKLAND COUNCIL UNITARY PLAN BY WAKA KOTAHI - THE NEW ZEALAND TRANSPORT AGENCY.

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Nicola Holmes, Planner - Resource Consent

Reporting on a resource consent application to enable the construction, operation and maintenance for a new four lane state highway at Multiple sites between Warkworth and north of Te Hana. The reporting officer is recommending, subject to contrary or additional information being received at the hearing, that the application be **CONSENTED** to, subject to certain conditions.

Notice of Requirement and Resource Consent application
Multiple sites between Warkworth and north of Te Hana
Date: Week One: Tuesday 6 - Friday 9 October 2020
Week Two: Monday 12 - Thursday 15 October 2020

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Wayne Siu, Planner - Notice of Requirement

Reporting on a Notice of Requirement to enable the construction, operation and maintenance for a new four lane state highway at Multiple sites between Warkworth and north of Te Hana. The reporting officer is recommending that the notice of requirement be confirmed.

APPLICANT / REQUIRING AUTHORITY: Waka Kotahi - The New Zealand Transport Agency

**Notice of requirement under section 168
of the RMA by New Zealand Transport
Agency for the construction, operation
and maintenance of a new state highway
and associated activities between
Warkworth and north of Te Hana**



To: Hearing Commissioners

From: Wayne Siu, Planner

Report date: 28 August 2020

Scheduled hearing date: 6 October 2020

Notes:

This report sets out the advice of the reporting planner.

This report has yet to be considered by the Hearing Commissioners delegated by Auckland Council (the council) to make a recommendation to the requiring authority.

The recommendations in this report are not the decisions on the notice of requirement.

A decision on the notice of requirement will be made by the requiring authority after it has considered the Hearing Commissioners' recommendations, subsequent to the Hearing Commissioners having considered the notice of requirement and heard the requiring authority and submitters.

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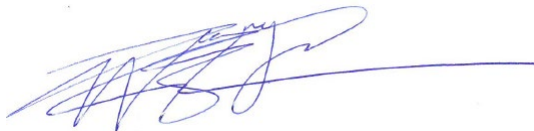
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Summary

Requiring authority	Waka Kotahi New Zealand Transport Agency
Notice of requirement reference	The construction, operation and maintenance of a new state highway and associated activities between Warkworth and north of Te Hana
Resource consent applications	Resource consent applications referenced as BUN60354951 have been lodged for this project and are being reported separately but heard and determined jointly with the notice of requirement.
Reporting planner	Wayne Siu
Site address	Land of approximately 1,348 hectares located between Warkworth and north of Te Hana
Lodgement date	20 March 2020
Notification date	18 May
Submissions close date	29 June
Number of submissions received	Total: 36 submissions were received, including 12 submissions which jointly addressed both the NoR and the associated resource consents

Report prepared by: Wayne Siu, Planner

Date:



Reviewed and approved for release by:

Peter Vari – Team Leader, Planning



Date:

28 August 2020

1 Introduction

1.1 The notice of requirement

Pursuant to section 168 of the RMA, Waka Kotahi New Zealand Transport Agency (NZTA) as the requiring authority, has lodged a notice of requirement (NoR) for a designation in the Auckland Unitary Plan (operative in part) (AUP) over a corridor of land of approximately 1,348 hectares located between Warkworth and north of Te Hana.

1.2 Locality plan

The general location of the project is shown on Figure 1 below. The reader is also referred to the drawings Designation Plans in Attachment 1.

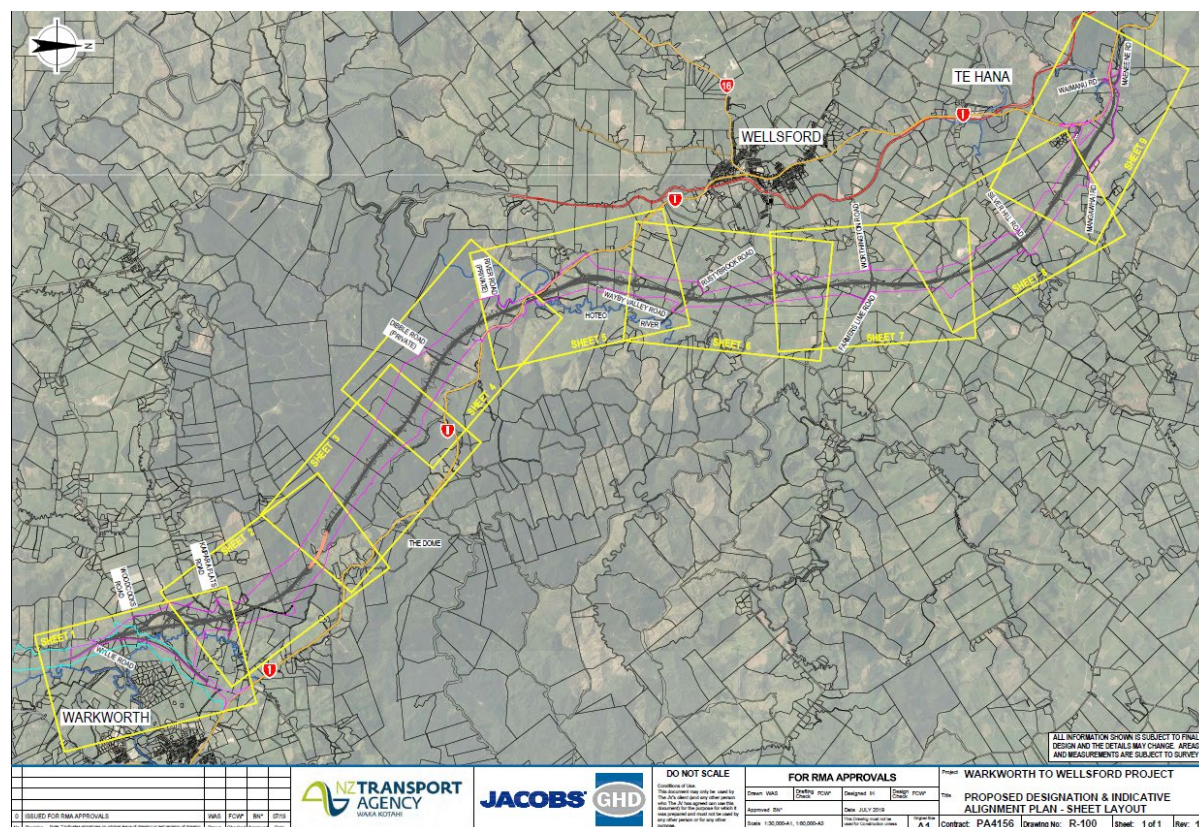


Figure 1 – General location plan

1.3 Notice of requirement and resource consent application documents

Table 1 below lists the lodged documents:

Documents Title	Author / date
Form for Notice of Requirement (Form 18)	Belinda Petersen, March 2020
Attachment A Gazette notices	January 2010

Attachment B Designation Plans showing the land to which the Notice of Requirement applies	Waka Kotahi – NZ Transport Agency, March 2020
Attachment C Schedule of land directly affected by the Notice of Requirement	Waka Kotahi – NZ Transport Agency, March 2020
Forms for resource consents (Form 9)	Belinda Petersen, March 2020
Schedule of land and CT's directly affected by the resource consents	Waka Kotahi – NZ Transport Agency, March 2020
Assessment of Effects on the Environment	Kathryn Sinclair, March 2020
Water Assessment Report (including construction, operation and flooding)	Tim Fisher (Tonkin & Taylor Ltd), Graeme Ridley (Ridley Dunphy Ltd), and Kate Clay (Jacobs NZ Ltd), July 2019
Existing Water Quality technical report	Kate Clay and Ailsa Robertson (Jacobs New Zealand Limited), July 2019
Construction Water Management Design technical report	Tony Cain and Roanna Salunga (GHD Limited), July 2019
Catchment Sediment Modelling technical report	Kate Clay (Jacobs New Zealand Ltd) and Stuart Easton (Jacobs New Zealand Ltd), July 2019
Assessment of Coastal Sediment technical report	Michael Allis, Cyprien Bosserelle and Scott Edhouse (NIWA Ltd), July 2019
Operational Water Design technical report	Tony Cain and Tegan Blount (GHD Ltd), July 2019
Operational Water – Road Runoff technical report	Ailsa Robertson (Jacobs New Zealand Ltd), July 2019
Hydrological Assessment technical report	Kate Clay (Jacobs), July 2019
Flood Modelling technical report	Mazhar Ali and Michelle Sands (Jacobs New Zealand Limited), July 2019
Hydrogeology Assessment	Chad Selbert and Mauricio Taulis (Jacobs New Zealand Ltd), July 2019
Ecology Assessment	Sarah Flynn, Katrina McDermott, Georgia Cummings, Lee Shapiro (Boffa Miskell Ltd), July 2019
Marine Ecology and Coastal Avifauna Assessment	Drs Sharon De Luca (marine ecology), Leigh Bull (avifauna ecology), Jacqui Bell (marine ecology) and Lee Shapiro (avifauna ecology) (Boffa Miskell Ltd), July 2019
Construction Traffic Assessment	Amanda Klepper and Kerstin Rupp (Jacobs New Zealand Limited), July 2019
Construction Noise and Vibration Assessment	Jesse Ngo (Jacobs New Zealand Ltd), July 2019
Air Quality Assessment	Charlotte Moore (Jacobs New Zealand Limited), July 2019
Historic Heritage Assessment	.Sarah Phear, Glen Farley, Zarah Burnett, Rod Clough (Clough & Associates Ltd), July 2019
Landscape and Visual Effects Assessment Part	Chris Bentley (Boffa Miskell Ltd), July 2019

Operational Traffic Assessment	Amanda Klepper and Kerstin Rupp, (Jacobs New Zealand Limited), July 2019
Operational Noise and Vibration Assessment	Jesse N90 and Joshua Loh (Jacobs New Zealand Ltd), July 2019
General Drawings	Jacobs GHD Joint Venture, July 2019
Proposed Designation and Indicative Alignment – Part 2 of 2	Jacobs GHD Joint Venture, July 2019
Bridge Structures	Jacobs GHD Joint Venture, July 2019 2019
Operational Water Management Drawings Part 1 of 2	Jacobs GHD Joint Venture, July 2019
Operational Water Management Drawings Part 2 of 2	Jacobs GHD Joint Venture, July 2019
Environmental Specialist Drawings	Jacobs GHD Joint Venture, July 2019
Construction Water Management Drawings – Part 1 of 2	Jacobs GHD Joint Venture, July 2019
Construction Water Management Drawings – Part 2 of 2	Jacobs GHD Joint Venture, July 2019
Groundwater Drawings	Jacobs GHD Joint Venture, July 2019
Marine Ecology Drawings	Jacobs GHD Joint Venture, July 2019
Operational Noise Drawings	Jacobs GHD Joint Venture, July 2019
Ecology Sites Part 1 of 5 (Vegetation Drawings)	Jacobs GHD Joint Venture, July 2019
Ecology Sites Part 2 of 5 (Herpetofauna Drawings)	Jacobs GHD Joint Venture, July 2019
Ecology Sites Part 3 of 5 (Avifauna Drawings)	Jacobs GHD Joint Venture, July 2019
Ecology Sites Part 4 of 5 (Bat Drawings)	Jacobs GHD Joint Venture, July 2019
Ecology Sites Part 5 of 5 (Freshwater Drawings)	Jacobs GHD Joint Venture, July 2019
Ecological Values – Individual Site Drawings	Jacobs GHD Joint Venture, July 2019
Priority Ecological Site Drawings	Jacobs GHD Joint Venture, July 2019
Landscape and Ecological Mitigation Drawings	Jacobs GHD Joint Venture, July 2019
Landscape Visual Simulations	Jacobs GHD Joint Venture, July 2019
Planning Version Urban and Landscape Design Framework	Jacobs GHD Joint Venture, July 2019

The documents are included in Attachment 1.

1.4 Section 92 requests and responses

Section 92 of the RMA allows councils to request further information from a requiring authority and/or commission a report, at any reasonable time before the hearing.

The council made further information requests and received responses on the dates in the following table.

Section 92 request	Date of section 92 response
<p>First request made on 18 June 2020 for the following NoR matters:</p> <ul style="list-style-type: none"> • Landscape and visual effects • Noise and vibration (operational) • Noise and vibration (construction) • Traffic (operational) • Historic Heritage – Archaeology • Historic Heritage – Built Heritage • Terrestrial ecology 	<p>First section 92 response received 29 July 2020 (stormwater and industrial and trade activity, earthworks, flooding).</p> <p>Second section 92 response received 5 August 2020 and dated 3 August 2020 (groundwater, freshwater ecology, terrestrial ecology, landscape, traffic, heritage archaeology, heritage built).</p> <p>Third section 92 response received 6 August 2020 and dated 5 August 2020 (noise and vibration).</p>
<p>Second request after submissions made on 17 July 2020 for the following matters:</p> <ul style="list-style-type: none"> • Noise and vibration (construction) 	

The council's section 92 requests and the requiring authority's responses are included in Attachment 2

1.5 Specialist reviews

The assessment in this report takes into account reviews and advice from the following technical specialists engaged by the council:

Specialist	Specialty
Stephen Brown	Landscape and visual
Siiri Wilkening	Construction and operational noise
Gary Black	Construction and operational traffic
Rebecca Ramsay	Historic Heritage (Archaeology)
Elise Caddigan	Historic Heritage (Built)
Andrew Rossaak	Terrestrial Ecology
Paul Crimmins	Dust and Air

These specialist reviews are included in Attachment 3.

2 Notice of requirement description

2.1 Background

This Notice of Requirement is the second stage of the Government's Pūhoi to Wellsford project. It will form part of State Highway 1 (SH1), connecting the Auckland and Northland regions once completed.

Section 2 of the AEE (Attachment 1) provides further details on the background and strategic context for the project. This can be summarised as giving effect to various broad strategic plans, which include projects and initiatives aimed at stimulating and transforming the Northland economy including the Tai Tokerau Growth Study and Tai Tokerau Northland Economic Action Plan 2016¹ by:

- improving the economic the performance of the Northland region; and
- by providing safety improvements and improving route resiliency between the Auckland and Northland regions.

2.2 Proposal

Section 4 of the AEE (Attachment 1) provides a detailed description of the proposal and is summarised briefly as: the construction, operation, and maintenance for a new four lane state highway, approximately 26km long, from Warkworth to north of Te Hana. This new state highway providing an alternative alignment to the existing SH1.

In brief, key works associated with the proposal include:

- a) A new four lane state highway, approximately 26km in length, offline from the existing SH1
- b) Three interchanges as follows:
 - i) Warkworth Interchange, to tie-in with the Ara Tūhono Pūhoi to Warkworth project (currently in construction) near Wyllie Road, and provide connections to the northern outskirts of Warkworth
 - ii) Wellsford Interchange, located at Wayby Valley Road to provide access to Wellsford and eastern communities including Tomarata and Mangawhai
 - iii) Te Hana Interchange, located at Mangawhai Road to provide access to Te Hana, Wellsford and communities including Port Albert, Tomarata and Mangawhai

¹ Tai Tokerau Northland Growth Study, February 2015,
<https://www.mpi.govt.nz/dmsdocument/5428/send>

Tai Tokerau Northland Economic Action Plan, February 2016
<https://www.northlandnz.com/assets/Resource-Hub/Economic-Action-Plan/2016-Tai-Tokerau-Northland-Economic-Action-Plan.pdf>

- c) Twin bore tunnels under Kraack Road in the Dome Valley area, each serving one direction, that are approximately 850 metres long and approximately 160 metres below ground level at their deepest point
- d) A series of cuts and fills are proposed through the forestry area to the west of the existing SH1 (west of The Dome) and other areas of cut and fill will be along the remainder of the Project
- e) A viaduct (or twin structures) approximately 485 metres long, to span over the existing SH1 and the Hōteu River
- f) A tie in to existing SH1 north of Maeneene Road, including a bridge over Maeneene Stream
- g) Changes to local roads, where the proposed work intersects with local roads:
 - i) Maintaining local road connections through grade separation (where one road is over or under the other). The Indicative Alignment passes over Woodcocks Road, Wayby Valley Road, Whangaripo Valley Road, Mangawhai Road and Maeneene Road. The Indicative Alignment passes under Kaipara Flats Road, Rustybrook Road, Farmers Lime Road and Silver Hill Road.
 - ii) Realignment of sections of Wyllie Road, Carran Road, Kaipara Flats Road, Phillips Road, Wayby Valley Road, Mangawhai Road, Vipond Road, Maeneene Road and Waimanu Road.
 - iii) Closing sections of Phillips Road, Robertson Road, Vipond Road and unformed roads affected by the project.
- h) Associated works including bridges, viaducts, embankments, culverts, stormwater management systems, soil disposal sites, signage, lighting as required to meet safety standards, landscaping, realignment of access points to local roads, and maintenance facilities.
- i) Construction activities, including construction compounds, borrow sites, lay down areas and establishment of construction access and haul roads.

Section 5 of the AEE (Attachment 1) provides an outline of a possible construction methodology. This is indicative only to assist in the assessment of construction related effects on the environment. The construction methodology will be further refined and developed in compliance with any conditions once the contract(s) are awarded and contractor(s) are in place.

The AEE assumes that construction of the project will start in 2030 and take 7 years to complete.

Additional land has been included in the designation to provide for construction related activities such as site access, a site office and laydown areas. It is proposed that these sections of the designation will be drawn back on completion of the road.

The requiring authority identifies the objectives of the designation as:

- Increase corridor access, improve route quality and safety, and improve freight movement between Warkworth and the Northland Region;
- Provide resilience in the wider State highway network;
- Improve travel time reliability between Warkworth, Wellsford and the Northland Region;
- Provide connections to and from Warkworth, Wellsford and Te Hana;
- Provide a connection at Warkworth that optimises the use of infrastructure from, and maintains the level of service provided by, the Pūhoi to Warkworth project; and
- Alleviate congestion at Wellsford by providing an alternative route for north – south through traffic.

2.3 Proposed draft designation conditions

The requiring authority proposed draft designation conditions as part of the notice of requirement (dated 12 May 2020, refer Form 18 of Attachment 1). Council's specialist reviews use the proposed draft designation conditions as the basis for their assessment and recommendations.

2.4 Affected land

Form 18 for the NoR together with the drawing set provided as Attachment B to that form describes the land that will be directly affected and required for the project and associated works (Attachment 1).

2.5 Site, locality, catchment and environment description

This report relies on the site and environment descriptions provided by the requiring authority as set out in section 3 of the AEE (Attachment 1) supporting the NoR.

In brief, the wider project area extends from Warkworth to the wider Wellsford area, and the northern outskirts of Te Hana. The area comprises mainly rural, commercial plantation forestry and rural residential uses. Plantation forestry – Matariki Forest – covers approximately 34% of the total project area (488ha) and is largely made up of pine with smaller areas of hardwoods. They are likely to reach maturity around the time as the project's pre-construction phase and will be progressively harvested from around 2025-2027.

Warkworth, Wellsford and Te Hana are main settlement areas near the project. The current SH1 alignment passes through the centre of all three settlements.

Warkworth is the largest of these settlements and contains a variety of uses typical of urban areas. The Auckland Plan identifies Warkworth as a satellite town, acting as a rural node. The Warkworth Structure Plan identifies land uses for the outlying areas of the town zoned Future Urban to accommodate an additional 20,000 residents.

Wellsford is the second largest (and northern-most in the Auckland region) settlement. It has typical urban uses. It serves as a service centre for the surrounding rural areas of northern Rodney.

Te Hana is the smallest with a population of approximately 200 people and contains few services and shops.

Smaller concentrations of residential uses exist outside of the three main settlements at Phillips Rd and Kaipara Flats Rd, Kraack Rd, Rustybrook Rd, Worthington Rd, Wayby Valley Rd and Charis Lane.

The project sits within three major catchments: the Mahurangi River catchment; Hōteio River catchment; and the Oruawharo River catchment. The Mahurangi River catchment drains directly into the Mahurangi Harbour while the Hōteio River Catchment and the Oruawharo River catchment drains into the Kaipara Harbour.

Stock access and modifications in the surrounding drainage systems have degraded many of the wetlands in the project area. Wetlands with higher ecological values – habitat for birds and regionally significant plant species - exist in the upper Kourawhero Stream valley, and parts of the Hōteio River system.

2.6 Other designations, notices of requirement and consent applications.

The land within or adjoining the NoR is subject to a number of existing designations and unimplemented resource consents as summarised in section 6.6 of the AEE (Attachment 1). They are summarised below:

Requiring Authority	Designations
New Zealand Transport Agency	6769 (Ara Tūhono - Pūhoi to Wellsford Road of National Significance: Pūhoi to Warkworth Section), 6763 (SH1), 6765 (State Highway 1/Wayby Valley Road/Wayby Station Road intersection)
Chorus New Zealand Ltd	2604 (Kraack Hill Telecommunications site)
Spark NZ Trading Ltd	7515 (Kraack Hill Telecommunications site)
Refining NZ	6500 (Petroleum Pipeline: Rural Section)
First Gas Ltd	9101 (Taupaki to Topuni Gas Pipeline)

Due to extent of the proposed designation boundary, upon request from the hearing commissioners, the council can provide a list of existing land use and focused regional consents (e.g. groundwater takes, network discharges) within and immediately adjoining the project footprint. As consent processing is a continually evolving situation, this information has not been appended to this report as it may be out of date at the time of the hearing.

3 Notification and submissions

3.1 Notification

The NoR was publicly notified on 18 May 2020.

The closing date for submissions was 29 June 2020.

The requiring authority requested that the standard submission period be extended by 10 working days. This extension recognised the large amount of information that has been provided and to avoid unduly affecting the public's ability to make a submission under Covid-19 restrictions.

3.2 Submissions

36 submissions were received, including 12 submissions which addressed both the NoR and the associated resource consents (JS denotes 'Joint Submission', RC denotes 'Resource Consents' and are included where there are relevant matters). The submissions are:

Submission reference	Submitter
JS1	David Mason and Dianne McCallum
JS2	First Gas Limited*
JS3	Royal Forest and Bird Protection Society of New Zealand Inc.
JS4	Watercare Services Limited
JS5	Federated Farmers of New Zealand (Auckland Province) Incorporated
JS6	Andrew David Miller
JS7	Director General of Conservation (Graeme Silver & Michelle Hooper)
JS8	Angela and Geoffrey Still
JS9	Dando Family Trust
JS10	Amanda and Erdem Oguz
JS11	Katrina Todd
JS12	Donnellan Family
NOR1	MH Creemers
NOR2	Spark New Zealand Trading Limited
NOR3	Transpower New Zealand Limited
NOR4	Warkworth Area Liaison Group * Incorporating supplementary information received post close of submissions
NOR5	The Friends of Streamlands
NOR6	Silver Hill Trust
NOR7	One Warkworth (David Stott)
NOR8	Wendy Patricia Court
NOR9	Auckland Transport
NOR10	Puriri Springs Trust
NOR11	Southway
NOR12	Sunnyheight Nurseries Ltd
NOR13	One Warkworth (David Hay)
NOR14	Heritage New Zealand Pouhere Taonga
NOR15	National Road Carriers
NOR16	Waste Management NZ Ltd
RC13	NZ Refining
RC29	Hōkai Nuku
RC30	Tertia de Vaile Wildy
RC32	NZ Heavy Haulage Association
RC38	Vision Wellsford

RC39	Independent Northland Business and Residents
RC40	Heidi Downey
RC41	Ron Reid

*late submission, refer to recommendation in section 4.2.1.

Copies of submissions are included in Attachment 4.

The issues raised in submissions are addressed in section 4.2.2 of this report.

4 Consideration of the notice of requirement

4.1 Designations under the Resource Management Act 1991

The RMA provides that the procedures adopted in processing a notice of requirement are generally those adopted for processing a resource consent application. This includes lodgement, requiring further information, notification, receiving and hearing of submissions. In respect of this NoR, all of those procedures have been followed.

The procedure differs from the resource consent process in respect of the council consideration of the NoR. Section 171(1) of the RMA states:

- (1) *When considering a requirement and any submissions received, a territorial authority must, subject to Part 2, consider the effects on the environment of allowing the requirement, having particular regard to—*
 - (a) *any relevant provisions of—*
 - (i) *a national policy statement:*
 - (ii) *a New Zealand coastal policy statement:*
 - (iii) *a regional policy statement or proposed regional policy statement:*
 - (iv) *a plan or proposed plan; and*
 - (b) *whether adequate consideration has been given to alternative sites, routes, or methods of undertaking the work if—*
 - (i) *the requiring authority does not have an interest in the land sufficient for undertaking the work; or*
 - (ii) *it is likely that the work will have a significant adverse effect on the environment; and*
 - (c) *whether the work and designation are reasonably necessary for achieving the objectives of the requiring authority for which the designation is sought; and*
 - (d) *any other matter the territorial authority considers reasonably necessary in order to make a recommendation on the requirement.*

Section 171(1)(a) is addressed in sections 4.5, 4.6, 4.7 and 4.8 below. Section 171(1)(b) is addressed in section 4.9 below. Section 171(1)(c) is addressed in section 4.10 below. Section 171(1)(d) is addressed in section 4.11 below.

Section 171(1) is subject to Part 2 of the RMA. Part 2 contains the purpose and principles of the RMA. It has been confirmed by the Environment Court that, in relation to a designation matter:

...all considerations, whether favouring or negating the designation, are secondary to the requirement that the provisions of Part II of the RMA must be fulfilled by the proposal.²

After considering these matters, the council needs to make a recommendation to the requiring authority under section 171(2) of the RMA which states:

- (2) *The territorial authority may recommend to the requiring authority that it –*
- (a) *confirm the requirement:*
 - (b) *modify the requirement:*
 - (c) *impose conditions:*
 - (d) *withdraw the requirement.*

Reasons must be given for the recommendation under section 171(3) of the RMA. Refer to section 6 below for my recommendation.

4.2 Consideration of submissions

4.2.1 Late submissions

The following table lists submissions received after the closing date for submissions.

Submitters name	Date submission received by the council
First Gas	30 June

At the start of the hearing, the Hearing Commissioners must decide whether to extend the closing date for late submissions. Under section 37A of the RMA, the Hearing Commissioners must take into account:

- the interests of any persons who, in the Hearing Commissioners opinion, may be directly affected by the extension or waiver; and
- the interests of the community in achieving adequate assessment of the effects of the proposal; and
- the duty under section 21 of the RMA to avoid unreasonable delay.

² See Estate of P.A. Moran and Others v Transit NZ (W55/99)

Under s37 and s37A of the RMA I **recommend that the late submission from First Gas be accepted**. The reason for this recommendation is:

- the submission was only one day late, received at 30 June 2020;
- the submission is within scope;
- the matters raised in the submission are similar to other submissions that were received during the submission period and therefore do not disadvantage other directly affected parties;
- I do not consider that the waiver would directly affect the interests of any person; and
- it is considered that including the late submission will not cause any unreasonable delay.

For completeness I have included this late submission as part of the submissions assessment below.

4.2.2 Submission assessment

The matters raised in submissions are considered below. Where relevant cross references are made to the assessment of effects set out in this report in section 4.3 Effects on the environment.

4.2.2.1 General Support

Submission NOR 1 – MH Creemers, NOR 13 – One Warkworth (David Hay), RC 38 – Vision Wellsford and RC39 – Independent Northland Business and Residents are supportive of the NoR due to the benefits to the future of the Northland region.

Comment:

I note that these submissions recognise the potential positive economic and traffic effects of the NoR for the local communities. Therefore, consider that these submissions have merit.

4.2.2.2 Corridor approach / use of indicative alignment

Submission JS 1 - David Mason and Dianne McCallum, JS 8 - Angela and Geoffrey Still, JS 10 – Amanda and Erdem Oguz, JS 9 – Dando Family Trust, JS 11 – Katrina Todd and JS 12 – Donnellan Family made submissions on the corridor approach / use of an indicative alignment for the assessment of effects.

The submissions oppose the use of a corridor approach with the detailed design to come later. The main reason is that they consider such an approach will not provide the certainty needed to adequately assess the potential effects of the project.

JS 11 seeks to ensure elements of the indicative route won't be amended in a way which adversely affects their property.

Comment:

I consider that it is important to acknowledge the additional level of uncertainty resulting from a corridors approach. This includes assessments which may not provide the level of detail or confidence a member of the public may expect from a more 'typical' RMA process. Likewise, I acknowledge the effort members of the public have put into their submissions given the added complexities.

Notwithstanding this, the application reflects the nature of the NoR as essentially route protection for the proposed state highway. It secures the route for the future use and specifies the purpose for which the land will be used for. This approach involves an indicative alignment and possible construction methodology within an identified, preferred 'corridor' to accommodate the state highway. Detailed design and construction methodology would take place once the contractors are appointed. In some instances, the final design and construction methodology may differ, but will still occur within the designation boundary and in accordance with the designation conditions.

Designations are deliberately broader in scope and purpose than resource consents. It is my understanding that this approach is common practice for other major highway projects and allows for flexibility and potential optimisation of the project during the detailed design stage. I note that there is also an element of impracticality in expecting the requiring authority to provide detailed designs a number of years before the project is expected to begin and before contractors are appointed.

Therefore, it is fundamental to ensure conditions can clearly demonstrate how potential adverse effects will be managed and that interested parties have certainty that this would still be the case following any changes arising from the detailed design process.

My view is that the technical assessment that the AEE (Attachment 1) relies on, does contain some level of sensitivity assessment to provide a general 'envelope of effects'. I consider that this is an appropriate response for the nature of the project.

Council's expert assessments have commented on the appropriateness of this as well; the section 92 process having provided some additional clarity. I do note each expert has expressed varying levels of satisfaction with this approach. The focus of the various specialists has been to ensure a sufficiently rigorous understanding of effects to enable conditions that can achieve the appropriate outcomes. To this end, all of council's specialists consider that there was sufficient information for them to make an informed professional opinion. Their recommendations reflect this; therefore, I consider that a corridor approach is appropriate.

In some instances, a designation may include a condition requiring works to be undertaken in general accordance with the plans and information submitted as part of the application. The requiring authority did not include such a condition as part of their proposed draft conditions. Notwithstanding the broad approach of NoRs and the detailed design stage to come, such a 'general accordance' condition is necessary to link the application documents with the designation. Similarly, this will provide additional certainty to submitters and the decision maker as to how the appropriate outcomes can be achieved. Therefore, I recommend the insertion of such a 'general accordance' condition. This may partially address the relief sought by submission JS 11 by providing additional assurance on the potential layout of the proposed state highway.

4.2.2.3 Use of management plans

Submissions JS1 – David Mason and Dianne McCallum, JS 3 – Royal Forest and Bird, JS 7 – Director General of Conservation, JS 8 - Angela and Geoffrey Still, NOR 5 – Friends of Streamlands, NOR 8 – Wendy Patricia Court, NOR 10 –Puriri Springs Trust, and NOR 11 – Southway made submissions relating to noise and vibration during the construction period.

The submitters oppose the use of management plans for the following reasons:

- Concern that completed management plans won't be developed or provided to Council until later in the process meaning the substantive assessment is incomplete
- They do not provide the ability for the public/affected parties to provide input once conditions are finalised
- The high level of discretion retained by the requiring authority
- The lack of certainty enabled by management plans

JS1 seeks conditions to apply to all management plans providing for consultation with affected parties and an independent arbitration process.

Comment:

The requiring authority proposes to manage potentially adverse effects through management plans. Generally, the management plans identify an environmental outcome to be achieved.

My understanding is that the approach of managing adverse effects through management plans is common for large projects. Due to the nature of those projects, the precise nature and full extent of effects at this NoR stage will be subject to a degree of uncertainty as the detailed designs cannot be finalised until later. Consequentially, the precise methods or mechanisms proposed to avoid, remedy, or mitigate potential adverse effects will not be absolutely certain.

The efficacy of management plans then relies on clearly setting out the matters they are required to address, and that the objective to be achieved is clear and certain.

It is my view that the correct conditions can appropriately ensure that any management plan regimes are sufficiently robust enough to manage adverse effects while maintaining flexibility for the requiring authority. The issue is then more to do with the wording of the proposed conditions rather than the efficacy of management plans as tools to achieve the objectives. If the proposed conditions are to address an adverse effect, the decision maker should still be satisfied that it will in fact do so.

The focus should be on ensuring the conditions are sufficiently robust to enable this to occur. I consider that the proposed draft conditions once subject to recommended changes, will achieve this and will reasonably guarantee the relevant outcomes – including appropriately managing any potential adverse effects. With regards to consultation with landowners, my view is that a blanket requirement would be impracticable and inappropriate. Consultation on management plans will be dependent on the specifics of the individual management plan; this is reflected in the consideration of council's specialist. Therefore, I do not accept these submissions and consider the continued use of management plans as appropriate.

I note the requiring authority did not propose any draft conditions to allow for the review of the management plans. Given the expected construction period of 7 years, such a review process can ensure that the management plans can continue to achieve their objectives. This will also allow for the incorporation of developing best practice, any subsequent changes in standards or material conditions, and address shortcomings that may emerge from such a review. Therefore, I recommend a new condition to provide for the annual review of certified management plans.

4.2.2.4 Construction Noise and Vibration

Submissions JS1 – David Mason and Dianne McCallum, JS 9 – Dando Family Trust, JS 10 – Amanda and Erdem Oguz, JS 12 – Donnellan Family, NOR 6 – Silver Hill Trust, NOR 8 – Wendy Patricia Court, NOR 12 – Sunnyheight Nurseries Ltd made submissions relating to noise and vibration during the construction period. The submissions relate to the adverse amenity effects on properties adjoining/near the designation boundary resulting from construction noise and vibration.

JS1 commented on the following:

- Duty to avoid unreasonable noise, citing ss16 and 17 of the RMA
- Indicative alignment/corridor approach of the NoR which results in uncertainty
- Clarity on construction noise effects, including road noise, sundry noise, equipment noise
- Construction vibration effects and potential for damage
- Choice of vibration standards

They seek changes to the proposed draft conditions to mitigate adverse construction noise and vibration effects. These include improving complaints process, limits on road noise, rock crusher noise, backing alarms, noise limits, vibration limits, blasting advice and limits, monitoring, night-time noise and blasting.

JS 9, JS 10, and NOR 8 questions the accuracy of noise assessment, noting the discrepancy between the measured ambient noise and the modelling and consider that it relies on inadequate baseline surveying.

JS 9 seeks that the requiring authority purchase their property or mitigation measures for construction noise and vibration

JS 10 seeks to limit construction work hours.

NOR 6 is concerned that the noise assessment does not adequately address the health and wellbeing of their employees and livestock

Comment:

Section 9.8 of the requiring authority's Assessment of Environmental Effects (AEE, Attachment 1) discusses the temporary noise and vibration effects from the construction of the project. Section 9.8.3 provides specific details on the assessment methodology. Ms. Wilkening's (council's consultant acoustic specialist) assessment (Attachment 3) addresses the concerns of the submissions in detail - either individually, or in broad themes.

Ms. Wilkening generally considers that the assessment of construction noise and vibration is appropriate, and that the issues raised by the submissions can be adequately addressed by amendments to the proposed draft conditions. She also addresses the noise assessment and the appropriate level of 'reasonable' noise to be expected from temporary effects associated with projects of this scale.

JS9 raised the issue of health impacts from construction noise and vibration. The submitter identifies family members who have histories/personal circumstances which they cite as why they are more susceptible to noise and vibration effects. It is important to acknowledge that while the submitter may be more sensitive to noise, my understanding is that noise effects are experienced differently by individuals hence the reliance on industry standards to approximate a level of objective measure of the effects.

In light of the above I adopt the assessment of Ms. Wilkening and consider that the matters raised in the submissions are adequately addressed.

These matters are discussed further in section 4.3.4.3 of this report. Section 4.2.2.15 contains my response to relief sought relating to the acquisition of properties.

4.2.2.5 Operational Noise and Vibration

Submissions JS1 – David Mason and Dianne McCallum, JS 8 – Angela and Geoffrey Still, JS 9 – Dando Family Trust, JS 10 – Amanda and Erdem Oguz, JS 12 – Donnellan Family, NOR 5 – Friend of Streamlands, NOR 6 – Silver Hill Trust – Greg and Ingrid McCracken, NOR 8 – Wendy Patricia Court, NOR 12 – Sunnyheight Nurseries Ltd made submissions relating to noise and vibration from the operation of the proposed state highway.

These submissions contend that the adverse operational noise and vibration effects of the project are not appropriately managed. They relate to effects on properties adjoining/near the designation boundary, similar to submissions on construction noise and vibration.

Submission JS1 questioned the robustness of the requiring authority's assessment due to discrepancies within the noise modelling against measured ambient noise levels; the level of proposed monitoring; and the appropriateness of the noise standards used.

Comment:

Section 9.15 of requiring authority's Assessment of Environmental Effects (AEE, Attachment 1) discusses the operational noise and vibration effects of the project. Section 9.15.3 contains details on the operational noise assessment methodology. Of particular relevance is the NZS 6806:1999 assessment which is used to measure compliance of the modelled noise and to inform mitigation measures.

Ms. Wilkening's assessment (Attachment 3) addresses the concerns of the submissions in detail - either individually, or in broad themes. She identifies her own issues with appropriateness of the noise modelling and measured ambient noises as applied to properties dependent on their proximity to the designation boundary. Notwithstanding, her view is that the potential noise effects are consistent with traffic projects of this scale, and that the adverse operational noise and vibration effects can be appropriately managed by amendments to the proposed draft conditions.

I feel that it is important to acknowledge the scale of change to the submitter's amenity values because of the operational noise and vibration effects. I am also mindful that the adverse noise and vibration effects are relatively localised over the length of the designation corridor. When considered against the positive effects of the project, a broad judgement approach is appropriate. I consider that any potential adverse operational noise and vibration effect can be mitigated by the recommended amendments to the proposed draft conditions and therefore do not outweigh the potential positive effects of the proposal.

The corridor approach to noise assessment provides an envelope of effects which gives an indication of the 'worst case scenario'. In the context of the above and of the route protection nature of the designation I consider this is an appropriate approach. This is supported by Ms. Wilkening's acoustic opinion.

While the level of mitigation resulting from the amendments to the proposed draft conditions recommended by Ms. Wilkening may not meet the expectations of some of the submitters, I am of the view that based on Ms. Wilkening's assessment, the effects can be appropriately mitigated.

These matters are discussed further in section 4.3.4.8 of this report.

4.2.2.6 Landscape and visual amenity effects

Submissions JS1 – David Mason and Dianne McCallum, JS 8 – Angela and Geoffrey Still, JS 9 – Dando Family Trust (Edwin and Toni Dando), JS 10 – Amanda and Erdem Oguz, JS 12 – Donnellan Family, NOR 8 – Wendy Patricia Court, NOR 10 – Puriri Springs Trust, NOR 11 – Southway, RC 20 – Bruce and Joy Drower, RC 24 – Rae Family Trust, RC 25 – Pamela Chestnut, RC 26 – Julia Withers, RC 29 - Hōkai Nuku, and RC 30 – Tertia de Vaile Wildy relate to landscape and visual effects.

I note that submissions RC 20, RC 24, RC 25, and RC 26, while directly addressing the resource consent applications raised matters relating to landscape and visual amenity effects. For completeness, these are also addressed here.

Many submissions object to the scale of the project's effect on visual amenity values. A number considered that the corridor approach contributed to a degree of uncertainty in the assessment of visual effects.

The submissions seek conditions to mitigate the visual effects of the project. JS 1 specifically seeks to limit the location of construction yards/compounds to reduce their visual effects on nearby residences and questions the realignment of Kaipara Flats Road as it will affect a strand of bush comprising the submitter's visual outlook.

NOR 8 and RC 29 Submitted specifically on the Urban Design Landscape Framework as proposed in the proposed draft conditions.

RC29 provides specific recommended changes to the wording of the proposed draft conditions to acknowledge cultural values and any Cultural Artworks Plan of Mana Whenua. NOR 8 cites the experiences in the implementation of the UDLF during the Puhoi-to-Warkworth section of the SH1 to require more stringent oversight as part of any management plan process.

Comment:

Section 9.13 of the requiring authority's Assessment of Environmental Effects (AEE, Attachment 1) discusses the landscape and visual effects of the project. I note that as part the section 92 process (Attachment 3), the requiring authority has subsequently strengthened their assessment with respects to the effects on visual amenity.

Mr. Brown's (council's consultant landscape specialist) assessment (Attachment 3) addresses the concerns of the submissions in detail - either individually, or in broad themes. Mr. Brown's assessment recommends changes to the proposed draft conditions to appropriately manage the adverse visual effects on amenity values of nearby residents. I do note that Mr. Brown maintains his own discomfort with the corridor approach and agrees with the submitters that this contributes to uncertainty about the adverse effects.

These matters are discussed further in Section 4.3.4.6 of this report. Submission RC 29 is addressed in section 4.3.4.10.

Notwithstanding, given the scale and lifetime of the project, I am satisfied that Mr. Brown's recommended changes to the proposed draft conditions will result in mitigation measures that should address adverse visual effects on amenity values in the longer term.

4.2.2.7 Terrestrial Ecology

Submissions JS1 – David Mason and Dianne McCallum, JS 3 – Royal Forest and Bird, JS 7 – Director General of Conservation, JS 8 – Angela and Geoffrey Still, JS 9 – Dando Family Trust, JS 12 – Donnellan Family, NOR 5 – The Friends of Streamlands, NOR 8 – Wendy Patricia Court, NOR 10 – Puriri Springs Trust, and NOR 11 –Southway made submissions relating to terrestrial ecology.

Freshwater ecology matters are addressed in section 13 of the resource consents section 42A report prepared by Ms. Holmes.

Many of the submissions took issue with the adequacy of the assessment of effects on terrestrial ecology – suggesting it is insufficient due to the corridor approach of the NoR, or that specific sites of ecological value have been missed.

Some of the submissions identified concerns with relying on management plans to address the adverse effects – this has been addressed as a broader theme in section 4.2.2.3.

Finally, submissions JS 3 and JS 7 raised the issue of having freshwater and terrestrial ecology conditions separated. Their main reasons are that there should be a clear connection with the conditions and the effects being managed, and the view that management plans under a resource consent provides more robustness for council input as opposed to the more enabling nature of an outline plan of works process under the designation. The location of terrestrial ecology conditions within the designation while land use consents are applied for vegetation removal is a key example of this issue.

The submitters seek to amend the proposed draft conditions to reflect:

- Concern around specific threatened species and the ability to avoid or mitigate impacts on these.
- The implementation of kauri dieback protocols
- The adequacy of proposed conditions to manage effects (particularly around the proposed management plans), and that some effects are not addressed, such as dust on plants and fauna.

Submission JS 1 and JS 7 provide specific amendments in some instances.

Comment:

Section 9.5 of the requiring authority's Assessment of Environmental Effects (AEE, Attachment 1) discusses the Terrestrial and Freshwater Ecology. P216 of the AEE addresses, to an extent, sensitivity caused by shifts in the alignment and its effect on terrestrial ecological values. It states:

For example, within the Warkworth North section a movement of the alignment east or west in the upper Kourawhero Stream valley will result in the loss of part, or all, of specific high value sites, but may also then reduce or avoid the bisection of other features within the proposed designation to the south... Thus, sensitivities to spatial movement of the Indicative Alignment are moderate to high, particularly in the Warkworth North and Hōteio North sections.

This provides important context when considering submissions which seek to protect specific areas of ecological values by requiring shifts in the indicative alignment. Mr. Rossaak's (council's consultant ecologist) assessment (Attachment 3) takes an approach of ensuring the conditions provide a robust process and that there will be a sufficient level of assurance in achieving the desired and reported ecological outcomes. He has done so while recognising the level of uncertainty regarding the actual quantum of potential 'residual' effects on the ecological values within the proposed designation following detailed design. I consider that this is an appropriate response given the nature of the NoR.

Mr. Rossaak's assessment (Attachment 3) addresses the concerns of the submissions in detail - either individually, or in broad themes. His assessment contains many of the reservations raised by the submissions, namely:

- The need for further survey closer to the start of the project due to potential change to ecological values
- Transparency around the use of methodology around the proposed offsets
- Need for monitoring to ensure the efficacy of the management approaches in achieving ecological outcomes

Mr Rossaak recommends amendments to the proposed draft conditions that will go some way towards addressing the submitter's broader concerns around certainty of terrestrial ecological outcomes. I consider that his approach is appropriate and strikes a balance in managing the potential adverse effects emerging from the project while still being proportional to the nature of similarly scaled 'route-protection' designations.

In addressing some site-specific concerns, Mr. Rossaak considers that no further conditions are necessary. These will be accommodated via the implementation of management plans (subject to his recommended amendments) following detailed design.

These matters are discussed further in section 4.3.4.1 of this report.

Notwithstanding, given the scale and lifetime of the project, I am satisfied that Mr. Rossaak's recommended changes to the proposed draft conditions will result in mitigation measures that address the potential adverse terrestrial ecological effects in the longer term.

4.2.2.8 Construction Traffic

Submissions JS 1 – David Mason and Dianne McCallum, JS 8 – Angela and Geoffrey Still, JS 9 – Dando Family Trust, JS 10 – Amanda and Erdem Oguz, JS 12 – Donnellan Family, NOR 6 – Silver Hill Trust – Greg and Ingrid McCracken, NOR 9 – Auckland Transport, NOR 12 – Sunnyheight Nurseries Ltd made submissions relating to construction traffic.

Submissions JS 1, JS 9, and JS 10 are opposed to the potential adverse construction traffic effects as they relate to the cluster of residential properties near Kaipara Flats Road and Phillips Road. Their main reasons include:

- Experiences of construction traffic from the P2Wk works, and the need for tighter controls;

- The ability of local roads to accommodate heavy vehicles and subsequent safety implications (particularly the intersection of Kaipara Flats Road and the existing Statehighway 1, and restrictions due to one-way bridges located on Kaipara Flats Road and Woodcocks Road);
- Delays to travel times due to a potential increase in traffic volumes during the construction of the project;
- Damage to roads from heavy vehicles; and
- Implications for access to and through private property

The submissions seek amendments to the draft proposed conditions and new conditions to further avoid or minimise potential adverse effects identified above.

Comment:

Section 9.7 of the requiring authority's Assessment of Environmental Effects (AEE, Attachment 1) addresses the potential adverse effects of construction traffic. The submissions relate to the general effects of construction traffic throughout the project area and site-specific areas localised mainly around the southern sections of the corridor around the Kaipara Flats Rd/Carran Road area.

Mr. Black (council's consultant transport specialist) assessment (Attachment 3) addressed the submission's – individually and as broad themes. He states:

Many submitters had concerns regarding the impact of construction traffic on the local road network around Kaipara Flats Rd (incl. Phillips Rd), and Worthington Rd/ Farmers Lime Road. I have reviewed the CTA [construction traffic assessment] including the use of the CTMP [Construction Traffic Management Plan] to manage the effects of construction traffic, including traffic management, capacity and road safety. I believe this to be an appropriate measure to mitigate such effects of construction traffic.

The submitters raised concerns around avoiding haulage on local roads. As construction materials will have to be delivered to site, the use of local roads will be required and the CTA assessment identifies the SAP's [Site Access Points] and haul routes and I have assessed this above. The CTA provides commentary that the construction traffic will likely use the project route for the movement of materials where practicable.

Mr. Black recommended changes to the proposed draft conditions identifying potential interventions to address site specific issues within the local road network.

I adopt his assessment and consider that matters raised by JS 1, JS 8, JS 9, JS 10, NOR 6 and NOR 12 will be appropriately addressed by proposed changes to the proposed draft conditions.

These matters are discussed further in section 4.3.4.2 of this report.

I will now address the matter of Puhoi to Warkworth works referenced by a number of submitters. While I do not think it is appropriate to dismiss the submitter's personal experiences with the P2Wk works, I do not consider them to be relevant insofar that they should be the driving force in determining the appropriateness of proposed draft conditions.

From my planning perspective, consideration of conditions should be one based on fact and degree. My view is that it is impracticable to consider any proposed conditions from an assumption of non-compliance. This will introduce too many hypotheticals; frustrating any attempts for the various parties to reach alignment in terms of understanding the implications of the precise wordings of any discussed conditions. I also turn my mind to the *Newbury Principles*³ which held that conditions should:

- (a) be for a resource management purpose, not for an ulterior one;
- (b) fairly and reasonably relate to the development authorised by the consent to which the conditions attach; and
- (c) not be so unreasonable that a reasonable planning authority, duly appreciating its statutory duties, could not have approved it.

While not a direct legal connection, I am of the view that there is a logical connection in that the test of reasonableness is applicable in this situation – namely that it is not an unreasonable assumption that those giving effect to a designation will do so while meeting the outcomes anticipated by the conditions. If a contractor does not comply, then that is a separate issue whereby enforcement actions can occur to effect compliance. I note that I have recommended a condition requiring annual reviews of the management plans. This process will take into account how previous complaints were dealt with and provides an opportunity to incorporate lessons learnt over the previous year of works.

Submission NOR 9 Auckland Transport mainly seek to retain proposed draft conditions managing potential adverse construction traffic effects. I note that this support has merit.

4.2.2.9 Operational Traffic

Submissions JS1 – David Mason and Dianne McCallum, JS6 - Andrew David Miller, NOR 4 – Warkworth Area Liaison Group, NOR 7 – One Warkworth (David Stott), NOR 8 – Wendy Patricia Court, NOR 9 – Auckland Transport, NOR10 – Puriri Springs Trust, NOR 11 – Southway, NOR 15 - National Road Carriers, RC 29 - Hōkai Nuku, RC30 - Tertia de Vaile Wildy, RC 32 - NZ Heavy Haulage Association, RC 40 - Heidi Downey, and RC 41 – Ron Reid made submissions relating to operational traffic.

³ Newbury District Council v Secretary of State for the Environment [1981] AC 578

A number of submissions (JS 1, NOR 4, NOR 7, and RC 29) consider that the traffic projections underestimate the number of vehicles that will use the proposed state highway. From this basis, JS 1 submits that the adverse effects are likely to be higher than what the AEE indicates, while NOR 4 and NOR 7 submits that this results in an underestimate of the benefits of the project. NOR 4 and NOR 7 are concerned that the lower estimated benefit means that the cost/benefit ratio will not be sufficient and jeopardises the construction of the proposed state highway.

A number of submissions (JS 1, JS 6, NOR 4, NOR 7, NOR 8, NOR 10, NOR 11, and RC 30) was in opposition to the final, proposed design. The submission mainly relates to two broad themes:

- That the Warkworth Interchange is over-engineered/requires too much land
- Provisions for a south Warkworth Interchange

Related RC 40 and RC 41 seeks to extend the northern end point of the proposed state highway to past Ross Road.

Submissions NOR 15 and RC 32 relates to the specific design of the proposed state highway. Submission NOR 15 is considered as part of a request for extending the State Highway 1 from Auckland to Marsden/Whangarei. Notwithstanding, they seek changes to ensure the final carriageway to ensure the smooth and free flowing operation of heavy commercial vehicles (including over-dimension and over-weight vehicles). They also seek roadside rest areas and toilet stops. It also provides comments on tolling as a proposal.

Submission NOR 9 Auckland Transport seek relief to ensure that the designation provides for suitable and safe transitions between the proposed state highway and local roads. They seek a new condition to enable this, but provide an alternative relief seeking detailed drawings from the requiring authority.

Comment:

A Section 9.14 of the requiring authority's Assessment of Environmental Effects (AEE, Attachment 1) addresses the potential adverse effects of operational traffic.

Submissions NOR 4, NOR 7, and NOR 15 all relate to matters that are policy direction on the part of the requiring authority rather than relief that can be granted under the NoR statutory context. I believe that business cases to proceed for large infrastructure projects like the proposed state highway can progress independently of any RMA process. My view is that submission NOR 15's relief relate to central government policy and to the detailed design elements (which are subject to NZTA's own internal processes and guidelines) rather than to the NoR. For completeness, Mr. Black has reviewed the modelling used to predict traffic volume and concludes that it is appropriate and robust. I note that section 6 of the Operational Transport Assessment outlines the sensitivity training for low and high growth scenarios.

Concerns around the Warkworth Interchange, the southern interchange, and extension of the end point of the proposed state highway is discussed in Section 4.9 of this report as they relate to the adequate consideration of alternatives.

Mr. Black's assessment (Attachment 3) was focused on the potential traffic effects of the project. He agrees with the potential operational traffic effects identified in the AEE. Relevantly to JS 1, NOR 4, and NOR 7, Mr. Black concludes that the modelling used is acceptable and robust.

Operational traffic matters are discussed further in section 4.3.4.7 of this report.

4.2.2.10 Historic Heritage

Submissions JS1 – David Mason and Dianne McCallum, NOR 14 – Heritage New Zealand Pouhere Taonga, and RC 29 - Hōkai Nuku made submissions relating to Historic Heritage.

JS 1 references the "Old Coach Road" traversing near the property on 211 Kaipara Flats Road, but does not seek any specific relief.

NOR 14 seeks minor amendments to the proposed draft conditions to provide clarity and improve efficacy between archaeological matters under the Heritage New Zealand Pouhere Taonga Act (2014) and historic heritage matters under the RMA (1991) and to support mana whenua exercising their kaitiaki. They also note recent research on the Warkworth WWII Camps which should be reflected in the requiring authority's Historic Heritage Assessment.

RC29 seeks specific amendments to the proposed draft conditions. They reflect the submission's requests for a proactive approach to the identification of unrecorded sites, and active collaboration in the preparation of the Heritage and Archaeology Management Plan (and others) that give effect to their kaitiakitanga aspirations, obligations and statutory rights.

Comment:

Section 9.10 of the requiring authority's Assessment of Environmental Effects (AEE, Attachment 1) discusses Heritage/Archaeology effects. Ms Ramsay (council's archaeology specialist) provided a specialist assessment on archaeology matters, while Ms. Caddigan (council's built heritage specialist) addressed the built heritage elements. They addressed each submission in their respective final assessments.

Ms. Ramsay notes that the Historic Heritage Assessment (Attachment 1) supporting the AEE already identify sections of the Old Coach Road/Old North Road through field survey and historical research. Ms. Ramsay's recommended changes to the proposed draft conditions will also address this potential historic heritage asset.

With regards to NOR 14, Ms. Ramsay and Ms. Caddigan generally support the intent and included elements of the relief sought in their recommended changes to the draft proposed conditions.

Finally, Ms. Ramsay concurs with the relevant historic heritage matters raised by RC 29 and generally support the changes sought to the proposed draft conditions.

These matters are discussed further in section 4.3.4.5 of this report.

4.2.2.11 Construction air quality

Submissions JS1 – David Mason and Dianne McCallum, JS 8 - JS 9 – Dando Family Trust, JS 10 – Amanda and Erdem Oguz, JS 12 – Donnellan Family and NOR 3 – Transpower New Zealand Ltd made submissions relating to air and dust during the construction period.

JS 1, JS 9 and JS 20 are opposed to the potential adverse air quality effects during the construction of the project. The main reasons for this include:

- Experiences of dust from the P2Wk works, and the need for tighter dust controls;
- Potential health effects of dust, particularly from deposition on roofs for rainwater collection systems; and
- Potential ecological effects of dust.

They seek conditions to manage these effects and identified potential measures such as dust screens and cleaning for houses and vehicles.

NOR 3 seek conditions to ensure the safe operation of electricity infrastructure.

Comment:

A Section 9.9 of the requiring authority's Assessment of Environmental Effects (AEE, Attachment 1) addresses construction air quality.

Mr. Crimmins (council's specialist contamination, air & noise) addressed the submission's broad themes as part of his final technical assessment (Attachment 3). While the resource consents section 42A report (section 13) addresses the discharge of dust contaminants and emissions from construction vehicles, I will note Mr. Crimmins' conclusions here for completeness.

Section 5.3.2 of his assessment states:

I have considered the suggestions for dust mitigation in the Mason & McCallum, Dando, and Transpower submissions. I consider these are generally unnecessary (greater separation distances, dust screens and provision of alternative water supplies), or could be implemented as contingency measures under the CAQMP in the event that visual monitoring and/or complaints indicate a significant dust risk. I consider the dust risks to electrical infrastructure can be adequately mitigated by an EICMP and the CAQMP.

I adopt his assessment and support his conclusions from a planning perspective.

I understand that the requiring authority and Transpower have reached agreement with regards to conditions.

4.2.2.12 Key network utilities and infrastructure

Submissions JS 2 – First Gas Limited, JS 4 – Watercare Services Limited, NOR 2 – Spark New Zealand Trading Ltd, NOR 3 – Transpower New Zealand Ltd, and RC 13 - NZ Refining made submissions relating to the effect of construction on the operation of key network utilities and infrastructure.

The submissions seek to amend the proposed draft conditions to manage potential adverse effects on the integrity of their infrastructure and to enable their continued safe operation. This includes conditions requiring consultation with utility operators during detailed design and to provide clarity on requirements to comply with the relevant designations which provide for the network utilities or infrastructure (for example Refining NZ designation 6500 Petroleum Pipeline: Rural Section and First Gas designation 9101 Taupaki to Topuni Gas Pipeline).

Watercare seeks new conditions to re-route pipes to avoid being covered by new SH1 alignment; and a waiver of the requirement under 176 of RMA needing written consent from NZTA for on-going access to its assets associated with routine operation and maintenance.

Comment:

Section 9.20 of the requiring authority's Assessment of Environmental Effects (AEE, Attachment 1) addresses effects on network utilities. The AEE states that:

Discussions are ongoing with network utility providers. Those ongoing discussions will ensure that works undertaken in close proximity to network utilities and assets will align with the infrastructure providers requirements.

These discussions include First Gas (JS 2), Watercare Services (JS 4), Spark (NOR 2), Transpower (NOR 3) and Refining NZ (RC 13). The requiring authority has communicated that they have reached agreement with Transpower and Spark with regards to conditions.

Section 5.5.3 of the AEE discusses the protection and relocation of existing network utilities. Relevantly for First Gas Ltd, Refining NZ, and Watercare Services Ltd, it states:

The construction of the Indicative Alignment requires the relocation and/or bridging of sections of the fuels and gas pipelines. The pipelines are designated in the AUP(OP). Approval is required pursuant to section 177(1)(a) of the RMA from First Gas and Refining NZ prior to any works occurring in their existing designations. The Transport Agency is continuing to work with First Gas and Refining NZ to obtain approvals regarding the project interface with their assets, and how to address these interfaces.

...

The Indicative Alignment crosses over Watercare's Wellsford watermain and the construction works will be undertaken upstream of the water take points for both Warkworth and Wellsford's reticulated water supply (noting Watercare has transferred from surface water to groundwater abstraction for Warkworth). In addition, the Project proposes to culvert part of a watercourse which the discharge from the Wellsford wastewater treatment plant enters. The Transport Agency will continue discussion with Watercare regarding the management of activities during construction.

From a planning perspective I am of the view that s177(1)(a) provides a clear weighting when considering the relief sought by submission JS 2 and RC 13. In recognising this and First Gas and Refining NZ's role as a key network utility provider and their responsibility to ensure safe and efficient delivery of gas throughout the region, I consider that it is appropriate to adopt their relief to include the conditions below, insofar as it applies to First Gas and Refining NZ's network utilities. This partial acceptance of their relief sought acknowledges the agreement between the requiring authority and the other network operators, and that s176 approval is already required without needing a condition stating as such (and subsequently considerations leading to any such approval including design approach matters raised by RC 13).

- 1. Any activity within 20 metres of the pipeline infrastructure operated by First Gas shall require the written authorisation from First Gas, the authorisation of which is not to be unreasonably withheld.*
- 2. The high-pressure gas pipeline shall be accurately shown and labelled on all design, tender, and construction drawings, and landfill operation and management plans.*
- 3. Any activity within 20 metres of the pipeline infrastructure operated by Refining NZ shall require the written authorisation from Refining NZ, the authorisation of which is not to be unreasonably withheld.*
- 4. The Refinery to Auckland pipeline shall be accurately shown and labelled on all design, tender, and construction drawings, and landfill operation and management plans.*

With regards to JS 4, I am of a similar view that (while the mains in question is not a designation and thus s177(1)(a) does not apply) the existing use of the main, and Watercare Services Ltd's responsibility to safely supply water for community use should be recognised. Therefore, in the absence of confirmation between Watercare and the requiring authority, I adopt the inclusion of the condition below to enable Watercare to have continual access to its watermain systems for routine operation and maintenance.

- 1. The Requiring Authority shall develop in collaboration with Watercare Services, an operating agreement to allow for the routine operation and maintenance of Watercare Services assets within the designation boundary. This operating agreement shall include appropriate notification and access protocols where works are to be undertaken by either network operator on or adjacent to Watercare Services infrastructure within the designations.*

I note that requiring authority may wish to enter into other, non-RMA processes, such as memorandum which can assuage the operational concerns of the above parties. I would prefer such arrangements, but in the absence of a confirmed agreement, I consider the above conditions necessary to manage the effects of the NoR on existing network utilities.

4.2.2.13 Mana whenua

RC 29 - Hōkai Nuku made a submission outlining Mana Whenua views on the project.

RC 29 provided a Cultural Effects Assessment (CEA) and associated submission on the NoR and associated resource consents. Hōkai Nuku is an alliance comprise of mana whenua of the project area. It includes Ngāti Manuhiri, Ngāti Mauku/Ngāti Kauae of Te Uri o Hau, Ngāti Rango of Ngāti Whātua o Kaipara and Ngāti Whātua Iwi. In general terms, RC 29 seeks to amend the proposed draft conditions relating to recognising tikanga, impact on cultural values associated with waterways, vegetation and identified cultural heritage sites.

A key issue for RC 29 is the recognition of the unique status of mana whenua. It is Hōkai Nuku's view that Mana Whenua should be reserved for people who can demonstrate occupation of/ahi kaa relationship with the project area and represents a customary right which should not be extended generically to all groups. Therefore, the definition of Mana Whenua should be amended.

Hōkai Nuku also seeks to be actively involved in both the development and, where appropriate, implementation and monitoring of management plans including any relevant sub management plans. Management plans will incorporate Cultural Indicators developed and monitored by Hōkai Nuku. In particular, Hōkai Nuku wish to collaborate on management plans that give the most effect to their kaitiakitanga aspirations and obligations as well as their statutory rights. Hence, RC 29 identifies the restoration of the position of Iwi Advisor and amendments to proposed draft conditions to facilitate collaboration as important to giving effect to their submission.

Comment:

My understanding is that The requiring authority has met regularly with Hōkai Nuku since 2017 and has worked collaboratively on the project - and intends to continue to do so. I note that the requiring authority may have amended their proposed draft conditions to reflect RC 29's relief sought, but without confirmation, I generally support RC 29 and adopt their recommendation to amend the definition of Mana Whenua. These matters are addressed in detail in section 4.3.4.10.

4.2.2.14 Property purchase / shift in designation boundary

Submissions JS 1 - David Mason and Dianne McCallum, and JS 9 - Dando Family Trust (Edwin and Toni Dando) made a submission on the purchase of / extension of the designation boundary to include their properties.

The submissions seek to have requiring authority extend the designation boundary or to purchase their property. The submissions seek this because they consider that the adverse effects on them results in them unable to continue living on their properties.

Comment:

I note that the submissions are seeking acquisition of their property as a first option, with other relief related to the specific adverse effects. I do not consider the extension of a designation boundary an appropriate response due to the statutory tests of s171 of the Act. My view is that the focus is on the management of adverse effects; the effects cited relate to construction noise, vibration and dust from construction and are addressed in the respective sections.

The requiring authority may wish to enter discussions about potential acquisition with the respective landowners at their discretion.

4.2.2.15 Effects on rural production

Submissions JS 5 - Federated Farmers of New Zealand (Auckland Province) Incorporated, and NOR 6 - Silver Hill Trust made a submission on the effects of the project on farming activities affected by the designation.

The submissions raised concerns about the impact of the project on rural activities on nearby farmland. Of particular note is the issue of reverse sensitivity and construction noise, vibration and dust on livestock, workers, and related residential uses, and the loss of productive soil. The submissions did not seek any specific relief.

Comment:

I note that the consideration of alternatives and assessment of the reasonable necessity will provide context in terms of the appropriateness of the land take required for the project.

I refer to sections 4.3.4.10, 4.3.4.11, 4.10, and 4.11 of this report where the concerns raised by the submitter are discussed in detail.

4.2.2.16 Proposed Auckland Regional Landfill

Submissions NOR 14 – Waste Management New Zealand Ltd made a submission on the interaction between the NoR and the proposed Auckland Regional Landfill in the Wayby Valley area.

4.71ha of Waste Management New Zealand Ltd's 1020ha land holdings within the Wayby Valley area fall within the proposed designation boundary (near the proposed Hōteo Viaduct). NOR 14 is supportive of the project, but retains concerns over the following:

- Maintaining access to Waiteraire stream to carry out ecological mitigation and stream enhancement on their land;
- Accommodating both projects during construction periods within similar areas;
- Access to Waste Management New Zealand Ltd's sites during construction period of the project; and
- A proposed public car park and pedestrian access on its landholdings that fall within the NoR

NOR 14's relief generally seek engagement with the requiring authority and signal the submitter's desire to come to agreement with regards to the above matters. The only new condition sought is to provide access for planting along Waiteraire stream. I note that NOR 14 provides an alternative relief of a separate agreement in lieu of a new condition for this.

Comment:

I note that the requiring authority does not propose mitigation or enhancement measures in areas which may cause conflict with Waste Management New Zealand Ltd. With regards to the relief sought by NOR 14, I consider the concerns raised to be property matters most appropriately addressed via side agreements between the parties.

My view is that the requiring authority should begin engagement with Waste Management New Zealand Ltd as part of their project consultation and no additional response is needed at the NoR stage of this project.

4.3 Effects on the environment**4.3.1 Effects to be disregarded – trade competition**

I do not consider that there are any trade competition effects that should be disregarded.

4.3.2 Effects that may be disregarded – permitted baseline assessment

The permitted baseline refers to the adverse effects of permitted activities on the subject site.

The Environment Court in *Beadle v Minister of Corrections* A074/02 accepted that the obligation to apply permitted baseline comparisons extended to Notices of Requirement. In *Nelson Intermediate School v Transit NZ* (2004) 10 ELRNZ 369, the Court accepted that the permitted baseline must define the “environment” under section 5(2) (b) and (c) and from that section 171(1). When considering the adverse environmental effects of a proposal, the effects may be considered against those from permitted baseline activities. As the effects resultant from permitted baseline activities may be disregarded, only those environmental effects which are of greater significance need be considered.

In *Lloyd v Gisborne District Council* [2005] W106/05, the Court summed up the three categories of activity that needed to be considered as part of the permitted baseline as being:

1. What lawfully exists on the site at present
2. Activities (being non-fanciful activities) which could be conducted on the site as of right; i.e., without having to obtain a resource consent (see for example *Barrett v Wellington City Council* [2000] CP31/00).
3. Activities which could be carried out under granted, but as yet unexercised, resource consent.

Application of the permitted baseline approach is optional depending its merits in the circumstances of the NoR.

In my view, the permitted baseline has limited relevance as the project corridor is on various rural zones which generally do not envision projects of this scale and complexity. Notwithstanding, I have identified the matters below for comment.

4.3.2.1 Noise and vibration

Operational noise from traffic on roads (including motorways) are regulated in the AUP(OP) by Chapter E25.6.33 Noise levels for traffic from new and altered roads. It identifies all new roads that are within scope of NZS6806:2010 Acoustics – Road traffic noise – New as a permitted activity. In my view this is relevant when considering the future operations of the proposed state highway.

4.3.2.2 Matariki Forest

Section 9.1 of the AEE (Attachment 1) notes that Matarki Forest will be harvested prior to the construction of the project. The AEE assumes clear-felled forest land as the environment when assessing effects on Terrestrial and Freshwater Ecology. It notes that the harvest of the forest is a permitted activity under the National Environmental Standard for Plantation Forestry.

I agree with this assessment.

4.3.2.3 Demolition of a dwelling (Built heritage)

Table H19.8 of the AUP(OP) identifies the demolition of buildings are a permitted activity within rural zones (activity A58). This is relevant insofar that it may be argued as relevant in considering the Historic Heritage “environment” within the project corridor. While there are no scheduled or protected buildings, Ms. Caddigan (Technical memo – Built Heritage, Attachment 3) and requiring authority’s Historic Heritage Assessment (Attachment 1) identify structures which are likely to contain historic heritage value. The designation process provides the opportunity to avoid, remedy, or mitigate adverse the effects on these potential historic heritage values. Similarly, having regard to s6(f) I am of the view that the permitted baseline is irrelevant insofar as it applies to historic heritage.

4.3.3 Positive effects

Section 2.5 identifies the benefits while section 9.1 of the AEE (Attachment 1) describes the positive effects of the project in detail. They are summarised as:

- Improved safety performance compared to the existing SH1;
- Improved access through reduced journey times for general traffic and freight;
- Improved resilience through travel time reliability;
- Increased capacity within the SH1 corridor;
- Improved route security by providing an alternative route resilient to incidents
- Improvements to the amenity of Wellsford and Te Hana by reducing heavy truck and general traffic movements through the townships, including improved air quality and reduction in noise levels and improving walkability;
- Improvements to social well-being to the wider Auckland and Northland communities by improving connections;
- Improved accessibility between Auckland and Northland with associated economic benefits;
- Increased economic activity in Auckland and Northland during construction;
- Improved economic performance resulting from improvements in journey time, resilience and reliability;

- Integration of ecosystems providing greater ecological resilience; and
- Improved adaptive capacity of ecosystems through pest and weed control

Mr. Black has reviewed the assessment from a traffic perspective (Attachment 3) and agrees with the requiring authority's conclusions for travel time savings, travel time reliability, and safety improvements. I adopt Mr. Black's assessment.

Mr. Rossaak has reviewed the assessment from a terrestrial ecology perspective (Attachment 3). Mr. Rossaak generally agrees with the requiring authority's conclusion in terms of integration and adaptive capacity.

Based on Mr. Black's and Mr. Rossaak's conclusion and with my own consideration of other matters, I agree with this assessment of the positive effects of the NoR.

4.3.4 Adverse effects

Effects on the environment are addressed in section 9 (pp 164 – 372) of the AEE (Attachment 1). The following discussion addresses effects in the same order they are addressed in the AEE. The relevant specialists reports on behalf council are referred to and are included as attachments (Attachment 3) for reference. Submissions have also been considered and are referred to where relevant.

4.3.4.1 Terrestrial and freshwater ecology

Requiring authority AEE

Effects on terrestrial and freshwater ecology are addressed in section 9.5 of the AEE (Attachment 1) which refers to the requiring authority's technical report *Ecology Assessment Report* by Sarah Flynn, Katrina McDermott, Georgia Cummings, Lee Shapiro (Boffa Miskell Ltd). Additional information was provided in the section 92 response, Part 2 dated 3 August 2020 (Attachment 2). I have focused solely on terrestrial ecology as the resource consents 42A report will address freshwater ecology matters.

The Indicative Alignment within the proposed designation boundary will clear all or part of approximately 27 bush and wetland ecological features, comprising 13 ha of forest remnants. Of these, approximately 1.5 ha are of high/very high ecological value.

Construction of the project may have potential adverse effects on the habitat of birds and bats which rely on patches of habitat throughout the landscape as well as on species which may remain in environments that have been converted to rural production (e.g. lizards in patches of woody debris, kauri snails and Hochstetter's frogs in pine plantations).

Operation of the project may cause disturbances to fauna from light and noise, while the state highway itself will become a barrier to some species (i.e. lizards).

Overall, the requiring authority's ecologists consider that with proposed mitigation measure, the ecological effects of the project will be small. They further conclude that in some instances this may result in an overall enhancement of ecological diversity, function and connectivity in the region.

Specialist review

The effects on terrestrial ecology have been assessed by council's consultant ecologist Andrew Rossaak. He has provided a response on 25 August 2020 which is included in Attachment 3. Mr. Rossaak largely agrees with the applicants reporting of existing ecological values for those sites that were able to be accessed for field survey.

Mr. Rossaak helpfully sets out his assessment into two broad categories:

1. Outstanding matters that, in his view needed to be addressed; and
2. Technical matters to note, which does not fundamentally affect Mr. Rossaak's technical conclusions

Mr. Rossaak identifies issues with the proposed draft conditions with regards to the offsetting process. He stressed the need for robust and transparent assessment and calculation of appropriate offset ratios following detailed design to provide additional certainty that the offsets will achieve the outcome of 'no net loss'. He highlights:

It is noted that similar NZTA applications are progressing with transparent ecological accounting with maximum impact areas, such as Te Ahu a Turanga: Manawatū Tararua Highway – Designation Condition 18. In this case, Environmental Compensation Ratios range from 1.5:1 up to 12:1 as well as additional species-specific compensations (at ratios of 100:1) for effects.

Mr. Rossaak's view is that a 'flat' ratio of replanting doesn't adequately ensure an appropriate ecological outcome – that any calculation method must account for existing habitat and biodiversity at any offset sites. The exclusion of the impacts of realigned forestry track was another cause of concern.

Relatedly, the ability to offset potentially impacted ecology within the proposed designation boundary was a point of disagreement. He notes:

The application material provides a sensitivity analysis on the level of effects, but not on the ability to offset these within the proposed designation, further, no assessment of what a 'worst case scenario' may entail or ability to offset this is provided.

The assessment provides for the activity to commence following the harvesting of the forest in the Dome Valley. Ecological impacts will be different if harvesting is not undertaken prior to the start of the activity....

Mr. Rossaak identified the need for protection in perpetuity of the biological/ecological offset to ensure any long-term benefits will eventuate. Similarly, he is of the view that a robust monitoring and adaptive management framework to sustain long-term benefits of the proposed offsetting.

Mr. Rossaak was concerned the about the lack of suitable habitat identified to receive any Hochstetters frog translocations. It is his view that there is uncertainty if there is such habitat within the boundary of the proposed designation.

Mr. Rossaak also had concerns on the AEE's consideration of the impact of bridges. Namely, that the potential for vegetation clearing for access, and rain shadow and shading effects has not been appropriately addressed.

With regards to technical matters of note identified by Mr. Rossaak I have attempted to summarise them to avoid duplicating the matters set out in his final assessment:

1. The requiring authority's characterisation of their proposed actions as a 'mitigation package', Mr. Rossaak's view is that most of the proposal constitute an 'offset';
2. Consolidation of ecological values (based on EIANZ guidelines): very high, high, moderate, and low, into two offset ratios by the requiring authority. These being 1:3 'moderate and low' and 1:6 'high and very high'.
3. Potential uncertainty emerging from the use of management plans
4. Several matters relating to fauna, these being: consideration of specific habitat requirements as part of offsetting; the success rate of translocating species; faunas sensitive to lighting; faunas susceptible to dust and noise;
5. Impact of edge effects
6. Limits of the assessment due to the lack of field survey
7. Integration of the proposed flyway mitigation
8. Covenanted areas within the designation
9. Risk from argentine ants
10. Due to the long lapse date, the need for best practice and the re-survey of ecological values closer to the time of project works; and
11. Minor discrepancies in the measurements showing impacts on native vegetation - between that reported in Appendix H of the Ecological Assessment and those on the Construction Water plans provided.

Overall, Mr. Rossaak concludes in his assessment that there is sufficient information to understand, at a board scale, the ecological values, and likely adverse effects. While he retained reservations on the proposed draft conditions; it is his view that the proposed draft conditions, subject to changes to provide more certainty on the relevant outcomes, can appropriately manage any adverse effects.

Planning review

Mr. Rossaak's technical memo provides some narrative on 'mitigation hierarchy'; his view is that many of the 'mitigation package measures' proposed by the requiring authority are not 'mitigation' but rather offset (or environmental compensation). His main reason is that the proposed actions '*do not alleviate, nor abate, nor moderate the severity of the impacts*'.

The key planning issue emerging from this matter identified by Mr. Rossaak is whether it is necessary to unbundle the requiring authority's proposed measures between 'mitigation' or 'offset'. My view is that, to a degree, the partition sought by Mr. Rossaak isn't necessary in that assessment of the 'mitigation package' as a whole provides sufficient understanding as to whether the adverse effects of the project can be appropriately managed.

From a planning perspective, I differ from Mr. Rossaak's view on the matter of the realignment of the forestry tracks. While I am mindful that there are relevant ecological values associated with the cycle of harvest and planting of forestry plantations, I agree with that the approach outlined in the AEE as the most appropriate manner to deal with this issue. I note that roads meeting the conditions of the NESPF are a permitted activity. The AEE states:

The NESPF is relevant to the Project as part of the proposed designation is located within a plantation forestry area. Given this is a commercial plantation forest, consent (if required) is not being sought as part of this Application as the relevant areas may be cleared by the forestry operator prior to construction. If consent is required for forestry removal to facilitate construction of the Project, the Transport Agency will undertake the works in accordance with the NESPF provisions, including seeking any consent approvals prior to commencement of construction if necessary.

Notwithstanding my comments above, I have largely adopted Mr. Rossaak's assessment. He has recommended numerous changes to the proposed draft conditions reflecting the concerns in his assessment. I note that while Mr. Rossaak's assessment identifies 'outstanding matters', I am of the view that his recommended changes to the proposed draft conditions sufficiently accounts for these matters and is not reliant on additional information from the requiring authority.

For ease of use, my comments on his recommended changes are formatted as below:

Recommendation	Planning comment
Changes to condition 54 to strengthen the Ecological Outcomes which underpins the Ecological Management Plan. This includes: - having regard to the time delayed nature of the benefits by requiring considerations for management in perpetuity, - take into account operational and maintenance matters - considerations for light, dust, and noise	I adopt Mr. Rossaak's recommendation. I consider the recommended changes will provide certainty that the mitigation regime proposed will achieve its stated long-term benefits by ensuring considerations are applied through the whole life-cycle of the project. This also reflects relief sought by JS 7.
Changes to condition 55 to include requirements in the preparation of the Ecological Management Plan (EMP). These include: - to require Council certification of EMP and requiring adequate time frame for council review - additional criteria to provide certainty in terms of how the methodology will achieve the ecological outcomes - monitoring and management matters to ensure long-term benefits can be safeguarded	I adopt Mr. Rossaak's recommendation Certification will provide assurances that the positive effects of the project stay will occur as anticipated. I note that the certification process may also address some of the concerns raised in submissions JS 3 and JS 7. However, I note that the ecological outcomes are already identified in proposed draft condition 54, likewise, it is inappropriate to reference standards if they are not clearly identified. Therefore, I have amended to remove references to defined ecological outcomes and made clear that the EMP should identify the performance measures necessary to achieve the ecological outcomes.

	This also reflect relief sought by JS 7.
Changes to condition 55.b to provide a quantum as to encroachment onto areas of high and very high ecological value and moderate and low ecological value.	I adopt Mr. Rossaak's recommendation. I note that these figures reflect the requiring authority's own calculations provided in their section 92 response Part 2 (Attachment 2). This amendment will provide a 'bottom-line' in terms of effects on ecological sites.
Delete condition 56 as the standards cited relate to erosion rather than ecological values.	I adopt Mr. Rossaak's recommendation.
Changes to condition 57 to remove the ability for the requiring authority to consider 'no comments' from council if it hasn't received them within 20 working days.	I adopt Mr. Rossaak's recommendation.
Changes to condition 58 on Fauna habitat and flyway mitigation area to: - strengthen requirement for fauna habitat and flyway mitigation area - require such provisions at the start of project works rather than during construction works - provide a maintenance plan	I adopt Mr. Rossaak's recommendation.
Changes to condition 59 on Fauna habitat and flyway mitigation area to improve further clarity on the quantum of requirement.	I adopt Mr. Rossaak's recommendation.
Changes to condition 62 on Restoration planting and habitat rehabilitation to provide an alternatively methodology for determining appropriate planting / ecological off-set measures.	<p>I adopt Mr. Rossaak's recommendation. The revised accounting provides transparency and certainty of outcome insofar that there is additional assurance that ecological values will be managed rather than a 'flat' quantum of planting.</p> <p>The revised offsets methodology accounts for existing habitat and biodiversity allowing for a measure of overall gain in ecological biodiversity, habitat or functionality.</p> <p>I consider that the revised methodology appropriately ensures that the ecological effects of the project is appropriately managed.</p>
Changes to condition 64 on Restoration planting and habitat rehabilitation to reflect recommended changes to condition 62 and to provide for monitoring regime.	I adopt Mr. Rossaak's recommendation, noting the previous discussion on the role of monitoring in providing assurances that the anticipated long-term benefits of the proposal will eventuate.

<p>Changes to condition 65 on Restoration planting and habitat rehabilitation to:</p> <ul style="list-style-type: none"> - reference the EMP instead of the ULDMP - bring forward the planting date - require protection or covenant mechanism for any restoration planting 	<p>I adopt Mr. Rossaak's recommendation. However, I consider that the EMP and ULDMP are complimentary insofar that they will both affect any future proposed restoration planting. Therefore, I have amended Mr. Rossaak's recommendation to retain reference to the ULDMP.</p> <p>Recommended condition 65 (c) requires protection mechanism or covenant. I note that this isn't appropriately reflected in 65 (c) (i) which solely refers to covenants, therefore, I have amended it to include reference to any other protection mechanism.</p> <p>This also reflect relief sought by JS 7.</p>
<p>Changes to condition 66 on Long-tailed bats to ensure any subsequent avifauna surveys are reflected in an updated ecological assessment</p>	<p>The additional requirement for the survey to be reflected in an updated ecological assessment does not add to the certainty of the outcome, nor does it materially change the efficacy of the condition. Therefore, I do not adopt Mr. Rossaak's recommendation.</p>
<p>Changes to condition 67 on Long-tailed bats to:</p> <ul style="list-style-type: none"> - require assessment and avoidance of effects on a population level - require certification - include an advice note to require accordance with a Wildlife Act authority 	<p>I adopt Mr. Rossaak's recommendation. The population level assessment provides additional certainty on methodology and subsequent outcomes of the condition. However I note that the EMP is already recommended to be certified by council, therefore I have amended 67.d to remove reference to certification. This also reflect relief sought by JS 7.</p>
<p>Changes to condition 68 on Avifauna to ensure any subsequent avifauna surveys are reflected in an updated ecological assessment</p>	<p>The additional requirement for the survey to be reflected in an updated ecological assessment does not add to the certainty of the outcome, nor does it materially change the efficacy of the condition. Therefore, I do not adopt Mr. Rossaak's recommendation.</p>
<p>Changes to condition 69 on Avifauna to include all potentially impacted wetlands and to require certification of any additional survey.</p>	<p>I adopt Mr. Rossaak's recommendation. I note that the EMP is already recommended to be certified by council, therefore I have amended 69 (c) to remove reference to certification.</p>
<p>Changes to condition 70 on Land snails, copper skinks, forest geckos to provide consistency with the Wildlife Act</p>	<p>I adopt Mr. Rossaak's recommendation.</p>
<p>Changes to condition 71 on Land snails, copper skinks, forest geckos to:</p> <ul style="list-style-type: none"> - reflect the need for suitable habitat not just a suitable site to accommodate any such species - reflect recommended changes to condition 70 	<p>I adopt Mr. Rossaak's recommendation.</p>

Changes to condition 72 on Hochstetter's Frog to: - appropriately record any assessment - appropriately reflect that Hochstetter's Frogs as amphibious and therefore its habitats are not only within waterways	I adopt Mr. Rossaak's recommendation. However, I did not adopt his recommendation to update the ecological assessment as it did not add to the certainty of the outcome, nor does it materially change the efficacy of the condition
Changes to condition 73 on Hochstetter's Frog to: - correct reference to Department of Conservation staff - reference any other experts to review recommendations for capture and relocation of the frogs - include the possibility of releasing into habitats outside of the designation boundary if it is appropriate	I adopt Mr. Rossaak's recommendation. The changes reflects the uncertainties around the potential adverse effects on Hochstetter's Frog habitats and provides additional robustness for the capture and relocation process. This also reflect relief sought by JS 7.
Changes to condition 74 correct reference to council	I adopt Mr. Rossaak's recommendation.
Changes to condition 75 include council as part of consultation on <i>At Risk or Threatened flora and fauna discovery protocol</i> and correct reference to Department of Conservation staff	I adopt Mr. Rossaak's recommendation. This reflects relief sought by JS 7 I amended the reference to Department of Conservation Operations Manager to be consistent with JS 7.
Changes to condition 76 to align biosecurity plan requirements to occur prior to project works rather than construction, correct reference to Department of Conservation staff, and include Argentine Ants.	I adopt Mr. Rossaak's recommendation. This reflects relief sought by JS 7
Changes to condition 77 to align biosecurity plan requirements with additional requirements	I adopt Mr. Rossaak's recommendation. This reflects relief sought by JS 7
New condition to ensure the avoidance of adverse effects on ecological value through bridge and tunnel to be maintained in the final design	I consider this recommendation too broad to constitute an effective and efficient condition. It is my view that the actual effects being managed relate to matters addressed more efficiently by the other conditions. i.e. the Ecology Management Plan process, ongoing protection and maintenance of ecology outcomes

As a matter for the commissioners to consider, the requiring authority has indicated a preference to consolidate terrestrial ecology and freshwater ecology conditions into a single bundle and attach them to the resource consents application. This issue was also raised by submission JS 3.

I note Mr. Rossaak is of the view that they should be duplicated across both the designation and associated resource consents. In the absence of further evidence or advice from the requiring authority as to the procedural mechanics of this, I have turned my mind to this issue.

In my view, I consider the following as relevant matters on this issue.

1. General legal principles

2. Link between effect and condition

3. Efficacy

General legal principles

Ss 30 and 31 of the RMA respectively describes the functions of regional and district councils. In this regard, the key planning issue is that whether this partition extends to conditions insofar that regional resource consents and designations similarly follow this distinction. In this instance, the exercise could be argued as academic given that Auckland Council is a unitary authority and exercise functions under both ss 30 and 31. With regards to the resource consent applications, I note that the requiring authority applied for consents which covers both regional and district council functions; if it is indeed bundled, the clarity needed to delineate between the two functions diminishes even further.

Link between effect and condition

The Newbury principles states that a condition must be:

- be for a resource management purpose, not for an ulterior one;
- fairly and reasonably relate to the development authorised by the consent to which the conditions attach; and
- not be so unreasonable that a reasonable planning authority, duly appreciating its statutory duties, could not have approved it.

The Supreme Court in *Waitakere City Council v Estate Homes Ltd* modified the second element of the Newbury principles⁴, stating:

We consider that the application of common law principles to New Zealand's statutory planning law does not require a greater connection between the proposed development and conditions of consent than that they are logically connected to the development.

In the case of the proposal, it is my view that there is a clear logical link between the proposed draft conditions and the effects from both the resource consent and the designation. Table 6-3 of the AEE identifies the type of consents being sought. Relevantly, I consider from a planning perspective that disturbances associated with earthworks, vegetation alteration, structures on, under, or over bed or rivers, streams, and wetlands; diversion of permanent and intermittent streams; and stormwater discharges will have potential adverse effects on both terrestrial and freshwater ecology. The operation and maintenance of the proposed state highway enabled by the designation has been demonstrated to have potential adverse terrestrial ecological effects.

⁴ *Waitakere City Council v Estate Homes Ltd* [2007] 2 NZLR 149

It may again be a moot point as the logical link can be demonstrated between either application. It is my view that there is no clear partition between the development associated with the respective applications and what effects the conditions are seeking to manage.

Efficacy

JS 3 submits:

Forest & Bird has some concerns about how the matters are split. For example a consent is required for vegetation removal but there are no terrestrial ecology conditions in the consent conditions. They are found in the NOR conditions. Having the conditions split like this does not allow the decision maker to make a fully informed decision and consider which effects will actually be mitigated particularly since many of the conditions will only be met through the Outline Plan of Works. The Council has only limited scope to disapprove of an Outline Plan of Works through an appeal process.

I agree with the general intent behind JS 3 comments on the lack of clarity connecting the activity with the management method. However, I note that conditions can be altered under s 127 of the Act.

I see merit in Mr. Rossaak's suggestion of having the proposed draft terrestrial and freshwater ecology condition be applied equally across the designation and resource consents application. The effects on the environment itself does not necessarily respect the statutory partition between resource consents or designations. For example, Hochstetter's frogs as an amphibious specie crosses both terrestrial and freshwater environments; likewise, planting will have effect across the two spheres.

Without prejudicing the procedural mechanism to do so, I believe applying the conditions to both consent and designation is one way of addressing the matters discussed above. This achieves the legal principles set out by case law and is effective in providing transparency and certainty of outcome for the effects being managed.

4.3.4.2 Construction Traffic

Requiring authority AEE

Effects of construction traffic are addressed in section 9.7 of the AEE (Attachment 1) which refers to the requiring authority's technical report Construction Traffic Assessment by Amanda Klepper and Kerstin Rupp (Jacobs New Zealand Limited).

The AEE assesses the potential effects associated with construction effects on the basis that construction will commence in approximately 2030. Potential traffic effects result from haulage, increase in traffic volume, lane closures, redirections, affecting travel times and potentially safety.

The AEE states:

The construction of the Project will require modification of thirteen local roads and one crossing of SH1. Of the local roads that intersect with the Project, four are intended to be realigned to avoid crossing the alignment (Wyllie Road, Carran Road, Phillips Road, and Vipond Road). Nine roads (eight local roads and one existing SH1 crossing) will pass over or under the Project with some of these also requiring realignments of sections of the road.

The requiring authority proposes to manage potential adverse effects from construction traffic through:

- The preparation and implementation of the Construction Traffic Management Plan (CTMP).
- Temporary Traffic Management (TTM) at locations where construction activities will influence existing traffic, in accordance with the Code of Practice for Temporary Traffic Management (CoPTTM).
- the implementation of Site-Specific Traffic Management Plans (SSTMPs) for localised construction traffic effects

Overall, the requiring authority's transport specialists consider that with proposed mitigation measures, the effects of construction traffic on the existing network are expected to be minimised as much as practicable to an acceptable level.

Specialist review

The council's consultant transport specialist Gary Black has reviewed the NoR and provided a response on 28 August 2020 which is included in Attachment 3.

Mr. Black considers that the use of Construction Traffic Management Plan and Site Specific Traffic Management Plans as appropriate methods to mitigate potential adverse construction traffic effects. He also concurs that the use of a '*broad overview of an indicative construction methodology*' as being consistent with large projects of this type.

Mr. Black's assessment analyses the potential construction traffic effects in the three sections identified in the AEE and Operational Traffic Assessment's assessment. He considers that the operational traffic assessment has sufficiently identified the potential adverse effects for all sections. However, Mr. Black highlights.:

- In the southern section construction traffic will add to current delays due to capacity issues;
- In the central section there are potential safety matters relating to heavy construction vehicles turning out of the Site Access Points into two-way state highway traffic
- In the northern section there are, likewise, potential safety matters relating to heavy construction vehicles and suitability of the local roads to access the site

As noted in section 4.2.2.8 Mr. Black considers that the use of a Construction Traffic Management Plan is an appropriate measure to manage the potential adverse effects from construction traffic. He considers that the matters above can also be addressed via such management plans. He also notes the practical and functional need for heavy construction vehicles to use the local roading network.

Overall, Mr. Black generally agrees with conclusions of the AEE. Mr. Black's assessment addressed the site-specific matters raised in submission JS 1. He concludes that in key areas around Kaipara Flats Rd, Hill Rd and Woodcocks Rd additional intervention is needed to manage potential safety effects caused by construction traffic, and to minimise disruptions to the local road network.

Planning review

The potential adverse effects associated with construction traffic is one of the key concerns for residents near the project. However, this will need to be balanced by the operational need of large infrastructure projects for construction traffic. Likewise, the temporary (albeit extended) nature of potential adverse traffic effects must be weighed in the broader context of the benefits of the efficient development of infrastructure.

Mr. Black identifies the need for Site Specific Traffic Management Plans for key areas such as around Kaipara Flats Road, Woodcocks Road, Carran Road and where the potential adverse effects are likely the greatest. Mr. Black also recommends restricting full closures of Woodcocks Rd and Kaipara Flats Road to night-time, restricting the flow of heavy construction vehicles on the southern haul route to anticlockwise and outside of evening peak hours, and to control right turn movement of heavy construction vehicles. It is his view that these are needed to improve safety and to minimise disruption to existing road users. Likewise, Mr. Black recommends restricting staff travel at Hill St outside of pickup and drop off hours to minimise potential adverse effects on Warkworth Primary School.

While some of the interventions and/or management techniques identified in Mr. Black's assessment may naturally occur, the requirement of specified Site Specific Traffic Management Plans and identified matters provides the certainty that the potential adverse traffic effects will be appropriately managed.

The requiring authority proposed a draft condition for the repair and maintenance of local roads damaged by heavy construction vehicles entering or exiting the construction site. Mr. Black recommended a new proposed condition to extend this to the maintenance of haul routes *in general* to address potential safety and traffic disruption concerns. I adopt this recommendation, though I note that the requiring authority may have separate agreements with Auckland Transport that will address this matter and welcome any additional information on this from either party.

In considering Mr. Black's recommendations I am mindful that the construction methodology remains indicative until procurement for contractors are completed. I accept his recommendations and have translated them to recommended changes to the proposed draft conditions I have tried to balance the need between maintaining flexibility as a matter of practicality for the requiring authority and to appropriately manage the potential adverse effects of construction traffic. In doing so, I consider that the matters raised by JS 1, JS 8, JS 9, JS 10, NOR 6 and NOR 12 will also be addressed by the recommended changes to the proposed draft conditions.

NOR 9 submits largely to support the retention of proposed draft conditions managing construction traffic effects and minor amendments to the wording to provide clarity and the correct references to Auckland Transport documents. From a planning perspective, I adopt these recommendations because it is my view that they add to the usability of the proposed draft conditions and as matters of administrative correction.

4.3.4.3 Construction Noise and Vibration

Requiring authority AEE

Effects of operational noise and vibration are addressed in section 9.8 of the AEE (Attachment 1) which refers to the requiring authority's technical report Construction Noise and Vibration Assessment by Jesse Ngo (Jacobs New Zealand Ltd). Additional information was provided in the section 92 response, Part 3 dated 5 August 2020 (Attachment 2).

The requiring authority uses New Zealand Standard NSZ6803:1999 Acoustics – Construction Noise (NZS 6803) to assess potential noise from construction of the project. NZTA's *State highway construction and maintenance noise and vibration guide* provides the vibration criteria.

The operational noise and vibration assessment concludes that noise and vibration levels associated with the construction of the project, even if within applicable criteria, will noticeably disturb the amenity of surrounding sensitive uses (Protected Premises and Facilities, PPF) especially when compared with existing low levels. Predictions using typical construction equipment show that night work will exceed noise and vibration criteria, while daytime works can comply in most cases, with small exceedances possible.

The requiring authority proposes the use of a Construction Noise and Vibration Management Plan (CNVMP) which will identify and specify mitigation methods to manage the effects of construction noise and vibration. The CNVMP function in conjunction with proposed noise and vibration criteria.

Overall, the requiring authority's acoustics specialists consider that with proposed mitigation measure construction noise and vibration effects can be appropriately managed.

Specialist review

The council's consultant acoustic specialist Siiri Wilkening has reviewed the NoR and provided a response on 7 August which is included in Attachment 3. Ms. Wilkening agrees that the use of a management plan to manage potential adverse construction noise and vibration effects as appropriate for a project of this scale. She also considers that:

- The standards and guidelines used for the assessment of construction noise and vibration (raised by JS1);
- Assumptions around construction activities and the noise and vibration levels associated with the associated equipment;
- Identification of affected receivers; and
- The general and specific mitigation measures

are generally appropriate for projects of this nature.

Relevantly for submissions JS1, JS 9, JS 10, NOR 6, NOR 8, and NOR 12, Ms. Wilkening notes that construction noise is generally higher than other noise sources. This will be particularly noticeable in areas with low ambient noise (such as the areas where the submitters reside) and may cause annoyance. She further notes that such effects, while often unavoidable in large constructions sites (such as those for this project), can be reduced with appropriate onsite management and mitigation. Ms. Wilkening identifies recommendations to the proposed draft conditions which provide additional certainty of outcome notwithstanding the inability to predict detailed construction noise levels due to the route-protection nature of the proposal.

While Ms. Wilkening considers that a CNVMP as an appropriate tool, she recommends amendments to the proposed draft conditions to strengthen the ability of the CNVMP regime to achieve the relevant management outcomes. The main change is to set out conditions which outlines the steps if compliance is not practicable, and further matters for inclusion in the CNVMP.

Overall, Ms. Wilkening considers that the adverse effects from construction noise and vibration effects can be appropriately managed, subject to recommended changes to the proposed draft conditions.

Planning review

A point of contention for submissions JS1, JS 9, JS 10, NOR 6, NOR 8, and NOR 12, is the reasonableness of noise.

In response to JS 1, Ms. Wilkening's assessment states:

JS1 quotes S16 of the RMA and states that a construction noise limit of 70 dB LAeq cannot be reasonable based on the effects (e.g. that one would not want to spend time outside). The submission also considers that "reasonable" should be the same for construction and traffic noise (i.e. 57 dB LAeq). This is not correct. The definition of "reasonable" depends on the circumstances: for construction, which is temporary (even though in case of a road this would extend over several months), the reasonable noise level would be generally higher than for ongoing (permanent) noise such as traffic on a road.

Standards and guidelines make allowance for these differences. I also note that construction will not occur for the entire period in the vicinity of one house but will move along the alignment. Therefore, while the overall construction period is years, the greatest effects would be when works are close, which would be of limited duration. As discussed above, the implementation of the CNVMP will ensure that effects are kept to a reasonable level.

Ms. Wilkening's response to JS 1's general comment on construction noise assessment is also relevant:

It is also correct that at construction noise levels above 65 dB LAeq people are less likely to choose to spend time outside. Construction noise limits protect indoor amenity and assume that people will be inside and close their windows to partially alleviate effects during high noise periods. Alternatively, people would move to a quieter room or side of the house, away from construction, which will also enable opening of windows on that side.

It is my view that Ms. Wilkening has identified the salient points in that the test of reasonableness will be dependent on the facts of the circumstance. In this case, the temporary construction effects cannot be fairly equated with the permanent effects from the operation of the project. Likewise, the potential adverse noise and vibration effects during construction must be considered in the context of the broader envelope of effects arising from the project. I consider it reasonable to expect a reasonable person to remain indoors during high noise period. Conversely, I consider it unreasonable to expect no-effects on the environment insofar that one can expect continual, unfettered access to outdoor environs throughout the construction periods. I am also mindful that Ms. Wilkening recommends changes to the proposed draft conditions to provide further certainty in terms of outcomes which will hopefully alleviate some of submitters' concerns.

Ms Wilkening provides her detailed reasonings for her recommended changes to proposed draft conditions 26, 27, 28, 29, and 30 in her final assessment. I will address all these conditions as group because they jointly relate to alternative pathways if compliance is not practicable.

Ms Wilkening identified a gap into the proposed draft conditions whereby there are no steps in place if compliance is not practicable. This includes amending condition 26 to cross-reference conditions 28 and 29. Likewise, it provides for consultation of owners and occupiers of sites subject to exceedance of noise or vibration criteria. These changes will also address JS 4 and NOR 3. Introduction of accordance to DIN4150-3 as a standard for vibration will protect the network utilities/assets operated by Transpower and Watercare.

Ms. Wilkening recommends changes to condition 28 to provide for a more robust management regime and further certainty of achieving the expected outcomes of managing adverse construction noise and vibration effects.

As a matter of administrative change, Ms. Wilkening recommends a change to condition 49.b.xi to amend the wording "noise attenuation" to "noise barriers" as while noise attenuation can be various things, in the instance of the UDLF refers to noise barriers only.

I adopt Ms. Wilkening's assessment. I agree with Ms. Wilkening and taken together, I consider that Ms. Wilkening's recommended amendments to the proposed draft conditions are appropriate as they provide certainty to the management plan approach. The recommended changes will ensure that potential adverse effects from construction noise and vibration are appropriately managed.

4.3.4.4 Construction Air Quality

Requiring authority AEE

Effects of construction air quality are addressed in section 9.9 of the AEE (Attachment 1) which refers to the requiring authority's technical report Air Quality Report by Charlotte Moore (Jacobs New Zealand Limited).

The AEE identifies that the construction effects of the project will generate dust that may impact sensitive uses (like dwellings) close to construction areas within the designation boundary. Vehicle movements on unsealed roads and 'trackout' (the movement of dust and dirt from a site onto the road network, where it may be deposited and then re-suspended by other) will cause potential effects to spread beyond the immediate proposed designation boundary.

The requiring authority proposes to use a Construction Air Quality Management Plan (CAQMP) to identify mitigation measures to manage dust effects during construction. This can include watering roads during dry periods, stabilisation after works, and sealing of non-sealed roads.

Overall, the AEE considers that the CAQMP will appropriately manage potential dust effects during construction and that it will be minor.

Specialist review

The council's senior specialist – Contamination, Air & Noise, Paul Crimmins has reviewed the NoR and provided a response on 21 August which is included in Attachment 3.

Mr. Crimmins considers that the Air Quality report provides a detailed assessment of potential dust effects and appropriately employs the relevant guidance. Mr. Crimmins's view is that notable health effects are unlikely to occur from dust emissions due to type of dust likely to be discharged during works.

Mr. Crimmins concludes:

Overall, I agree that discharges of dust during the construction phase are not likely to cause significant adverse effects either to human receptors or to flora beyond the works area if the above mitigation measures (offered as conditions of consent) are implemented. I consider that the conditions of consent should require a specific CAQMP to detail the above dust mitigation measures and include a limit condition to avoid significant adverse dust effects.

I note that Mr. Crimmins did not consider it necessary to replicate the conditions in the designation, as air discharges from all construction activities will be appropriately managed by the resource consents conditions.

Planning review

I note that Mr. Crimmins provided a detailed response to submissions - this is addressed in section 4.2.2.11

I adopt the assessment of Mr. Crimmins that the potential construction dust effects can be adequately managed with the implementation of conditions under the associated resource consents.

4.3.4.5 Historic Heritage values

Requiring authority AEE

Effects on historic heritage values are addressed in section 9.10 of the AEE (Attachment 1) which refers to the requiring authority's technical report Historic Heritage Assessment by Sarah Phear, Glen Farley, Zarah Burnett, and Rod Clough (Clough & Associates Ltd). Additional information was provided in the section 92 response, Part 2 dated 3 August 2020 (Attachment 2).

The Historic Heritage Assessment (HHA) assessed areas within 200m of the proposed designation boundary. The assessment identified 12 archaeological and historic sites within the wider project area. Of these, the assessment identified 9 as within the proposed designation boundary and are potentially adversely affected. The indicative alignment will affect 7 of the 9 sites within the proposed designation boundary.

The AEE concludes:

The historic heritage significance of the identified archaeological sites has been evaluated, and none of the affected or potentially affected sites within the Project area are of more than moderate historic heritage significance.

The requiring authority proposes the use of a Heritage and Archaeological Management Plan (HAMP) in conjunction with other measures such as investigation and recording to mitigate adverse effects on historic heritage values. It notes that works will be carried out in accordance with an Archaeological Authority.

Overall, the requiring authority's historic heritage specialists consider that the proposed mitigation measures will manage the potential adverse effects on historic heritage values.

Specialist review

The council's specialist: archaeologist Rebecca Ramsay and built heritage specialist Elise Caddigan have reviewed the NoR and provided responses on 12 and 11 August respectively which are included in Attachment 3.

Ms Ramsay generally agrees with the conclusions and recommendations proposed in the HHA. However, she notes four key points where her opinion differs. These relate to:

- Definitions;
- further field survey and assessment;
- significance and values; and
- effects and mitigation.

Ms. Caddigan generally supports Ms. Ramsay's assessment; Ms. Caddigan considers that the requiring authority's assessment does not adequately address built heritage values.

A key issue for Ms. Ramsay and Ms. Caddigan is that they differ from the requiring authority's approach to historic heritage. Ms. Ramsay states that the HHA did not use the RMA statutory definition of historic heritage; rather providing their own definition as "a site that is not identified as an archaeological site, but which has heritage significance". She notes that the definition used for this project is inconsistent with the requiring authority's own guidance for historic heritage impact assessments.

Ms. Ramsay and Ms. Caddigan's views is that the RMA provides a statutory definition of historic heritage and it is this definition that needs to be used when determining the effects of a proposal for a designation. In their view, the deviation from the RMA definition has resulted in a lack of detailed assessment of built heritage values. Similarly, they have an issue with a proposed draft condition where archaeological authority (under the Heritage New Zealand Pouhere Taonga Act 2014) will prevail over the preparation of any management plans. Their view is that while clarity between the RMA and the Heritage New Zealand Pouhere Taonga Act 2014 (HNZPTA) is desirable, the two should be complimentary rather than adversarial.

While they acknowledge the limitations to a full systematic survey, Ms. Ramsay and Ms. Caddigan are of the view that additional assessment closer to project works is fundamental to provide a fuller appreciation of the potential adverse effects on historic heritage. They are supportive any additional field surveys or assessment that will be carried out closer to time of detailed design. As such, they recommend amendments to the proposed draft conditions to provide for timeframes and any subsequent reporting. Their view is that such recommendations will provide certainty around historic heritage outcomes and ensure that the management plans uses the most up to date and complete information.

Ms. Ramsay and Ms. Caddigan identified further heritage sites not covered in the section 92 response and recommended new conditions/changes to the proposed draft conditions to address these via future assessments to inform detailed design and the preparation of the HAMP. Similarly, they raised concerns with the matter of how heritage values were determined, Ms. Ramsay states that:

The determination of heritage values at this stage is predominantly based on historical background research and limited field survey (Table 146). As a result, identified historic heritage sites and places within the proposed designation alignment may still meet the threshold for scheduling under the AUP: OiP or require further values assessments.

While Ms. Caddigan states from a built heritage perspective:

I disagree with the threshold of historic heritage value attributed under some criterion. Some landscapes have been referred to, however the early settlement area of Dome Valley / Streamlands has been undervalued in my opinion.

She provides examples of Woodthorpe House and Phillips Cottage as examples where HHA's approach has resulted in different conclusion on historic heritage values despite both these houses having, in her opinion, comparable *built heritage* values.

Overall, they consider that the adverse effects on historic heritage can be properly managed subject to their recommended amendments to the proposed draft conditions. Their recommendations reflect their concerns and seek to ensure:

- *The document is comprehensive in the identification and assessment of effects of the proposal on historic heritage sites and values. This includes additional field survey, assessment and review of heritage reports and databases*
- *That definitions and terminology are consistent with the RMA*
- *That where relevant conditions and management plans cross reference and support each other.*
- *That the Historic Heritage Management Plan identifies indirect and direct adverse effects on historic heritage sites and appropriate methods to avoid, remedy and mitigate them.*
- *That additional reporting requirements are included, particularly around notification of finds or other relevant heritage matters through enabling, construction and post construction works.*
- *Inclusion of an updated list of built heritage places identified within the designation boundary (including an additional condition to reflect the significance of Phillips Cottage)*
- *That positive heritage outcomes are achieved.*

Planning review

While clarity and consistency between HNZPTA and the RMA is desirable, I consider it is inappropriate to simply partition the two. My view that this approach does not give proper regard to the potential adverse effects in the context of “recognising and providing” for historic heritage as a matter of national significance. Deferring to archaeological authorities as a method of managing modification and destruction is also arguably insufficient under the same test.

In my view, Ms. Ramsay identified the salient planning issue in that the interpretation of historic heritage under the Act is not limited by any date and more than archaeological sites. Therefore, I adopt Ms. Ramsay and Ms. Caddigan's position of considering the potential adverse effects on *historic heritage* as a broader meaning of the term than the requiring authority's approach. Given this, I see it as a logical extension to adopt Ms. Caddigan's recommended amendments to the proposed draft conditions to provide for a more robust, and iterative assessment regime to ensure appropriate consideration is given to the potential adverse effects on built heritage.

I note that the requiring authority reiterated its position in their section 92 response Part 2 dated 3 August 2020 (Attachment 2). It states:

Waka Kotahi is aware of these properties and acknowledges they may have some (yet to be identified) heritage values. We also note that removal of these buildings is permitted by the AUP(OP).

Waka Kotahi considers there is limited benefit in assessing the buildings at this stage of the process as the planned alignment is indicative only (ie. effects may vary) and the buildings maybe altered/removed/improved before the start of the Project.

To a degree I consider that Ms. Ramsay and Ms. Caddigan have accepted this at this stage of the NoR process. Their focus has been on ensuring the mitigation measures will result in a management regime that can appropriately mitigate or remedy the potential adverse effects on historic heritage values. I note that submission RC 29 raised the issue of lack of field survey and assessment. I consider the recommended amendments will help to address this by ensuring the most up to date information is used to manage potential effects from the project.

Overall, I adopt Ms. Ramsay and Ms. Caddigan's assessment. I agree with their recommended changes to the proposed draft conditions and consider the changes appropriate as they provide certainty to the management plan approach and will appropriately manage potential adverse effects on historic heritage values.

Ms. Ramsay also helpfully addressed relevant historic heritage matters recommended by submission NOR 14 Heritage New Zealand Pouhere Taonga and RC 29, Hōkai Nuku. NOR 14 seek changes to the proposed draft conditions to provide clarity, successful implementation and compliance between archaeological matters under the HNZPTA and historic heritage matters under the RMA; they also seek changes to ensure historic heritage outcomes are achieved – including positive outcomes. Hōkai Nuku generally seek changes to ensure that they can actively partake in the planning and implementation of future field work; that they are collaborators in the development of management plans that give effect to their kaitiakitanga aspirations, obligations and statutory rights.

Ms. Ramsay and Ms. Caddigan generally agree with the changes to the proposed draft conditions sought in the submissions. They see the changes as consistent with managing the potential adverse historic heritage effects. However, in some instances Ms. Ramsay did not agree with the relief sought by NOR 14 on the basis that archaeological authority should be complimentary and that some of the changes are already addressed by the accidental discovery rules of the AUP(OP). I agree with their assessment and adopt their recommendation to alter the proposed draft conditions in line with NOR 14 and RC 29 where appropriate.

4.3.4.6 Landscape and visual

Requiring authority AEE

Effects on landscape and visual amenity are addressed in section 9.13 of the AEE (Attachment 1) which refers to the requiring authority's technical report Landscape and Visual Effects Assessment by Chris Bentley (Boffa Miskell Ltd). Additional information was provided in the section 92 response, Part 2 dated 3 August 2020 (Attachment 2).

The assessment of the landscape and visual effects include potential effects from possible shifts in the indicative alignment within the proposed designation boundary.

The assessment concludes that the project will potentially alter the composition of the landform and vegetation cover as well as landscape elements. The effects range from low adverse to high adverse depending on the sensitivity of the area and include changes to wetlands, rivers, sites of outstanding natural features, and significant ecological areas.

The requiring authority proposes to minimise the potential landscape and visual effects through design development guided by an Urban and Landscape Design Framework as well as a 'proposed integration mitigation approach'. This involves identified mitigation focus areas which allows enhancement of existing high value features. Urban and Landscape Design Management Plans will identify and specify methods to manage the effects within specific sections of the project.

Overall, the requiring authority's landscape architect considers that with proposed mitigation measure landscape and visual effects of the project can be minimised.

Specialist review

The council's consultant landscape architect Stephen Brown has reviewed the NoR and provided a response on 14 August which is included in Attachment 3.

Mr. Brown considers that the assessment methodology complies with best practice and is appropriate for this type of project. He considered that assessment of effects as both detailed and logical, appropriately addressing changes to the landscape character of the area around the project corridor. Mr. Brown also considers that the recommended mitigation measures to largely address the effects on landscape character.

Mr. Brown concludes:

It was my opinion that BML had accurately assessed the effects that the SH1 NOR and related applications would have in relation to the landscape character, values and sensitivities of the various landscape units identified and related viewpoints. Those effects included both temporary / construction effects, and long-term or permanent effects – ie. upon completion and after the establishment of mitigation.

Mr. Brown's opinion is that the requiring authority's initial assessment did not adequately address the issue of amenity effects – in particular of effects on nearby residents. Mr. Brown undertook an independent assessment in January 2019. His conclusion was that effects after the establishment of potential mitigation measures to generally be very low – low, with moderate – high effects at Silver Hill Road and Phillips Road (which includes element of Kaipara Flats Road). The requiring authority provided a further assessment of amenity effects as Attachment 3B to their section 92 response (Part 2 dated 5 August 2020, Attachment 2). Mr. Brown has reviewed this additional assessment and found that the methodology and conclusions generally aligned with his own assessment. However, he views the effects as greatest in relation to Phillips Road (and Kaipara Flats) while the requiring authority's assessment identified Wayby Station Road and Charis Lane as most affected. Nonetheless, there was general agreement in terms of the potential adverse visual amenity effects on nearby residents.

In his review of the additional assessment of visual amenity effects, Mr. Brown considers that most of the issues raised by submissions JS 1, JS 8, JS 9, JS 10, NOR 8, NOR 10, NOR 11, RC 20, RC 24, RC 25, RC 26, and RC 30 are largely addressed.

Mr. Brown largely agrees that most landscape and visual effects can be addressed via refinement during detailed design and proposed mitigation measures. However, he retains his reservations insofar that the corridor approach will add a level of uncertainty as to the ultimate outcome in terms of landscape and visual effects.

Consequently, Mr. Brown recommend amendments to conditions 45 and 49 to address the adverse visual amenity effects on residential properties.

Planning review

I adopt Mr. Brown's assessment. It is my view that the recommended amendments to conditions 45 and 49 are necessary changes to ensure adverse visual amenity effects on nearby residential properties are appropriately managed. I note that I have addressed submission JS 1, JS 8, JS 9, JS 10, and JS 11's concerns about the corridors approach in section 3.2.

4.3.4.7 Operational Traffic

Requiring authority AEE

Effects of operational traffic are addressed in section 9.14 of the AEE (Attachment 1) which refers to the requiring authority's technical report Operational Transport Assessment by Amanda Klepper and Kerstin Rupp, (Jacobs New Zealand Limited). Additional information was provided in the section 92 response, Part 2 dated 3 August 2020 (Attachment 2).

The main potential operational traffic effects are identified as:

- Traffic volumes: Traffic volumes on the Project (between Warkworth and Wellsford) are expected to be 24,600 vehicles per day in 2046.

- Travel times: Travel times between Warkworth and Wellsford via the project compared to a do-nothing scenario are predicted to reduce between 1min (6%) and 4min (19%) depending on period and direction.

Travel times between Puhoi and Te Hana via the project compared to a do-nothing scenario are predicted to reduce between 22min (48%) and 12min (35%) depending on period and direction.

- Travel time reliability: The significant increase in capacity is expected to significantly improve travel time reliability.
- Safety: the project is predicted to result in significant reduction in crashes along SH1; from a predicted 19 per year crashes to 17 (10% reduction)
- Route resilience: alternative route to the existing SH1 route between Warkworth and Te Hana will reduce the effects of incidents
- Road freight performance: Road freight will enjoy the travel time savings and reliability; additionally, the project will be designed to highway standards favourable to heavy commercial vehicles
- Public transport network performance: Public transport will enjoy the same travel time, travel reliability and route resilience benefits as private vehicles
- Pedestrian: the proposal will redirect traffic from the existing SH1 making it easier and safer for pedestrian crossing in the key townships

The requiring authority's transport specialist considers that the project will result in positive operational traffic effects. They conclude:

The Project will increase capacity for travel between Warkworth and Te Hana, improving road safety, reducing journey times, and improving reliability of journey times for general traffic and freight. It will improve route security by providing an alternative route built to higher standards, which will be more resilient to incidents. Overall, the Project will meet the objectives identified by the Transport Agency and it will significantly improve the safety, reliability, and resilience of the route.

Specialist review

The council's consultant transport specialist Gary Black has reviewed the NoR and provided a response on 28 August which is included in Attachment 3.

Mr. Black turned his mind particularly to the main operation effects of traffic volumes; travel times; travel time reliability; route resilience; safety; route security; and Road Freight performance. Following the section 92 response, he agrees with conclusions of the AEE.

In terms of the modelling used, Mr. Black concludes:

I have reviewed the traffic modelling included within the OTA and I conclude that it is acceptable and robust, as this includes future known land use activities.

Planning review

Overall, I accept Mr. Black's assessment on the transport benefits of the project. While no submissions challenged the potential positive effects, Mr. Black's assessment was nonetheless important for completeness. Mr. Black also notes that it is normal practice for NZTA to consult with Heavy Haulage Association during detailed design stage, this reaffirms my view that submissions relating to detailed design (NOR 15 and RC 32) are beyond the scope of the NoR stage of the project.

Relevantly NOR 9 seek additional conditions requiring the requiring authority to work with Auckland Transport on the detailed design of identified local roads and to provide for an extension of the designation if required. Mr. Black did not comment on submission NOR 9 from Auckland Transport.

From a planning perspective, I am of the view that the successful integration of the project with the local road network is crucial to ensure the efficient function of local roads and to manage the operational traffic effects of the project. I note that Auckland Transport may be satisfied if the requiring authority provides additional detailed drawings, or alternatively through continued discussions. However, in the absence of further evidence, I adopt Auckland Transport's recommendation for a new condition to enable their input on the integration of the project with local roads. However, I do not adopt their recommendation for a condition to provide for an extension of the designation at the NoR stage. I am of the view that an alteration under s181 of the Act is the most appropriate mechanism should an extension be found necessary during the detailed design stage.

4.3.4.8 Operational Noise

Requiring authority AEE

Effects of operational noise and vibration are addressed in section 9.15 of the AEE (Attachment 1) which refers to the requiring authority's technical report Operational Noise and Vibration Assessment by Jesse Ngo and Joshua Loh (Jacobs New Zealand Ltd). Additional information was provided in the section 92 response, Part 3 dated 5 August 2020 (Attachment 2).

The requiring authority uses New Zealand Standard NSZ6806:2010 Acoustics Road traffic noise – New and altered roads (NZS 6806) to assess potential noise from operation of the project. NZS 6806 identifies sensitive receivers like dwellings (Protected Premises and Facilities or PPF) within 200m of the proposed designation boundary. These PPFs are then established a noise criteria category which sets out the expected noise environment using a best practicable options (BPO) approach. Most PPFs is predicted to receive noise levels that remain within Category A (i.e. ≤ 57 dB LAeq(24h) for new roads and ≤ 64 dB LAeq(24h) for altered roads).

The proposed mitigation (using a BPO approach) involves use of low noise road surfacing along sensitive sections of the project and building improvements to 3 dwellings to achieve reasonable noise level.

Overall, the requiring authority's acoustics specialists consider that with proposed mitigation measure the operation of the project can achieve reasonable noise levels for PPFs, while acknowledging there will be a significant change in noise levels in some areas.

No notable vibration impacts are expected from the operation of the Project.

Specialist review

The council's consultant acoustic specialist Siiri Wilkening has reviewed the NoR and provided a response on 7 August which is included in Attachment 3. Ms. Wilkening agrees that the noise and vibration standards and criteria are appropriate for this type of project. She agrees that traffic will not generate vibrations that will affect PPFs due to the distances to the indicative alignment.

Relevantly for submissions JS1, JS9, JS 10, NOR 6, NOR 8 and NOR 12, Ms. Wilkening notes her concern with several intrinsically tied matters emerging from the requiring authority's operation acoustic assessment.

Ms. Wilkening considers that the software, calculation method, and input data for the computer modelling is appropriate. However, she is of the view that the applicability of the model is limited to properties closer to properties with noticeable existing road noise.

Her conclusion is that:

...the measured data should be used as the basis of assessment for locations where the modelled noise level from existing roads does not control the environment. For example, the survey locations at 211 Kaipara Flats Road and 39 Philips Road recorded significantly lower noise levels than the modelled "existing" noise level provided in Table 5 of the report. Since the measured noise levels cannot be accurately replicated in the model, the measured noise levels over several days would be the accurate noise level to base the assessment on.

The existing predicted noise levels may be appropriate to determine the existing noise level for PPFs close to the existing SH1 or other roads in the area with reasonable traffic volumes. For the future situation, with the Project in place, the predicted noise levels can reasonably be used as the road will be the controlling noise source.

With regards to the output of the computer noise modelling, Ms. Wilkening highlights the corrections included in the section 92 Part 2 response. While most changes are minor, there are a few properties with significant material changes ranging from +9 dB to -9 dB (a 3 dB change being a noticeable noise level increase). She concludes

Overall, the corrected levels appear reasonable based on spot checks. Where noticeable changes in effects may result from the update, this should be addressed by the applicant in the hearing (e.g. for 214 and 125 Kaipara Flats Road and 177 Rustybrook Road).

She agrees with the AEE that changes include significant adverse effects, particularly for properties with very low existing noise levels.

Ms. Wilkening also commented on the assessment criteria for determining PPFs which will receive building modification mitigation (i.e. acoustic treatment of buildings). She agrees that the mitigation trigger of “noise level change by 3 dB” is appropriate. However, she considers it more appropriate to assess this using “Existing” (rather than “Do Nothing”) and “Project with Mitigation scenarios” against the New Road criteria for determining noise level change.

Furthermore, she considers it more appropriate to use NZS6806 methodology to determine the relevant baseline level when determining if a Category B PPF should receive building modification mitigation. Ms. Wilkening is in agreement with an amendment to NZS6806 that is commonly used by NZTA, to investigate building modification mitigation for all instances where external noise level is within Category C, or Category B (with an increase of more than 3 dB), and where internal noise level is predicted to be higher than 40 dB L_{Aeq(24h)}.

Ms. Wilkening also raised the issue of dwellings within the designation boundary as potential PPFs. While the section 92 response provided some context and assumptions, Ms. Wilkening’s opinion is that any dwellings retained for residential purposes should be safeguarded to ensure that they are only subject to appropriate traffic noise levels.

Notwithstanding the outstanding matters above, Ms. Wilkening generally agrees that the proposed mitigation options are appropriate for the project. The focus on low noise road surface material is appropriate to avoid adverse visual effect and is more practicable in terms of maintenance when compared to barriers. Ms. Wilkening concludes that, subject to recommended changes to the proposed draft conditions, any operational noise and vibration effects can be appropriately managed.

Planning review

I adopt Ms. Wilkening’s conclusions that operation vibration effect would not impact PPFs, given the likely separation distance from the proposed traffic lanes.

I note that the noise modelling and measurement ambient noise levels are a concern for submission JS 1. My understanding is that clarifying the discrepancy between ambient noise measurement and the predicted noise level from computer modelling will help to understand the quantum of change.

While the trigger for the proposed mitigation measure is still dependent on meeting a noise level threshold rather than the quantum of change – noise levels can still remain reasonable even if the change itself is significant. Nonetheless a clearer understanding of the significance may provide further certainty of the appropriateness of the proposed management measures. For completeness, I agree with Ms. Wilkening that the requiring authority should address PPFs that are now being predicted to be subject to material change in noise levels at the hearings.

Ms. Wilkening recommends various changes to the proposed draft conditions and an additional condition to provide further certainty of outcome. Given that change in noise criteria can involve more noticeable change in noise level, a defined methodology is needed to deal with non-compliant PPFs. She proposes a regime whereby building modification mitigation should be considered where compliance with Category A and B is not achieved.

Ms. Wilkening recommends changes to condition 92 to recognise the Altered Road and New Road criteria under NZS6806 to recognise that PPFs associated with “new” roads do not have a “do-nothing” scenario i.e. new roads should not be compared with a do-nothing as there are no roads to form a baseline. She also recommends changes to require identification of PPFs where compliance with Category A and Category not practicable following implementation of all detailed design Structural Mitigation.

Ms. Wilkening recommends changes to condition 99 and Table 2. Condition 99 sets out the requirement for a Noise Mitigation Plan which under the NZTA template, include design noise level for each PPF. Her view is that Table 2 in Condition 89 should include the predicted noise level for each PPF in addition to the noise criteria category to provide full clarity and transparency as to the relevant outcomes the plan is trying to achieve. Changes to condition 99 include removing the reference to subsequent versions as it relates to the document P40 Noise Specification 2014 as she considers that the future content is not known and may not contain the relevant requirements to enable certainty of outcome.

Similar to Condition 99, Ms. Wilkening recommends amendments to condition 100 to remove references to subsequent documents. There is another recommended change to make clear that the post-construction review report occurs after any low noise road surface is implemented not potentially prior.

I agree with Ms. Wilkening that her recommended changes to the proposed draft conditions will offer further certainty and offer affected landowners a reasonable expectation of the resultant noise environment. It is my view that these changes will provide the confidence needed, in conjunction with the Noise Management Plan, that any potential adverse operational noise will be appropriately managed.

Ms. Wilkening recommends a new condition to require further assessment of dwellings inside the designation boundary as PPFs prior to construction of the project. Ms. Wilkening’s recommendation to include a consultation for property owners on newly identified PPFs also relate to this issue. I understand that the requiring authority will provide further evidence on the occupancy of these dwellings during operation. However, without further evidence, I adopt Ms. Wilkening’s assessment that the condition is needed to ensure any potential adverse operational noise effects on these dwellings are appropriately addressed. I also recommend a new condition to require building modification mitigation for any dwellings retained for residential purposes after operation of the state highway and not identified as PPFs prior to construction. This is to minimise residual adverse noise effects on potential residents.

4.3.4.9 Social impacts

Requiring authority AEE

Social effects are addressed in section 9.17 of the AEE (Attachment 1).

The AEE considers that the project will have potential positive and adverse social effects.

Positive effects result from the improvements to road safety, reduced congestion, improve journey time and reliability and economic benefits for Northland and north Rodney. Potential adverse social effects can be summarised into two broad categories – those directly affected by the process and disruption to communities during the construction period.

For those directly affected, the process associated with the project can cause anxiety related to uncertainties (both financial and personal), disruption, permanent loss of amenity, loss of existing social and family networks, or stress and worry from navigating the RMA process.

During the construction period, potential adverse effects identified include disruption to routines, change in access, stress caused by adverse amenity effects and stress and anxiety due to uncertainty.

The requiring authority considers that its proposed mitigation measures addressing other potential adverse effects will help to mitigate potential adverse social effects. Other recommendations include open communication with directly affected landowners, acquisition of properties, and stakeholder liaison up to and during construction.

Overall the AEE considers that there are moderate adverse social effects associated with the construction, but at a wider local and regional level, the effects are a significant positive overall.

Planning review

I generally agree with this assessment of social effects. I note that many of the submissions discussed in section 4.2.2 are from local residents and speak to some of the adverse social effects highlighted in the AEE.

Submission JS 1 noted that the inability to access the management plans during works for P2Wk as a source of frustration. I consider making management plans accessible to members of the public a simple mitigation measure to reduce potential adverse social effects from stress and anxiety. Therefore, I recommend an amendment to condition 9 Stakeholder Management plan to require the requiring authority make all prepared management plans publicly accessible.

I consider the proposed draft conditions on the complaints management process sufficiently detailed to address potential complaints during construction works. However, I recommend a change to proposed draft condition 13 to clarify that 'as soon as practicable' mean 'within 10 working days' to ensure a reasonable response time from the requiring authority.

4.3.4.10 Cultural Values

Requiring authority AEE

Effects on cultural values are addressed in section 9.18 of the AEE (Attachment 1).

The cultural values assessment is informed by engagement with Mana Whenua and includes consideration of cultural values assessment provided to the requiring authority. The AEE summarises the effects as:

The Project is recognised both as having potential adverse impacts on values important to Mana Whenua, and equally providing opportunities to reflect cultural values in the Project through design and mitigation. The key opportunity is through the application of a design approach which reflects the principles of partnership through Te Tiriti o Waitangi by taking a holistic approach to the urban and landscape design and ecological mitigation.

Overall, the AEE considers that the project adequately responds to the matters raised by Mana Whenua.

Planning review

I defer to submission RC 29 Hōkai Nuku which provides a Cultural Effects Assessment (CEA) and associated submission on the NoR. Hōkai Nuku is generally supportive of the potential for positive potential cultural effects, such as:

Hōkai Nuku supports the focus on planting and using design works at interchanges to create gateways. This can be further enhanced with appropriate cultural artworks which celebrate the cultural footprint of mana whenua.

...

Hōkai Nuku is highly supportive of Waka Kotahi's health and safety case for improved corridor resilience between Whangārei and Auckland to cope with increased use, particularly because SH1 between Warkworth and Te Hana has a high crash rate. Māori are more likely than the rest of the population to die or experience serious injury from traffic accidents. Hōkai Nuku wants to ensure the safety of our own whānau and their friends as they move throughout the rohe, and also the safety of manuhiri passing through.

However, Hōkai Nuku retains reservation that the cumulative effects of the project may degrade the ability of the ecosystem to support taonga species and tikanga around taonga unearthed during the project.

Section 4.2.2.13 sets out the relief sought by Hōkai Nuku. In brief, they seek to:

- Acknowledge the Hōkai Nuku Cultural Footprint;
- Be actively involved in both the development and, where appropriate, implementation and monitoring of management plans relevant to their kaitiakitanga aspirations

I am mindful that requiring authority may have amended their proposed draft conditions to recognise the matters raised in RC 29. However, in the absence of any confirmation, I have adopted some of Hokai Nuku's relief seeking amendments to the proposed draft conditions relating to recognising a narrower definition of mana whenua as well as enabling Mana Whenua involvement in the preparation of relevant management plans. The recommended changes will help to enable Mana Whenua to exercise kaitiakitanga, appropriately managing potential adverse cultural effects resulting from other effects of the project. In some instances, this may result in potential positive cultural effects particularly around recognition of Hōkai Nuku's cultural footprints and partnership during landscape and urban design components of the project.

This matter is also addressed in section 4.2.2.13.

Overall, I consider that with the recommended amendments to the proposed draft conditions, the project will appropriately respond to the aspirations of Mana Whenua.

4.3.4.11 Economic

Requiring authority AEE

Economic effects are addressed in section 9.19 of the AEE (Attachment 1).

The AEE concludes that overall, the project will provide positive economic benefits as the population of Northland region and north Rodney area increase. Improvements to the route will provide greater trip reliability and improve the movement of goods and people between Auckland and Northland. During construction, it concludes:

Over the anticipated seven year construction period for the Project, it is estimated that there will be around 530-650 additional jobs, \$42-\$52 million in additional wages and salaries per annum, and upwards of \$250 million per annum in additional expenditure with local businesses for the supply of goods and services to the Project

Planning review

I generally agree with the assessments found in the AEE. I note that several submissions (NOR 4, NOR 7 and RC 29) relate to the economic benefit of the application concerned that the project may not proceed. In these instances, my understanding is that the decision of whether/when to proceed with the proposed state highway is a matter of policy decision by central government. Likewise, the predictive nature of traffic modelling means that the exact quantum of benefits is almost tangential to the core planning issue of demonstrating the potential positive economic effects in the first instance.

I note that submission NOR 1, NOR 13, RC 38 and RC39 supports the NoR for its economic benefits.

4.3.4.12 Landuse, property, and network utilities

Requiring authority AEE

Effects on landuse, property, and network utilities are addressed in section 9.20 of the AEE (Attachment 1).

Construction can potentially disrupt farming operations. Other construction related potential adverse effects relate to disruption from temporary restrictions to access which may impact operations of those sites. The requiring authority proposes the implementation of a Stakeholder Engagement and Communications Plan to identify and manage site specific issues during construction.

Potential permanent adverse effects relate to acquisition of land. The project affects 79 private landowners with approximately 49 dwellings inside the proposed designation boundary. The AEE assumes these 49 dwellings will be vacant during construction. The Public Work Acts will set out the acquisition and compensation process for any properties that the Crown will need to purchase.

Other potential adverse effects include loss of farm infrastructure and severing large lots. The requiring authority proposes to mitigate this through identifying means to maintain access including building stock underpasses, and reinstatement of farm infrastructure like fencing, races, and yards. The AEE notes that the requiring authority is in ongoing discussions with landowners.

The effects of the Project on the commercial plantation forestry relate to land acquisition and a designation being located on their land.

Network utilities will be avoided, relocated and/or bridged to avoid permanent adverse effects on their functionality.

Overall, the AEE concludes that the potential adverse effects on land use and property are moderate.

Planning review

From a planning perspective, I consider that the potential adverse effects on land use and property is to be expected given the scale of the project. The route corridor largely avoids high populated areas or community facilities while the Public Works Act process will address land uses within the proposed designation boundary.

Submissions JS 5, NOR 6, and RC 28 relate to the potential adverse effects on rural production land uses. JS 5 and NOR 6 are more general submissions; while acknowledging their concerns, this needs to be balanced against the functional realities that significant infrastructure will cause potential adverse effects on rural production land wherever it is located outside of urban areas. With regards to RC 28, my view is that the Public Works Act process will appropriately address their concerns regarding the partial loss of their property.

Section 4.2.2.12 addresses the potential effects on network utilities; I consider that with recommended amendments to the draft proposed conditions, network utility operations should be able to operate and maintain their assets efficiently

Submission JS 1, JS 9, JS 10, and JS 11 raised the issue of decreased property value. Effects on property values are not a relevant resource management matter. Any reduction in property values is reflected in adverse effects on amenity values. *North Canterbury Gas Ltd v Waimakariri DC*⁵ noted that the physical effects on the environment are usually of more importance than the speculative evidence of effects on valuation. Therefore, I consider that the assessment of potential adverse effects on amenity from noise, dust, landscape and visual effects, and traffic will appropriately address any effects on valuation.

Overall, I agree with the AEE that potential effects on land use and property are moderate.

4.3.5 Effects Conclusion

I consider that subject to the further amendments to the proposed draft conditions recommended above and included in section 6.2, the effects of the project will be avoided, remedied or mitigated to be acceptable.

4.4 National environmental standards

4.4.1 National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NES (soil))

The NES (soil) provides a nationally consistent set of planning controls and soil contaminant values to ensure that land affected by contaminants in soil is appropriately identified and assessed before it is developed and, if necessary, the land is remediated or the contaminants contained to make the land safe for human use.

I refer to Mr. Crimmins assessment dated 21 August 2020 (Attachment 3). Mr Crimmins state:

The AEE concludes that the later detailed design process shall determine if soil contamination consents are required for the soil disturbance activities for the selected alignment and construction methodology. If required, separate consent applications under the NES:CS and/or AUP(OP) Chapter E30 would be lodged following this detailed design process and prior to the works occurring.

The CLA [WW2W Contaminated Land Assessment, prepared by GHD and Jacobs, dated 16 February 2018] concludes that soil contamination within the proposed designation boundaries is not likely to be a significant risk for the Project and could be appropriately managed. Some 'moderate risk' activities were identified within the designation boundaries, being activities included in the Hazardous Activities and Industries List (HAIL, Ministry for the Environment, 2011); however, none of these appear likely to have caused widespread or significant soil contamination.

⁵ North Canterbury Gas Ltd v Waimakariri DC EnvC A217/02

I accept the rationale for not applying for consents under the NES:CS the AUP(OP) Chapter E30 at this stage, noting that the need for these consents may be impacted by the exact location and extent of earthworks to be determined at a later date. A further reason for delaying the applications for soil contamination consents is that land-use changes could occur to out-date the Feb-18 CLA in the period before works start.

Based on the conclusions of the CLA and the review by Mr Crimmins, I consider that the proposal is consistent with the NES (soil).

4.4.2 National Environmental Standard for Air Quality

The National Environmental Standards for Air Quality provides a nationally consistent set of standards for emissions and air quality. They aim to set a guaranteed minimum level of health protection for all New Zealanders.

I note that potential adverse air quality effects are addressed in detail in section 13 of the resource consents section 42A report. Similarly, I refer to Mr. Crimmins assessment dated 21 August 2020 (Attachment 3). Relevantly, Mr Crimmins state:

...the operational air discharges are not predicted to cause ambient air quality to approach the NES:AQ Ambient Air Quality Standards for PM10, NO2 or any other scheduled air pollutant. Further, I consider that the proposed mitigation measures for construction dust shall ensure that PM10 concentrations beyond the works boundary shall comply with the relevant NES:AQ standard. The Auckland Rural Airshed, within which the WW2W works are to occur, is not defined by NES:AQ Regulation 17 as a 'Polluted Airshed'. Therefore, I do not consider the NES:AQ restricts the grant of the NoR or consent.

Based on the conclusions of the AEE and the review by Mr Crimmins, I consider that the proposal is consistent with the NES (air quality).

4.5 National policy statements

Section 171(1)(a)(ii) requires the council to, subject to Part 2, consider the effects on the environment of allowing the notice of requirement, having particular regard to any relevant provisions of a national policy statement.

4.5.1 New Zealand Coastal Policy Statement (NZCPS)

The NZCPS contains objectives and policies relating to the coastal environment.

Relevantly, the Project will potentially impact on the coastal environment through discharges, specifically near the northern tie in and Warkworth Interchange. Section 11.2.8 of the AEE (Attachment 1) concludes that the project is consistent with the objectives and the policies of the NZCPS.

I adopt Ms. Holme's conclusions as set out in her section 42A report for the associated resource consents application. This reflects council's assessment. It concludes

that the proposal is consistent with the NZCPS as the earthworks will be undertaken in accordance with best practice erosion and sediment controls to appropriately manage sediment discharge into the Mahurangi and Kaipara Harbours, and discharge during the operation of the highway will be treated prior to discharge to ensure water quality in the harbours is maintained.

4.5.2 Hauraki Gulf Marine Park Act 2000 (HGMPA)

This HGMPA is also a national policy statement (refer section 9 of the HGMPA).

Geographically it applies to the Hauraki Gulf, its islands and catchments. Catchment is defined to mean *any area of land where the surface water drains into the Hauraki Gulf*. This includes the catchment within which the project works are located.

The key issue is the extent to which the project works address the matters set out in sections 7 and 8 of the HGMPA. Section 7 recognises the national significance of the Hauraki Gulf, its islands and catchments, while section 8 outlines the objectives of the management of the Hauraki Gulf, its islands and catchments. The objectives are intended to protect, maintain and where appropriate enhance the life-supporting capacity of the environment of the gulf and its islands.

I adopt Ms. Holme's conclusions as set out in her section 42A report for the associated resource consents application. This reflects council's assessment. It concludes that the proposed earthwork mitigation measures will adequately mitigate effects of the proposal on the Hauraki Gulf and will maintain water quality and marine ecology values.

4.5.3 National Policy Statement for Freshwater Management 2020 (NPSFM)

The NPSFM will come into force on 3 September 2020 and applies a management framework that considers and recognises Te Mana o te Wai as an integral part of freshwater management.

I adopt Ms. Holme's conclusions set out in her section 42A report for the associated resource consents application. This reflects council's assessment. It concludes that provided the quantum of offset is appropriate then the proposal is not contrary to the outcomes sought in the NPSFM.

4.5.4 National Policy Statement on Electricity Transmission (NPSET)

The NPSET is a national policy statement that sets out the objective and policies to enable the management of the effects of the electricity transmission network.

Policy 10 requires decision-makers to the extent reasonably possible, manage activities to avoid reverse sensitivity effects on the electricity transmission network and to ensure that operation, maintenance, upgrading, and development of the electricity transmission network is not compromised.

Relevantly, Transpower's Henderson – Maungatapere (HEN-MPE-A A) 110kV single circuit transmission line and Towers 201 and 202 are directly affected by the proposed 'Te Hana Interchange' and works located at Mangawhai Road.

I consider that any potential adverse effects of the project on the electricity transmission network, can be reasonably managed to ensure its operation and maintenance (as addressed in section 4.2.2.12 of this report). I consider that the NoR is generally consistent with the relevant provisions of the NPSET.

4.6 Regional Policy Statement (Chapter B of the AUP) (RPS)

The RPS sets the strategic direction for managing the use and development of natural and physical resources throughout Auckland.

RPS provisions are addressed in section 11.2 of the AEE (Attachment 1). Table 1 below identifies the relevant RPS provisions and my assessment of the proposal against those provisions.

Table 1

Provision	Comment
B2.2 Urban growth and form	

Provision	Comment
<p>Objective B2.2.1</p> <p>(1) A quality compact urban form that enables all of the following:</p> <ul style="list-style-type: none"> (a) a higher-quality urban environment; (b) greater productivity and economic growth; (c) better use of existing infrastructure and efficient provision of new infrastructure; (d) improved and more effective public transport; (e) greater social and cultural vitality; (f) better maintenance of rural character and rural productivity; and (g) reduced adverse environmental effects. <p>(5) The development of land within the Rural Urban Boundary, towns, and rural and coastal towns and villages is integrated with the provision of appropriate infrastructure.</p>	<p>RPS 2.2.1(1) and RPS 2.2.1(5) are relevant because these two objectives set out the AUP(OP) directive of integrating land use planning and infrastructure provision.</p> <p>The route protection nature of the NoR is consistent with the principle of planning for infrastructure to support future development. B2.2.1(5) specifically refers to the integration of infrastructure with towns, and growth within the RUB i.e. development of Future Urban Zoned land. Relevantly, the project can provide benefits connecting Wellsford to the wider Auckland region, and Warkworth to the North, while, integrating with the local transport network can free up capacity and enable development to occur in the Future Urban Zoned land around Warkworth and Wellsford. While there is a risk in attracting development pressures on the peri-urban areas of the townships, there is generally sufficient land zoned FUZ to take up development pressures.</p> <p>Relevantly for B2.2.1(1), the project will enable the 'off lining' of the existing SH1 which passes through the townships of Warkworth, Wellsford, and Te Hana. The project once constructed will also draw heavy vehicles away from the existing SH1. This will improve the urban environment within those townships, reducing noise, air pollution, and enabling a more pedestrian and cyclist friendly environment.</p> <p>The project itself is a strategic piece of infrastructure which will provide connections between the north of Auckland and Northland with potential economic benefits. This can contribute to the local economy of nearby towns contributing to social and cultural vitality in turn.</p> <p>The project is consistent with the RPS B2.2.1.</p>
B2.3 A quality built environment	

Provision	Comment
<p>Objective B2.3.1(3)</p> <p>The health and safety of people and communities are promoted.</p>	<p>The project is relevant in that it will improve the safety of the state highway by bringing it up to higher standards.</p> <p>The diversion of traffic from the existing SH1 will also benefit the health and safety of residents in the townships of Warkworth, Wellsford, and Te Hana.</p> <p>The project is consistent with RPS 2.3.1(3)</p>
B3.2 Infrastructure	
<p>Objective B3.2.1</p> <p>(1) Infrastructure is resilient, efficient, and effective.</p> <p>(2) The benefits of infrastructure are recognised, including:</p> <ul style="list-style-type: none"> a) providing essential services for the functioning of communities, b) businesses and industries within and beyond Auckland; c) enabling economic growth; d) contributing to the economy of Auckland and New Zealand; e) providing for public health, safety and the well-being of people and f) communities; g) protecting the quality of the natural environment; and h) enabling interaction and communication, including national and international links for trade and tourism. <p>(3) Development, operation, maintenance, and upgrading of infrastructure is enabled, while managing adverse effects on:</p> <ul style="list-style-type: none"> a) the quality of the environment and, in particular, natural and physical resources that have been scheduled in the Unitary Plan in relation to natural heritage, Mana 	<p>RPS B3.2.1 (1)(2)(3)(4) provide for, and recognise the importance of resilient, efficient, infrastructure and the ability for them to operate.</p> <p>The project is significant infrastructure which meets most of the matters outlined in RPS B3.2.1(2)(a-h). Importantly, the project will also enable resilience in the wider state highway network by providing an alternative route to the existing SH1.</p> <p>Generally, the project provides for existing infrastructure to continue to operate (RPS 3.2.1(4)(6)) while providing for a new piece of significant infrastructure. In turn, the NoR will protect the corridor needed for the proposed motorway consistent with RPS B3.2.1(6)</p> <p>Of relevance is RPS B3.2.1 (7) which provides for the national grid. Having regard to the NPSET, the project, subject to changes to the proposed draft conditions, will satisfy the concerns of Transpower on the project's potential adverse effect on the national grid.</p> <p>The project gives effect to RPS 3.2.1(5) for the reasons outlined in the assessment of RPS B2.2.1 above.</p> <p>The project is consistent with RPS B3.2.1.</p>

Provision	Comment
<p>Whenua, natural resources, coastal environment, historic heritage and special character;</p> <p>b) the health and safety of communities and amenity values.</p> <p>(4) The functional and operational needs of infrastructure are recognised.</p> <p>(5) Infrastructure planning and land use planning are integrated to service growth efficiently.</p> <p>(6) Infrastructure is protected from reverse sensitivity effects caused by incompatible subdivision, use and development.</p> <p>(7) The national significance of the National Grid is recognised and provided for and its effective development, operation, maintenance and upgrading are enabled.</p>	
<p>Policy B3.2.2</p> <p>(1) Enable the efficient development, operation, maintenance and upgrading of infrastructure.</p> <p>(3) Provide for the locational requirements of infrastructure by recognising that it can have a functional or operational need to be located in areas with natural and physical resources that have been scheduled in the Unitary Plan in relation to natural heritage, Mana Whenua, natural resources, coastal environment, historic heritage and special character.</p> <p>(5) Ensure subdivision, use and development do not occur in a location or form that constrains the development, operation, maintenance and upgrading of existing and planned infrastructure.</p>	<p>RPS 3.2.2 (1)(3)(5) anticipate development, operation, use and maintenance of infrastructure within areas with scheduled natural and physical resources. This recognises the important role of infrastructure by providing a more enabling regime for the community benefit that significant infrastructure can have.</p> <p>The route protection nature of the project gives effect to B3.2.2(5).</p> <p>The project is consistent with RPS B3.2.2</p>
<p>B3.3.2</p>	<p>B3.3.2 (1)(2)(3) recognises the particular importance of transport infrastructure and route</p>

Provision	Comment
<p>(1) Enable the effective, efficient and safe development, operation, maintenance and upgrading of all modes of an integrated transport system.</p> <p>(2) Enable the movement of people, goods and services and ensure accessibility to sites.</p> <p>(3) Identify and protect existing and future areas and routes for developing Auckland's transport infrastructure.</p>	<p>protection. The nature of the project gives effect to these directives.</p> <p>The project is consistent with RPS B3.3.2.</p>
B4.2 Outstanding natural features and landscapes	
<p>Objective B4.2.1</p> <p>(1) Outstanding natural features and landscapes are identified and protected from inappropriate subdivision, use and development.</p> <p>(2) The ancestral relationships of Mana Whenua and their culture and traditions with the landscapes and natural features of Auckland are recognised and provided for.</p>	<p>I refer to the AEE (Attachment 1) which states:</p> <p><i>The Project route selection process has avoided all scheduled ONLs identified in the AUP(OP). There is one ONF (ID 49, Hōteao River incised meanders) that overlaps a small length of the proposed designation boundary (near the point where the Hōteao River is crossed by the existing State Highway 1). The proposed designation boundary has been narrowed down substantially at this point as far as reasonably practicable to avoid to the greatest extent the Hōteao River ONF. The Indicative Alignment and related construction works occur on the existing road which is located within the ONF any encroachment will be minimal (if any). The Project will not compromise the physical or visual integrity of the Hōteao River incised meanders outstanding natural feature.</i></p> <p>Also relevantly:</p> <p><i>Project design including the viaduct over the Hōteao River has ensured protection of the physical and visual integrity of the ONF within the proposed designation boundary and avoided adverse effects on Mana Whenua values associated with the ONF.</i></p> <p>I accept this assessment. The project largely avoids any potential adverse effects on outstanding natural features and has engaged positively with Mana Wheua.</p>

Provision	Comment
	The project is consistent with RPS B5.2.1.
B5.2 Historic Heritage	
<p>Objective B5.2.1</p> <p>(1) Significant historic heritage places are identified and protected from inappropriate subdivision, use and development.</p> <p>(2) Significant historic heritage places are used appropriately and their protection, management and conservation are encouraged, including retention, maintenance and adaptation.</p>	<p>The RPS historic heritage objectives relate to the identification and protection of significant historic heritage places from inappropriate subdivision, use and development.</p> <p>There are no scheduled historic heritage sites under the AUP(OP) within the designation boundary.</p> <p>The project assessed identified historic heritage sites within the designation boundary using RPS B5.2.2 which is addressed below.</p> <p>B5.2.1 needs to be considered in conjunction with RPS Objective 3.2.1(3) and RPS policy 3.2.2(3) which recognise that infrastructure may have functional needs to be located in areas that have been scheduled in the Unitary Plan.</p> <p>Consequently, the recommended conditions reflect this when considering how to appropriately manage potential adverse historic heritage effects.</p> <p>The project is consistent with RPS B5.2.1</p>
<p>Policy B5.2.2</p> <p>(1) Identify and evaluate a place with historic heritage value considering the following criteria:.....</p> <p>(2) Define the location and physical extent of a significant historic heritage place, having considered the criteria in Policy B5.2.2 (1) to identify:</p> <p>(a) the area that contains the historic heritage values of the place; and</p> <p>(b) where appropriate, any area that is relevant to an understanding of the function, meaning and relationships of the historic heritage values.</p>	<p>The HHA assessed the identified historic heritage sites against RPS B5.2.2. The HHA did not consider that any of the historic heritage sites as meeting the threshold for scheduling. This assessment of heritage values at this stage is predominantly based on historical background research and limited field survey. As a result, identified historic heritage sites and places within the proposed designation alignment may still meet the threshold for scheduling under the AUP(OP). Council's recommended conditions seek to ensure that proper assessments will occur closer to works commencing.</p> <p>Subject to recommended changes to the proposed draft conditions, the project is consistent with RPS B5.2.2.</p>

Provision	Comment
<p>(3) Include a place with historic heritage value in Schedule 14.1 Schedule of Historic Heritage if:</p> <p>(a) the place has considerable or outstanding value in relation to one or more of the evaluation criteria in Policy B5.2.2 (1); and</p> <p>(b) the place has considerable or outstanding overall significance to the locality or greater geographic area.</p>	
B6.3 Recognising Mana Whenua values	
<p>Objective B6.3.1</p> <p>(1) Mana Whenua values, mātauranga and tikanga are properly reflected and accorded sufficient weight in resource management decision-making.</p> <p>(2) The mauri of, and the relationship of Mana Whenua with, natural and physical resources including freshwater, geothermal resources, land, air and coastal resources are enhanced overall.</p>	<p>The requiring authority has engaged with Hōkai Nuku, throughout the project. I rely on the AEE (Attachment 1) in understanding that Mana Whenua was part of alternative assessment, consideration of technical reports, recognition of Te Mana o Te Wai and incorporating Mana Whenua values.</p> <p>The project is consistent with RPS B6.3.1.</p>
<p>Policy B6.3.2</p> <p>(1) Enable Mana Whenua to identify their values associated with all of the following:</p> <p>(a) ancestral lands, water, air, sites, wāhi tapu, and other taonga;</p> <p>(b) freshwater, including rivers, streams, aquifers, lakes, wetlands, and associated values;</p> <p>(c) biodiversity;</p> <p>(d) historic heritage places and areas; and</p> <p>(e) air, geothermal and coastal resources.</p>	<p>I refer to the AEE (Attachment 1) which states:</p> <p><i>The relationship of Mana Whenua and their customs and traditions with indigenous vegetation and fauna has been recognised and provided for. Adverse effects on indigenous biodiversity values in SEAs must be avoided, remedied or mitigated where there is a reduction in historical, cultural and spiritual association held by Mana Whenua. Indigenous biodiversity values in SEAs are to be enhanced through providing for the role of Mana Whenua as kaitiaki and for the practical exercise of kaitiakitanga in restoring and enhancing areas.</i></p>
Policy B6.3.2(2)	

Provision	Comment
<p>Policy B6.3.2(5)</p> <p>Integrate Mana Whenua values, mātauranga and tikanga when giving effect to the National Policy Statement on Freshwater Management 2014 in establishing all of the following:</p> <p>(a) water quality limits for freshwater, including groundwater;</p> <p>(b) the allocation and use of freshwater resources, including groundwater; and</p> <p>(c) integrated management of the effects of the use and development of land and freshwater on coastal water and the coastal environment.</p>	<p>I refer to the AEE (Attachment 1) which states:</p> <p><i>Significant adverse effects will be mitigated through re-creation of stream typology, appropriate riparian restoration and through avoiding culverts in SEAs. The Project will not impact any scheduled cultural heritage sites. Other effects, including stream loss associated with culverting will be mitigated through planting and restoration of naturally occurring functions of ecological environments.</i></p> <p><i>The integrated mitigation framework aligns with the principle of Ki Uta Ki Tai which aligns with the Māori world view and is consistent with policy C1 (a) of the NPSFM.</i></p> <p>I refer to the assessment of Ms. Holmes in her section 42A report on the associated resource consents application.</p>
B7.2 Indigenous biodiversity	
<p>Objective B7.2.1</p> <p>(1) Areas of significant indigenous biodiversity value in terrestrial, freshwater, and coastal marine areas are protected from the adverse effects of subdivision use and development.</p> <p>(2) Indigenous biodiversity is maintained through protection, restoration and enhancement in areas where ecological values are degraded, or where development is occurring.</p>	<p>As discussed in the section 4.2.2.7, adverse effects on terrestrial ecology and indigenous biodiversity can be adequately managed through mitigation measures. Acknowledging the loss of some high value ecological areas, mitigation measures in the form of Ecological offsets and restoration planting, will generally maintain indigenous biodiversity. In some instances, measures such as flyway mitigation can provide some adaptive capacity and provide small net positives in terms of ecological value.</p> <p>Sections 7 and 9.5.6 of the AEE states that as part of route selection, certain areas of higher value have been avoided all together to minimise effect on ecological values.</p> <p>Overall, the project is consistent with B7.2.1</p>
B7.3 Freshwater systems	
Objective B7.3.1 (2)	<p>I refer to the assessment of Ms. Holmes in her section 42A report on the associated resource consents application.</p>
Policies B7.3.2 (4),(6)	

Provision	Comment
B7.4 Coastal water, freshwater and geothermal water	
Objective B7.4.1 (4),(6)	I refer to the assessment of Ms. Holmes in her s42A report on the associated resource consents application.
Policy B7.4.2 (1),(7),(8),(9)	
B7.5 Air	
Objective B7.5.1 (1) The discharge of contaminants to air from use and development is managed to improve region-wide air quality, enhance amenity values in urban areas and to maintain air quality at appropriate levels in rural and coastal areas. (3) Avoid, remedy or mitigate adverse effects from discharges of contaminants to air for the purpose of protecting human health, property and the environment.	Mr. Crimmin's assessment (Attachment 3) concludes that construction dust management measures to be employed will adequately avoid significant health and amenity effects from the project. The project is consistent with RPS B7.5.1
Policy B7.5.2 (1) Manage discharge of contaminants to air from use and development to: a. avoid significant adverse effects on human health and reduce exposure to adverse air discharges; b. control activities that use or discharge noxious or dangerous substances; c. minimise reverse sensitivity effects by avoiding or mitigating potential land use conflict between activities that discharge to air and activities that are sensitive to air discharges; d. protect activities that are sensitive to the adverse effects of air discharges; e. protect flora and fauna from the adverse effects of air discharges; f. enable the operation and development of infrastructure, industrial activities and rural production activities that discharge contaminants into air, by providing for	

Provision	Comment
low air quality amenity in appropriate locations;	

4.7 Auckland Unitary Plan - Chapter D overlays

Chapter D provisions are addressed in section 11.2 of the AEE (Attachment 1). Table 2 below identifies the relevant Chapter D provisions and my assessment of the proposal against those provisions.

Table 2

Provision	Comment
D9 Significant Ecological Areas Overlay	
Objective D9.2(1) Areas of significant indigenous biodiversity value in terrestrial, freshwater, and coastal marine areas are protected from the adverse effects of subdivision, use and development.	<p>The AEE (Attachment 1) identifies the policy framework for D9 significant Ecological Areas as:</p> <p><i>managing effects by avoiding in the first instance, remedying, mitigating, and potential offsettingPolicies D9.3(1) (b) to (d) outline this hierarchy, and step through the options, finishing with the consideration of offsetting residual adverse effects where mitigation is not available.</i></p> <p>This is a fair summary and is reflected in the proposed mitigation measures addressing potential adverse ecological effects of the project. Section 4.3.4.1 of this report relies on the assessment of Mr. Rossaak.</p> <p>The project generally has demonstrated avoidance of sites of high to very high value. Recommended changes to the proposed draft condition with strengthen this minimisation of adverse effects as a transparent outcome. Recommended changes to the proposed draft conditions will ensure that long-term ecological benefits from replanting and offsets will be achieved with heightened confidence.</p>
Objective D9.2(2) Indigenous biodiversity values of significant ecological areas are enhanced.	
Objective D9.2(3) The relationship of Mana Whenua and their customs and traditions with indigenous vegetation and fauna is recognised and provided for.	

Provision	Comment
	Through a mixture of mitigation and offset proposals, the effects on SEAs will be appropriately managed. The project is consistent with the objectives of D9.
D10 Outstanding Natural Features and Outstanding Natural Landscapes	
<p>Objective D10.2(1)</p> <p>Auckland's outstanding natural features and outstanding natural landscapes are protected from inappropriate subdivision, use, and development.</p>	<p>As noted, the project route selection avoids scheduled OLs and affects one ONF (ID 49, Hōteu River incised meanders). At this point, the designation appropriately narrows to avoid the ONF as far as practicable.</p> <p>The AEE correctly identifies:</p>
<p>Objective D10.2(2)</p> <p>The ancestral relationships of Mana Whenua with outstanding natural features and outstanding natural landscapes are recognised and provided for.</p>	<p><i>Policy D10.2(3)(b) seeks to ensure that the provision of infrastructure is consistent with the protection of the values of the outstanding natural feature and Policy D10.2(4)(j) seeks consideration of the functional or operational need of any proposed infrastructure to be located within the outstanding natural feature.</i></p> <p>Mr. Brown has reviewed the NoR's potential effects on landscape and visual amenity effects. He considers that with the recommended changes to the proposed draft conditions and mitigation measures, adverse effects on the landscape would be limited and acceptable in the long term. Mana whenua will have the opportunity to provide input into the UDLF as well as other mitigation measures which can contribute to their cultural footprint within the area.</p> <p>Therefore I consider that the proposal is consistent with the objective.</p>

4.8 Auckland Unitary Plan - Chapter E Auckland-wide

Chapter E provisions are addressed in section 11.2 of the AEE (Attachment 1). Table 3 below identifies the relevant Chapter E provisions and my assessment of the proposal against those provisions.

Table 3

Provision	Comment
E1 Water quality and integrated management	
Objective E.1.2 (1)	I refer to the assessment of Ms. Holmes in her section 42A report on the associated resource consents application.
Policy E1.3 (11),(12),(14)	
E3 Lakes, rivers, streams and wetlands	
Objective E.3.2 (1),(2),(3),(4),(5),(6)	I refer to the assessment of Ms. Holmes in her section 42A report on the associated resource consents application.
E3.3 Policies (1),(2),(3),(4),(5),(6),(10),(11),(12),(13),(15)	
E11 Land disturbance – Regional	
Objective E11.2 (1),(2),(3)	I note that mitigation measures as well as the recommended changes to the proposed draft conditions will provide for accidental discovery consistent with the requirements of chapter E11. Otherwise, I refer to the assessment of Ms. Holmes in her section 42A report on the associated resource consents application.
Policy E11.3 (2),(3),(4),(5),(6),(7),(8)	
E14 Air quality	
Objective E14.2 (2),(4)	I refer to Mr. Crimmins assessment (Attachment 3) which concludes that construction dust management measures to be employed will adequately avoid significant health and amenity effects from the project. I consider that the construction air effects of the project is consistent with Objectives E14.2 (2) and (4). For the operational air effects, I refer to the assessment of Ms. Holmes in her section 42A report on the associated resource consents application.
Policy E14.3 (1),(3),(8)	
E15 Vegetation management and biodiversity	
Objective E15.2	

Provision	Comment
(1) Ecosystem services and indigenous biological diversity values, particularly in sensitive environments, and areas of contiguous indigenous vegetation cover, are maintained or enhanced while providing for appropriate subdivision, use and development.	The assessment against RPS Objective B7.2 and Chapter D9 applies. In brief, with proposed amendments to the proposed draft conditions, any adverse effects on ecosystems and indigenous biodiversity values can be appropriately mitigated.
Objective E15.2 (2) Indigenous biodiversity is restored and enhanced in areas where ecological values are degraded, or where development is occurring.	
E25 Noise and vibration	
Objective E25.2(1) People are protected from unreasonable levels of noise and vibration.	Objective E25.2(4) provides for the management of construction noise and vibration effects where they exceed standards. This recognise the temporary nature of the effects and to enable appropriate construction activities to occur. I refer to Ms. Wilkening's assessment and recommendations which concludes that subject to her recommended amendments to the proposed draft conditions, the proposed mitigation measures will ensure that adverse effects from construction and operational noise and vibration will be appropriately managed ensuring people are protected from unreasonable levels of noise and vibration. The project is consistent with Objective E25.2(1) and (4).
Objective E25.2(4) Construction activities that cannot meet noise and vibration standards are enabled while controlling duration, frequency and timing to manage adverse effects.	
E26 Infrastructure	

Provision	Comment
<p>Objective E26.2.1(7)</p> <p>The national significance of the National Grid is recognised and provided for and its effective development, operation, maintenance, repairs, upgrading and removal is enabled.</p>	<p>My understanding is that Transpower and the requiring authority has reached an agreed upon position with regards to conditions. In the absence of confirmation, the project will enable the effective operation, maintenance, repairs, and upgrading of the National Grid subject to amendment to proposed draft conditions.</p>

4.9 Alternative sites, routes or methods – section 171(1)(b)

The requiring authority does not have an interest in all the land and/or the effects of the works are likely to be significant. Therefore an assessment of alternative sites, routes or methods is required. The requiring authority's assessment of alternatives is set out in section 7 of the AEE (Attachment 1).

In brief the AEE explains that the process in the consideration of alternative routes, sites, and methods comprised three stages:

- Assessment of corridor options;
- Assessment of alignment options (including interchange options and tunnel alignment); and
- Refinement of Indicative Route to achieve the Indicative Alignment.

Sections 7.4.2 – 7.4.7 provided evidence of the detailed process of identifying and evaluating alternatives. The AEE provided important context in detailing iterative steps and process undertaken to reach the current corridor, indicative alignment, and design elements. As indicated above, it logically progressed from a strategic (inter-regional) level to corridor selection; then consideration of various alignment options; finally consideration of alternative options for elements such as interchange and tie-ins. I consider that the considerations at each stage are proportionate to the scale of detail, and that an appropriate range of factors and options was used to test assumptions.

For example, the requiring authority drew on the following studies to inform the alignment, and components that now comprise the project:

- SH1 & SH16 Strategy Study 2006-2008;
- Auckland to Whangārei Strategic Study and Network Plan 2009-2010;
- Puhoi to Wellsford Scheme Assessment: Scoping Report 2010;
- Warkworth to Wellsford Online Assessment 2010-2011;
- Warkworth to Wellsford Scheme Assessment (2010/2011 and 2016); and
- Detailed Business Case 2017 – 2019.

Section 7.5 of the AEE outlined the detailed considerations of alternatives during the indicative route design refinement stage. Alternatives at this stage was also informed by following feedback from Phase 1 engagement, outcomes of a Road Safety Audit and preliminary environmental and geotechnical investigation work.

The indicative route design refinement stage used multi-criteria analysis to evaluate the various options. This also included preliminary assessments of environmental effects by specialists in:

- Air quality;
- Landscape and visual effects
- Freshwater ecology;
- Terrestrial ecology;
- Noise and vibration;
- Groundwater;
- Operational water quality (stormwater management);
- Construction water quality (erosion and sediment control);
- Flooding;
- Heritage and archaeology;
- Cultural heritage; and
- Land contamination.

The AEE states:

This analysis, including the sensitivity testing, confirmed the previously identified preference for the options that formed the preferred alignment for the Phase 1 engagement in early 2017 were appropriate.

Warkworth Interchange refinement

Section 7.5.3 outlines the refinement process for the possible Warkworth interchange. 13 interchange options were considered using a refined multi-criteria analysis. The purpose of this was to:

- i) test specific issues raised in public consultation feedback from Phase 1 engagement;
- ii) fully evaluate Option I which had formed part of Phase 1 engagement, but was not assessed in detail prior to that; and
- iii) enable more detailed consideration of the potential environmental effects of the project by additional specialists to support the statutory approvals phase.

After the initial results, further evaluation took place incorporating updated traffic modelling to understand the effect of predicted growth in and around Warkworth. Additionally, the requiring authority confirmed three specific interchange criteria:

- *maintaining the free flow level of service that the travelling public (including the Warkworth community) would be accustomed to from the new P2Wk infrastructure;*

- *optimising to the extent practicable use of the infrastructure built for the P2Wk project; and*
- *not relying on local road connections, given uncertainty at that time as to the future local road network. (New roads and improvements to several local road projects are planned, but the timeframe for their construction completion relative to that of the Project is uncertain).*

Following all of the above processes and further considerations a recommendation was made to proceed with Option C as the preferred Warkworth Interchange option. A final road safety audit resulted in changes to the geometry of the Northbound on-ramps to provide better safety characteristics.

The detailed process for considering alternatives to the Warkworth Interchange is important because a number of submissions (JS 1, JS 6, NOR 4, NOR 7, NOR 8, NOR 10, NOR 11, and RC 30) were in opposition to the final, proposed design. The submission mainly relates to two broad themes:

1. That the Warkworth Interchange is over-engineered/require too much land
2. Provisions for a south Warkworth Interchange

My understanding is that these issues were raised during Phase 1 engagement and would have been considered as part of the requiring authority's consideration of alternatives. Mr. Williams on behalf of Warkworth Area Liaison Group (NOR 4) provides the most detailed submission on these two themes.

On the land requirement, Mr. Williams states:

The intersection proposed by NZTA is land hungry and carries the motorway right through to the old State Highway north of the town effectively severing the land further to the north and east from Warkworth and preventing it from ever being part of the town.

In my view there two relevant matters. Firstly, the proposed designation boundary is a more expansive land requirement than what is needed for the operation of the interchange. The wider boundary is to accommodate potential shifts in the route during final, detailed design, as well as to enable construction works to occur. Once built, the requiring authority will remove parts of the designation that are not needed for operation, maintenance, or mitigation of the State Highway. This is volunteered by the requiring authority as condition 1 to the NoR. Secondly, my understanding is that the land requirements reflect the specific design geometry and the requirements which emerged from the requiring authority's consideration of alternatives. I will provide further comment on this below.

On the provision for a southern interchange, Mr. Williams states:

'The NOR does not consider a southern connection for Warkworth. A southern intersection to Warkworth is an integral of the motorway system and must be included in the NOR application. The Designation should be modified to allow for the southern interchange.'

Mr. Williams provided technical commentary on some possible configurations of a southern interchange to Warkworth. It was his views that these options have not been adequately explored as part of the requiring authority's consideration of alternatives. While this may be a reasonable assumption, I am mindful that for the purposes of a NoR and its associated statutory tests under s 171(1)(b), adequate consideration has a clear, and precise meaning.

Northern end point

RC 40 and RC 41 seeks to extend the northern end point of the proposed state highway. Section 7.5.4 outlines the evaluation process for determining the northern end point. A road safety audit of the scheme assessment phase of the indicative identified safety concerns at the northern end point. In brief, the audit found the following issues:

- Statehighway ending at a 7.0 m wide bridge;
- No provision for cyclists;
- Approach Sight Distance from the left-hand curve to the bridge is short;
- No median protection through the bridge; and
- Poor sight distance to the intersection of Maeneene and Waimanu Roads with SH1.

Members of the public also raised concerns about the safety in this area during Phase 1 engagement. These relate to Maeneene Road, Waimanu Road and Vipond Road with the existing SH1. Two options were short-listed out of a range of options to resolve these issues. The two options were evaluated using the same multi-criteria analysis used for other aspects of the project. The discreet nature of focusing only on the end point of the project meant that Land Transport Management Act 2003 and engineering criteria became the determining factors for the multi-criteria analysis.

Alternative option and adequate consideration

From my planning perspective, the common theme underlying these two issues is the idea that the proposed alignment does not present the 'best' option. The Environment Court in *Waimairi District Council and Christchurch City Council*⁶ sets out the principle that the line of enquiry under s 171(1)(b) is whether the requiring authority has acted arbitrarily or given only cursory consideration into the alternatives. The onus is not for the requiring authority to make the best selection, but to demonstrate completeness of process.

The submission matters fall into the policy sphere in terms of what the objectives it is trying to achieve. It is my view that these matters are beyond this statutory process.

⁶ Waimari District Council v Christchurch City Council C30/83

I have seen no reasons to believe that the above overview is not an accurate description of the process undertaken by the requiring authority. The numbers of options investigated were extensive, and in my view, subject to robust scrutiny. I have no difficulty in finding that more than adequate consideration has been given to alternative sites, routes or methods for undertaking the work as required.

For completeness, Mr. Black has reviewed requiring authority's assessment of alternatives from a transport perspective. He concludes:

I believe that a robust assessment of the alternatives has been considered and these options have been developed in accordance with NZTA standard policies and procedures.

In my opinion, the information supplied demonstrates that the requiring authority has satisfied the requirements of section 171)(1)(b).

4.10 Necessity for work and designation – section 171(1)(c)

The requiring authority has set out its specific project objectives in Form 18 and section 2.2 of the AEE (Attachment 1).

The AEE concludes that the designation is reasonably necessary to achieve the project objectives, it states:

The Project is reasonably necessary for achieving these objectives because it will:

- *Improve safety performance compared to the existing SH1 with the Indicative Alignment designed to motorway standards and therefore, with the intended diversion of traffic to the new road, reduced incidents on the existing SH1;*
- *Support safe cycling and walking by the provision of linkages where feasible as part of the Project scope (such as across interchanges, onto SH1 at the northern tie in, on local roads where the Project passes over on a bridge structure;*
- *Improve freight performance in terms of reduced travel times, improved route quality and safety, resilience and travel time reliability;*
- *Improve route security and resilience of the state highway network north of Auckland through reducing the reliance on one main route (the current SH1);*
- *Reduce travel times and improved travel time reliability along the state highway network north of Auckland increasing accessibility across many parts of the Regions' road network;*
- *Improve the amenity of Wellsford and Te Hana through the removal of heavy truck movements through the townships, including improved air quality and reduction in noise levels and improving walkability; and*

- *Treat stormwater, reduce contaminant loads for two river catchments, reduce sediment load over time to the Kaipara Harbour, retire some land that contributes to the sediment load of the Kaipara Harbour, through landscaping and planting for mitigation and through design which will assist with more fuel efficient travel (through better gradients and less need to brake, accelerate and/or decelerate).*

The designation is considered to be reasonably necessary as follows:

- *It will enable the Transport Agency to achieve its objective under the LTMA;*
- *It is necessary for the Transport Agency to achieve the Project objectives;*
- *It will allow the Transport Agency and/or its authorised agents to undertake the works in accordance with the designation, notwithstanding anything contrary in the district plan components of the Auckland Unitary Plan: Operative in Part;*
- *It will allow the land required to be identified in the Auckland Unitary Plan: Operative in Part, giving a clear indication of the intended use of the land;*
- *The proposed construction date is a number of years away, and a designation of land is necessary to provide certainty for the Transport Agency and land owners;*
- *The designation is necessary to ensure that the Project can be constructed, operated and maintained with certainty and efficiently using a consistent suite of conditions;*
- *It will enable the Project to be undertaken in a comprehensive and integrated manner; and*
- *It will protect the proposed route from future development which may otherwise preclude the construction of the Project.*

I note that the Courts have confirmed that the phrase “reasonably necessary” does not mean “essential” or other absolute definitions.

I also note that none of the submissions in opposition challenged the objectives or the necessity of the project to achieve the objective.

Notwithstanding, for completeness Mr. Black has reviewed the NoR from a traffic perspective. He agrees with the requiring authority’s conclusion regarding the travel time savings; travel time reliability; and safety benefits of the project. He concludes:

In summary, I consider the route and designation are required to meet the project objectives prepared by NZTA.

Likewise, it is my view from a planning perspective the provision of an alternative route connecting Warkworth to the north of Te Hana will provide for route resilience (beyond the existing SH1) and that the project will provide connections to Warkworth, Wellsford, and Te Hana.

Given that above are fundamentally linked to the reasons raised by the AEE above; I am of the view that there is a clear logical link between the project and the delivery of the objectives set by the requiring authority.

Therefore, I consider that the works and designation are reasonably necessary to achieve the requiring authority's objectives.

4.11 Any other matter – section 171(1)(d).

Section 171(1)(d) requires the council to have particular regard to any other matter the territorial authority considers reasonably necessary in order to make a recommendation on the requirement. In this case the non-RMA documents are considered relevant.

The Rodney Local Board at their 15 July 2020 meeting passed resolution [RD/2020/78] to express their views on the project. Relevantly, the resolution states that the board move to:

- a) support the application Notice of Requirement for a new designation by NZTA for the construction and operation of a new state highway from Warkworth to north of Te Hana
- b) request provision is made for dedicated truck stop facilities within the future state highway corridor
- c) appoint Local Board Member D Hancock and Chairperson P Pirrie as the alternate to speak to the local board views at a hearing on the Notice of Requirement.

Table 11 – 1 (p418) of the AEE (Attachment 1) provides a discussion of other matters directly relevant to the project. Having turned my mind to each document raised, I am of the view that the AEE has correctly identified the relevant matters. I therefore I adopt them where appropriate as follows:

Matter	Discussion
<i>Economic development policies</i>	
<i>Tai Tokerau Northland Economic Action Plan 2016</i>	<i>The NEAP identifies Connecting Northland including the route protection and completion of the P2Wk and this Project including improvements between Whangārei and Wellsford as enablers to support key economic growth opportunities.</i>
<i>Transport Planning</i>	
<i>Government Policy Statement on Land Transport 2018/19-2027/28</i> <i>National Land Transport Programme 2018-2021</i>	<i>The four strategic priorities of the GPS 2018 are safety, access, environment and value for money.</i> <i>The NLTP, developed under the GPS 2018, focuses on “creating a safe, resilient, well-connected and multimodal transport system that enables new housing opportunities, liveable cities and sustainable economic development in regional New Zealand.”⁷</i> <i>As discussed in section 2.3.1 of the AEE the Project aligns with both the GPS and NLTP. Notably the project will contribute to the safety and resilience of the southern part of the Auckland to Whangārei corridor.</i>

⁷ National Land Transport Plan 2018, page 7

Matter	Discussion
<i>Connecting Northland 2017, The Transport Agency</i>	<i>Connecting Northland is an integrated transport approach which recognises the importance of improving transport access within a multi-modal environment. The vision for the Auckland to Whangārei corridor is a safe corridor which provides reliable journey times to support the economic growth of the region and access to key markets. The Project is identified as one of four major infrastructure schemes to progress to construction in the next 30 years in Connecting Northland.</i>
<i>National Freight Demand Study 2014, Ministry of Transport</i>	<i>The NFDS forecasts that by 2042, freight volumes between Northland and Auckland could increase by 68% from 2.8 to 4.71 million tonnes. It also predicts that freight movements originating or terminating in Northland could increase by 38% from 30.2 to 41.6 million tonnes. The NFDS concludes that truck movements are likely to grow significantly in the future. The Project will improve road freight performance between the Auckland and Northland Regions.</i>
<i>Upper North Island Freight Strategy 2013, Upper North Island Strategic Alliance</i>	<i>More than fifty five percent of New Zealand's freight travels through the Northland, Auckland, Waikato and Bay of Plenty regions, and collectively these regions generate over fifty percent of New Zealand's gross domestic product. This is predicted to increase in the future. The strategy promotes a strategic and integrated approach towards land use and transport planning and identifies constraints on the Upper North Island's strategic rail and road networks. The problems for the existing SH1 corridor are consistent with a number of the critical freight issues that the Upper North Island Freight Strategy seeks to address. The Project will improve road freight performance between the Auckland and Northland Regions.</i>
<i>Auckland Regional Land Transport Strategy 2010, Auckland Regional Council</i>	<i>A key emphasis in the ARLTS is reducing congestion for freight vehicles. The Project will improve journey times and journey time reliability for freight.</i>
<i>Auckland Regional Land Transport Plan 2018-2028, Auckland Transport, Auckland Council, The Transport Agency and KiwiRail</i>	<i>The ARLTP outlines how transport priorities will be delivered over a ten year period and implements the NLTP. The ARLTP identifies the Project as an improvement project with inter-regional significance.</i>

Matter	Discussion
<i>Auckland Integrated Transport Programme 2013, Auckland Transport</i>	<i>The Auckland Integrated Transport Programme was created in response to the Auckland Plan and sets out the 30 year investment programme to meet the transport priorities that are contained within the Auckland Plan. The Project is identified as a transport project where investment is to be directed.</i>
<i>Iwi management plans</i>	
<i>Kawerau a Maki Trust Resource Management Statement 1994</i>	<p><i>This Statement outlines the concerns and goals the Kawerau a Maki Trust have with regard to the sustainable management of the taonga within the tribal area of Te Kawerau. The Statement sets out the objective and policies with respect to their responsibilities as Kaitiaki and matters of resource management significance.</i></p> <p><i>Consultation with Te Kawerau a Maki has not identified any specific sites. However, consideration has been given to the identification and recognition of mana whenua values, enabling the management of effects on cultural values associated with water, CMA, landscape and flora and fauna.</i></p>
<i>Interim Ngati Paoa Regional Policy Statement 2013</i>	<i>This Statement was developed for Auckland Council to take into account when preparing the AUP(OP). It identifies sites and areas of importance to Ngati Paoa, including within the Mahurangi catchment. There are no AUP(OP) scheduled sites or places of significance to Mana whenua within the Project area.</i>
<i>Ngati Paoa Resource Management Plan 1996</i>	<p><i>This Resource Management Plan focuses on the four most important resource management issues for Ngati Paoa. These are the issues of consultation, issues surrounding the recognition and protection of waahi tapu sites, the need for redress of breaches of the Treaty of Waitangi and the issue of economic development.</i></p> <p><i>Ngati Paoa has requested they be kept up-to-date throughout development of the Project and this will continue. There are no known waahi tapu sites located within the Project area.</i></p>
<i>Environmental strategies</i>	
<i>Mahurangi Action Plan 2010</i>	<p><i>The Mahurangi Action Plan is an Auckland Council strategic plan for the Mahurangi Catchment (2010-2030). It has a vision of maintaining a healthy Mahurangi River and Harbour. The MAP identifies key values and issues including:</i></p> <ul style="list-style-type: none"> <i>• Sedimentation of the Harbour environment;</i> <i>• Maintaining a Commercial Asset; and</i> <i>• Natural Heritage, Biodiversity and Ecological Values.</i>

Matter	Discussion
	<p>The plan contains objectives and priority actions for 2010-2016, as well as medium to long term actions that are relevant to the project timescale. The Project has been designed to be consistent with the objectives of the plan.</p>
<p><i>Kaipara Harbour Integrated Strategic Plan of Action 2011</i></p>	<p>This strategic plan for the Kaipara Harbour (2011-2021) was developed by the Integrated Kaipara Harbour Management Group (IKHMG). The plan is the first stage of managing Kaipara ecosystems, harbour and catchment in a way that will achieve integrated management, with the aim to achieving a healthy and productive Kaipara Harbour. The KHIPA identifies key issues within the harbour:</p> <ul style="list-style-type: none"> • Declining native biodiversity; • Declining fish and shellfish stocks; and • Increased sedimentation and poor water quality. <p>The KHIPA contains long-term objectives and goals. The Project has been designed to be consistent with the objectives of the plan.</p>
<p><i>The New Zealand Biodiversity Strategy 2000-2020</i></p>	<p>This Strategy establishes a strategic framework for action, to conserve and sustainably use and manage New Zealand's biodiversity. The main objectives are to promote community and individual action, protect Mana Whenua interests, halt the decline of New Zealand's indigenous species and maintain the genetic resources of introduced species which contribute to the wellbeing of New Zealanders. The Project responds to this strategic framework by recognising effects on indigenous biodiversity and mitigating for any loss.</p>
<p><i>Proposed National Policy Statement on Indigenous Biodiversity 2011</i></p>	<p>The proposed National Policy Statement on Indigenous Biodiversity was issued in 2011 for consultation, though has not been finalised. This NPS is relevant to the Project given its works impact on indigenous biological diversity (which includes naturally uncommon ecosystems, indigenous vegetation or habitats associated with wetlands).</p> <p>The Project generally affects only pockets of indigenous vegetation and habitats. These effects have been identified and assessed in the Ecology Assessment. The mitigation proposed in section 10 of this AEE is informed by the findings in that assessment and will ensure that the Project will maintain biodiversity through mitigation and management plans where there may be an adverse effect.</p>

Matter	Discussion
<i>Auckland Indigenous Biodiversity Strategy 2012</i>	<p><i>The Auckland Indigenous Biodiversity Strategy seeks to protect, maintain and restore the indigenous biodiversity within Auckland. This involves conserving as many species as possible with particular attention being given to those species which are threatened, implementing iwi values, educating Auckland's communities and fostering guardianship and the collaboration of governmental organisations.</i></p> <p><i>Biodiversity has been a key consideration of the Project in particular with efforts to avoid, remedy or mitigate the potential adverse construction effects and to achieve post construction benefits.</i></p>
Local Government Act policies	
<i>Auckland Plan 2050 (June 2018)</i>	<p><i>The Auckland Plan 2050 sets the long-term strategic direction for Auckland over the next 30 years. The Plan identifies "the development of quality transport links within Warkworth, as well as between Warkworth, Northland and the rest of Auckland to be critical to supporting the town's future growth"⁸.</i></p> <p><i>The Project supports this aspiration.</i></p>
<i>Rodney Local Board Plan 2017</i>	<p><i>One of the outcomes of the Rodney Board Plan is to get around easily and safely. The Plan outlines that transport infrastructure needs to keep pace with the needs of the community. The Local Board seeks to advocate to the Transport Agency for higher prioritisation of Rodney transport projects, such as this one.</i></p>
Other guidance	
<i>NZ Urban Design Protocol 2005</i>	<p><i>The Transport Agency is a signatory to the NZ Urban Design protocol. The Urban Design Protocol identifies seven essential design qualities that together create quality urban design:</i></p> <ul style="list-style-type: none"> <i>• Context: seeing buildings, places and spaces as part of whole towns and cities</i> <i>• Character: reflecting and enhancing the distinctive character, heritage and identity of our urban environment</i> <i>• Choice: ensuring diversity and choice for people</i> <i>• Connections: enhancing how different networks link together for people</i>

⁸ <https://www.aucklandcouncil.govt.nz/plans-projects-policies-reports-bylaws/our-plans-strategies/auckland-plan/development-strategy/future-auckland/Pages/what-warkworth-look-like-future.aspx>

Matter	Discussion
	<ul style="list-style-type: none"> • <i>Creativity: encouraging innovative and imaginative solutions</i> • <i>Custodianship: ensuring design is environmentally sustainable, safe and healthy</i> • <i>Collaboration: communicating and sharing knowledge across sectors, professions and with communities.</i> <p><i>A Planning Version ULDF has been prepared for the Project which has had close regard to the above.</i></p>

4.12 Designation lapse period extension – section 184(1)(c)

Section 184 of the RMA states that designations lapse within five years, if not given effect to, or an extension has been obtained under section 184(1)(b), or unless the designation in the AUP sets a different lapse period under section 184(1)(c).

The requiring authority has requested a 15-year lapse period for the NoR. The requiring authorities reasons for this request are stated in section 6.6.1 of the AEE.

Section 184 of the Act gives discretion to alter the lapse period for a designation from the default 5 years. The Environment Court decision in *Beda Family Trust v Transit NZ* A139/04 makes the following statement on the exercise of that discretion in considering a longer lapse period:

The decision has to be exercised in a principled manner, after considering all of the circumstances of the particular case. There may be circumstances where a longer period than the statutory 5 years is required to secure the route for a major roading project. Such circumstances need to be balanced against the prejudicial effects to directly affected property owners who are required to endure the blighting effects on their properties for an indeterminate period. The exercise of the discretion needs to be underlain by fairness.

Environment Court decisions on disputed designation lapse periods are noted in the following table for reference purposes.

Case	Requiring authorities requested lapse period	Court decision lapse period
Beda Family Trust v Transit NZ	20 years	10 years

Meridian 37 Ltd v Waipa District Council	15 years	5 years
Hernon v Vector Gas Ltd	10 years	5 years
Queenstown Airport Corporation Ltd	10 years	5 years

I consider the forward planning route protection nature of the project consistent with sound planning practice, particularly so for strategic infrastructure. However, this needs to be carefully weighed against the potential social effects of this extended lapse date on those affected by the designation.

I note that most of the potential adverse effects are associated with the construction period, and these will occur regardless of the lapse period. Conversely, a longer lapse period may allow for people affected to decide accordingly.

Having regard to these circumstances I recommend a lapse period of 15 years for the designation(s).

4.13 Part 2 of the Resource Management Act 1991

The purpose of the RMA is set out in section 5(1) which is: *to promote the sustainable management of natural and physical resources.*

Sustainable management is defined in section 5(2) as:

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

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

Section 6 of the RMA sets out the matters of national importance which must be recognised and provided for.

Section 7 of the RMA sets out other matters which shall be given particular regard to.

Section 8 of the RMA requires the principles of the Treaty of Waitangi to be taken into account.

I consider that the project will give effect to s 5 of the Act by:

- Enabling people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety through the provision of infrastructure that will connect people and goods with communities, improve safety, and better and more reliable travel times;
- Providing transport infrastructure that will meet the reasonably foreseeable transport needs of future generations; and
- Avoiding, remedying, or mitigating any adverse effects of activities on the environment during construction and operation, through specific mitigation measures which are to be included in the conditions for the designation.

Relevantly, I consider that the following s6 matters have been recognised and provided for:

- s6(b) – while the designation boundary overlaps an ONF, the indicative alignment does not, ensuring the protection of outstanding natural features and landscapes
- s6(c) – the project generally avoids areas of significant indigenous vegetation and significant habitats of indigenous fauna; potential adverse effects on indigenous fauna and vegetation will be minimised during construction and operation through mitigation and offsetting measures included in the conditions for the designation
- s6(e) – the project provides opportunity to maintain the relationship between Mana Whenua and their culture and traditions with waahi tapu, and other taonga through measures which are included in the conditions for the designation
- s6(f) – The HHMP and other conditions in the designation will remedy, or mitigate potential adverse effects on historic heritage

Also relevantly:

- In applying mitigation measures which are included in the conditions to the designation careful consideration was given to how best to maintain the amenity effects (s7(c)) of nearby residents; these include avoiding, remedying, or mitigating construction and operational, noise and vibration; dust; and visual amenity effects; the project will enhance the amenity values Warkworth, Wellsford, and Te Hana by off-lining the existing Statehighway 1
- In applying mitigation measures which are included in the conditions to the designation careful consideration was given to how best to mitigate potential adverse effects on the intrinsic values of ecosystems (7(d)) and the maintenance of the quality of the environment (s.7(f)).

5 Conclusions

The requiring authority has lodged a NoR under section 168 of the RMA for the construction, operation and maintenance of a new state highway and associated activities between Warkworth and north of Te Hana.

It is recommended that the late submissions for First Gas be accepted, under Section 37 of the RMA.

It is recommended that the requiring authority provide clarification on the following technical matters at the hearing, however the lack of this information is unlikely to affect my conclusions on the application:

- Any agreements reached between submitters and the requiring authority;
- Protected premise or facilities (e.g. for 214 and 125 Kaipara Flats Road and 177 Rustybrook Road) that are now being predicted to be subject to material change in noise levels at the hearings (refer to section 4.3.4.8 of this report).

That the notice of requirement should be confirmed subject to conditions and with modifications, for the following reasons.

- The notice(s) of requirement and associated works are reasonably necessary for achieving the objectives of the requiring authority.
- Adequate consideration has been given to alternative sites, routes or methods of undertaking the work identified in the notice(s) of requirement.
- The notice(s) of requirement is generally consistent with the relevant AUP provisions.
- The notice(s) of requirement is generally in accordance with Part 2 of the RMA and; and relevant national environmental standards and national policy statements.
- Restrictions, by way of conditions, imposed on the designation can avoid, remedy or mitigate any potential adverse environmental effects.

6 Recommendation and conditions

6.1 Recommendation

Subject to new or contrary evidence being presented at the hearing, and the requiring authority supplying adequate responses on issues raised in the body of the report, pursuant to section 171(2) of the RMA, **it is recommended that the notice of requirement be confirmed**, subject to the amended and additional conditions and modifications.

That pursuant to section 171(3) of the RMA the reasons for the recommendation are as follows:

The notice of requirement is consistent with Part 2 of the RMA in that it enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety.

In terms of section 171(1)(a) of the RMA, the notice of requirement is consistent with and gives effect to the relevant national environmental standards, national policy statements and the AUP.

In terms of section 171(1)(b) of the RMA, adequate consideration has been given to alternative sites, routes or methods for undertaking the work.

In terms of 171(1)(c) of the RMA, the notice of requirement is reasonably necessary to achieve the requiring authority's objectives.

Restrictions, by way of conditions attached to the notice of requirement have been recommended to avoid, remedy or mitigate adverse environmental effects associated with the works.

6.2 Recommended conditions

These recommend amendments to the proposed draft conditions are summarised below with proposed additional text shown as underlined and proposed deletions shown ~~struck through~~.

DESIGNATION CONDITIONS

Designation for a public work, being the construction, operation and maintenance of a new state highway and associated activities between Warkworth and north of Te Hana

Advice note: The scope of this Designation does not cover plantation forest activities defined by the Resource Management (National Environmental Standards for Plantation Forestry) Regulations 2017 and related activities in the commercial plantation forest (Mahurangi Forest) located west of SH1. Separate statutory authorisations may be required for those activities.

DEFINITIONS

The table below defines the acronyms and terms used in the conditions. Defined terms are capitalised throughout the conditions.

Acronym / Term	Definition / Meaning
Active Roost Site	An area within the home range of a bat population and where there is potential for bats to be roosting in any suitable tree or cluster of trees
Auckland Transport	The Chief Executive of Auckland Transport or authorised delegate
AUP(OP)	Auckland Unitary Plan Operative in Part
Avifauna	Indigenous bird species of NZ
Best Practicable Option or BPO	Best Practicable Option as defined in section 2 of the Resource Management Act 1991.
Building-Modification Mitigation	As defined in New Zealand Standard NZS 6806:2010: Acoustics – Road-traffic noise – New and altered roads
CAQMP	Construction Air Quality Management Plan
CNVMP	Construction Noise and Vibration Management Plan
CIR	Cultural Indicators Report
Construction Works	Activities undertaken to construct the Project excluding Enabling Works
COPTTM	NZ Transport Agency Code of Practice for Temporary Traffic Management
CTMP	Construction Traffic Management Plan

Acronym / Term	Definition / Meaning
Day(s)	Has the same meaning as “working day” under section 2 of the RMA
Designation	The designation included in the AUP(OP)
EMP	Ecology Management Plan
Ecological Site	The areas identified on Maps 18 – 20
Ecological Value	The value of an Ecological Site (i.e. Low-Moderate or High-Very High) identified using the criteria in the EIANZ Guidelines
EIANZ Guidelines	Ecological Impact Assessment Guidelines for New Zealand 2nd Edition, EIANZ, 2018
Enabling Works	<p>Preliminary construction activities as follows:</p> <ul style="list-style-type: none"> • geotechnical investigations (including trial embankments) • formation of access for geotechnical investigations • establishment of site yards, site offices, site entrances and fencing • constructing and sealing site access roads • demolition or removal of buildings and structures • relocation of services • establishment of mitigation measures (such as erosion and sediment control measures, temporary noise walls, earth bunds and screen planting)
EWCMMP	Enabling Works Cultural Monitoring Plan
EWCTMP	Enabling Works Construction Traffic Management Plan
Fauna	Indigenous fauna of NZ, excluding fauna as defined in Avifauna above
Habitable Space	As defined in New Zealand Standard NZS 6806:2010: Acoustics – Road-traffic noise – New and altered roads
HAMP HHMP	Historic Heritage and Archaeology Management Plan
Heavy Vehicle	A motor vehicle having a gross laden weight exceeding 3500 kg
Highly Sensitive Receiver (HSR)	<p>Residential dwellings within:</p> <ul style="list-style-type: none"> • 200m of the Designation boundary; • 50m of sealed access roads used for Project Works up to 500 m outside of the Designation boundary; and • 100m of unsealed access roads used for Project Works outside of the Designation boundary.
HNZPT	Heritage New Zealand Pouhere Taonga

Acronym / Term	Definition / Meaning
HNZPTA	Heritage New Zealand Pouhere Taonga Act 2014
Manager	The <u>Team</u> Manager – <u>Compliance Monitoring Resource Consents</u> , of Auckland Council, or authorised delegate
Mana Whenua	Māori with ancestral <u>who can demonstrate customary rights through occupation to resources in within the Project area, and who have responsibilities as kaitiaki over their tribal lands, waterways and other taonga</u>
Mitigation Sites	The Mitigation Sites identified on Maps 7 – 12
Network Utility Operation(s)/Operator(s)	As defined in section 166 of the RMA
NMP	Noise Mitigation Plan
Noise Criteria Categories	The groups of preference for sound levels established in accordance with New Zealand Standard NZS 6806:2010: <i>Acoustics – Road-traffic noise – New and altered roads</i> when determining the BPO for noise mitigation (Categories A, B and C)
NZS 6803	New Zealand Standard 6803:1999: <i>Acoustics – Construction Noise</i>
NZS 6806	New Zealand Standard NZS 6806:2010: <i>Acoustics – Road-traffic noise – New and altered roads</i>
PPF	Protected Premises and Facilities as defined in New Zealand Standard NZS 6806:2010: <i>Acoustics – Road-traffic noise – New and altered roads</i>
Project	The construction, maintenance and operation of the Ara Tūhono Warkworth to Wellsford Project, which extends from Warkworth to north of Te Hana
Project Liaison Person	The person or persons appointed for the duration of the construction phase of the Project to be the main and readily accessible point of contact for persons affected by the construction work
Project Works	All activities undertaken to construct the Project (Construction Works and Enabling Works) and including ecological and landscape mitigation activities) but excluding operation of the highway
RMA	Resource Management Act 1991
SCMP	Stakeholder and Communications Management Plan

Acronym / Term	Definition / Meaning
SH1	State Highway 1
SSTMP	Site Specific Traffic Management Plan
Stage(s)	A specific works area or new land disturbing activity associated with construction of the Project as nominated by the Consent Holder.
Stormwater Management Wetland	A permanent stormwater management device in the form of a constructed wetland designed to manage stormwater runoff volume, flow and/or contaminant loads prior to discharge
Structural Mitigation	As defined in New Zealand Standard NZS 6806:2010: <i>Acoustics – Road-traffic noise – New and altered roads</i>
Suitably Qualified and Experienced Person	A person (or persons) who can provide sufficient evidence to demonstrate their suitability and competence
Threatened Species	Species listed as per the Department of Conservation's <i>New Zealand Threat Classification System</i> (NZTCS)
TTM	Temporary Traffic Management
ULDF	Urban and Landscape Design Framework
ULDMP	Urban and Landscape Design Management Plan
Wetland(s)	Includes permanently or intermittently wet areas, shallow water, and land water margins that support a natural ecosystem of plants and animals that are adapted to wet conditions, excluding Stormwater Management Wetlands.

Maps:

Maps 1 – 6	Representative Watercourses
Maps 7 – 12	Mitigation Sites
Map 13	Fauna Habitat and Flyway mitigation area
Map 14 – 16	Bridge Structures in Watercourses
Map 17	Crossing of the Kourawhero Stream and associated wetland complex
Maps 18 – 20	Ecological Sites

GENERAL

New Condition (1A)

The project shall, subject to final detailed design, be undertaken in general accordance with information provided by the Requiring Authority in the Notice of Requirement (dated 20 March 2020) and supporting documents, (as updated by information provided by the Requiring Authority up until the close of the Hearing) being:

- a) Assessment of Environmental Effects report (contained in Volume 1 of the Notice of Requirement suite of documents, dated 20 March 2020);
 - b) Supporting environmental assessment reports (contained in Volume 2 of the Notice of Requirement suite of documents, dated July 2019);
 - c) Plan sets:
 - i. Land requirement plans (contained as Attachment B to the Notice of Requirement Application, dated 20 March 2020)
 - ii. Engineering Design Drawings (contained as Volume 3 – Drawing Sets of the Notice of Requirement suite of documents, dated 20 March 2020)
 - iii. Conditions maps 1-20 attached at Appendix 1 to these Conditions
1. As soon as practicable following completion of construction of the Project, the Requiring Authority shall give notice to Auckland Council in accordance with section 182 of the RMA for removal of those parts of the designation that are not required for the long-term operation, maintenance and mitigation of effects of the State highway.

Lapse

2. The designation shall lapse if not given effect to within 15 years from the date on which it is included in the District Plan under section 175 of the RMA.

Construction conditions

3. Conditions 4 to 88 relate to construction of the Project and only apply to construction activities. Once construction of the Project is complete these conditions, will no longer apply and can be removed, except for conditions that specify an obligation which continues after construction.

Management and outline plan process

4. The Requiring Authority shall prepare, submit to Auckland Council, ~~and implement the Designation management plans in accordance with Table 1~~ and implement the Designation management plans in accordance with Table 1 and the specific Designation conditions.
5. The Requiring Authority may prepare management plans in parts or in Stages to address specific activities or to reflect the staged implementation of the Project Works.
6. The Requiring Authority shall not commence Project Works within the area to which a management plan applies until the OPW has been considered in accordance with s176A of the RMA or the required management plan(s) has been certified ~~or is deemed to be certified~~ or otherwise provided to the Council for information.

Table 1: Management Plan Table

Management Plan	Decision Pathway	When to submit	Response time from Manager	Duration for implementation
Stakeholder and Communications	To Manager for information	At least 20 days prior to start of Project Works	N/A	Duration of Project Works
Construction Noise and Vibration	Outline Plan of Works	Prior to start of Project Works	Within statutory timeframes	Duration of Project Works
Noise Mitigation	Outline Plan of Works	Prior to the Project becoming operational	N/A	Throughout the operation of the State Highway
Construction Traffic	Outline Plan of Works	Prior to start of Construction Works	Within statutory timeframes	Duration of Construction Works
Enabling Works Traffic	To Road Controlling Authority for approval via COPTTM process	Prior to start of relevant Enabling Works	N/A	Duration of Enabling Works
Site Specific Traffic	To Road Controlling Authority for approval via COPTTM process	Prior to using the relevant public road	N/A	Duration of use of public road for construction activities.
Enabling Works Traffic	To Manager for Information (approval via COPTTM process)	Prior to start of relevant Enabling Works	N/A	Duration of Enabling Works
Urban and Landscape Design Framework	Outline Plan of Works	Prior to start of Project Works	Within statutory timeframes	Duration of Project Works
Urban and Landscape Design Management Plan/s	Outline Plan of Works	Prior to start of Construction Works in relevant sector	Within statutory timeframes	Duration of Project Works
Ecology	Outline Plan of Works	Prior to start of Project Works	Within statutory timeframes	As specified in the EMP
Biosecurity Plan	Outline Plan of Works	Prior to start of Construction	Within statutory	Duration of Project Works

Management Plan	Decision Pathway	When to submit	Response time from Manager	Duration for implementation
		<u>Project Works</u>	timeframes	
Historic Heritage and Archaeology	Outline Plan of Works	Prior to start of Project Works	Within statutory timeframes	Duration of Project Works
Construction Air Quality	Outline Plan of Works	Prior to start of Construction Works	Within statutory timeframes	Duration of Construction Works

New Condition (6A): Review process for management plans

The SCMP, CNVMP, CTMP, ULDMP/s, EMP, HHMP, Biosecurity Plan, and CAQMP shall be reviewed at least annually or as a result of a material change to the project or to address unforeseen adverse effects arising from construction or unresolved complaints. Such a review may be initiated by either Auckland Council or the Requiring Authority. The review shall take into consideration:

- a) Compliance with designation conditions, the Cultural Indicators Report, SCMP, CNVMP, CTMP, ULDF, ULDMP/s, EMP, HHMP, Biosecurity Plan, and CAQMP (including EWTMPs and SSTMPs) and material changes to these plans;
- b) Any changes to construction methods;
- c) Key changes to roles and responsibilities within the project;
- d) Changes in industry best practice standards;
- e) Changes in legal or other requirements;
- f) Results of monitoring and reporting procedures associated with the management of adverse effects during construction;
- g) Any comments or recommendations received from Auckland Council regarding SCMP, CNVMP, CTMP, ULDF, ULDMP/s, EMP, HHMP, Biosecurity Plan, and CAQMP (including EWTMPs and SSTMPs); and
- h) Any unresolved complaints and any response to the complaints and remedial action taken to address the complaint as required under Conditions 11-13.

New Condition (6B)

A summary of the review process shall be kept by the Requiring Authority, provided annually to the Manager, and made available to the Manager upon request.

CONSTRUCTION CONDITIONS

Stakeholder and Communications

Project Liaison Person

7. The Requiring Authority shall appoint a Project Liaison Person for the duration of Project Works to be the main and readily accessible point of contact for persons interested in, or affected by, Project Works. The Project Liaison Person's contact details shall be readily available via the internet (e.g. via the Project website) and the Project Liaison Person shall be contactable at all times during Project Works.

Stakeholder and Communications Management Plan

8. The Requiring Authority shall prepare a Stakeholder and Communications Management Plan (SCMP) prior to the start of Project Works. The purpose of the SCMP is to set out how the Requiring Authority will communicate with the public and stakeholders for the duration of Project Works.
9. The SCMP shall set out the framework for how the Requiring Authority will:
 - a. Engage with stakeholders such as directly affected landowners and immediately adjoining landowners, educational facilities, iwi and hapu groups, community groups, local businesses and representative groups, residents' organisations, other interested groups and individuals, Auckland Council, Auckland Transport and adjacent local authorities, the Rodney Local Board, and Network Utility Operators;
 - b. Inform the communities of Warkworth, Wellsford and Te Hana of construction progress, including proposed hours of work;
 - c. Engage with the communities to foster good relationships and to provide opportunities for learning about the Project; ~~and~~
 - d. Provide information on key Project milestones; and
 - e. Make each management plan publicly available once a management plan is finalised, and for the duration of project works.
10. The Requiring Authority shall prepare the SCMP in consultation with:
 - a. Auckland Council, with respect to coordination of communications with the public and stakeholders;
 - b. Auckland Transport, with respect to communications relating to Project Works or activities that interface with the local road network; and
 - c. Mana Whenua, with respect to provisions that relate specifically to communications with iwi and hapu groups.

Complaints Management Process

11. The Requiring Authority shall keep and maintain a complaints record ("Complaints Record"), recording any complaints received in relation to Project Works for the duration of the Project Works.
12. The Complaints Record shall include:
 - a. The name and address (if known) of the complainant;
 - b. Details of the complaint;
 - c. The date and time of the complaint, and the location, date and time of the alleged event giving rise to the complaint;
 - d. The weather conditions at the time of the complaint (as far as reasonably practicable), including wind

direction and approximate wind speed if the complaint relates to air quality or noise and where weather conditions are relevant to the nature of the complaint;

- e. Any other activities in the area, unrelated to the Project that may have contributed to the complaint, such as construction undertaken by other parties, fires, traffic accidents or unusually dusty conditions generally;
- f. Measures taken to respond to the complaint or confirmation of no action if deemed appropriate; and
- g. The response provided to the complainant.

13. The Requiring Authority shall respond to complaints related to Project Works as soon as practicable (within 10 working days).

14. The Requiring Authority shall make the Complaints Record available to the Manager upon request.

Mana Whenua

Cultural Indicators Report

15. At least 6 12 months prior to start of detailed design of the Project, the Requiring Authority shall invite Mana Whenua to prepare a Cultural Indicators Report for the Project, or to nominate a person or organisation to prepare a Cultural Indicators Report on their behalf. The Cultural Indicators Report should be completed at least 6 months before the start of detailed design. The purpose of the Cultural Indicators Report is to assist with the protection and management of Ngā Taonga Tuku Iho (treasures handed down by our ancestors) during Construction Works.

16. The Cultural Indicators Report should:

- a. Identify cultural sites, landscapes and values that have the potential to be affected by Construction Works;
- b. Set out the desired outcomes and recommended methods for management of potential effects on cultural sites, landscapes and values;
- c. Identify cultural indicators of traditional association, mahinga kai and cultural stream health as relevant to the Construction Works;
- d. Set out recommended methods to measure the effects on identified cultural indicators during Construction Works;
- e. Identify opportunities for restoration and enhancement of Mauri and mahinga kai within the Project area; and
- f. Identify cultural values that should be acknowledged in the development of the ULDF, the EMP, the HAHMP and the Cultural Monitoring Plan for the Construction Works.

17. The Requiring Authority shall discuss the recommended methods set out in the Cultural Indicators Report with Mana Whenua and implement the methods where practicable to do so.

18. Conditions 16 and 17 will cease to apply if:

- a. Mana Whenua have been invited to prepare a Cultural Indicators Report at least 12 months prior to start of Construction Works; and
- b. Mana Whenua have not provided a Cultural Indicators Report within six months prior to start of Construction Works.

Cultural Artworks Plan

19. At least 18 months prior to start of Construction Works, the Requiring Authority shall invite Mana Whenua to prepare a cultural artworks plan to identify possible artworks or features to reflect sites and values of significance to Mana Whenua. Condition 19 will cease to apply if Mana Whenua have been invited to prepare a Cultural Artwork Plan and have not provided it within six months prior to start of Construction Works.

Cultural Monitoring Plan (Construction)

20. At least 18 months prior to start of Construction Works, the Requiring Authority shall prepare a Cultural Monitoring Plan. The plan shall be prepared by a Suitably Qualified and Experienced Person who is identified in collaboration with Mana Whenua. Collaboration shall be completed within 30 Days of initiation by the Requiring Authority. The purpose of the cultural monitoring plan is to identify methods for undertaking cultural monitoring.
21. The Cultural Monitoring Plan shall include:
- a. Requirements for formal dedication or cultural interpretation to be undertaken prior to start of Construction Works in areas identified as having significance to Mana Whenua;
 - b. Requirements and protocols for cultural inductions;
 - c. Identification of representative activities, sites and areas where cultural monitoring is required during particular Construction Works and the scope of cultural monitoring as appropriate to reflect the timing, location and scale of the Construction Works;
 - d. Identification of personnel to undertake cultural monitoring, including any geographic definition of their responsibilities;
 - e. Details of personnel to assist with management of any issues identified during cultural monitoring, including implementation of the Accidental Discovery Protocol developed under the conditions titled "Accidental Discovery Protocol" (conditions 82 to 85); and
 - f. The Cultural Monitoring Plan shall align with the requirements of other conditions of the Designation and resource consents for the Project which require monitoring during Construction Works.
22. If Enabling Works involving soil disturbance are undertaken, at least 6 months prior to the start of Enabling Works, the Requiring Authority shall prepare an Enabling Works Cultural Monitoring Plan (EWCMP). The plan shall be prepared by a Suitably Qualified and Experienced Person who is identified in collaboration with Mana Whenua. Collaboration shall be completed within 20 Days of initiation by the Requiring Authority.
23. The EWCMP shall be prepared in general accordance with the Cultural Monitoring Plan conditions 20 to 21 but with the scope modified as appropriate to reflect the timing, location and scale of the Enabling Works.

Network Utilities

24. The Requiring Authority shall ensure that Project Works do not adversely impact on the ongoing safe and efficient operation of Network Utility Operations. The scope, timing and methodology for utility protection and / or relocation works shall be developed in consultation with the relevant Network Utility Operator to ensure ongoing safe and efficient operation for the required works.
25. In consultation with Transpower New Zealand Limited, the Requiring Authority shall develop procedures, methods and measures to be implemented during Project Works to:
- Manage effects of dust and other material potentially resulting from Project Works and able to cause material damage, beyond normal wear and tear, to overhead high voltage transmission lines through the Project area;
 - Ensure that no activity is undertaken during construction that would result in ground vibrations, ground instability and/or ground settlement likely to cause material damage to Transpower's assets; and
 - Meet applicable standards and Codes of Practice applying to the design and construction of Project Works that interface with the assets of Transpower.

New conditions (25A)

Any activity within 20 metres of the pipeline infrastructure operated by First Gas shall require the written authorisation from First Gas, the authorisation of which is not to be unreasonably withheld.

New condition (25B)

The high-pressure gas pipeline shall be accurately shown and labelled on all design, tender, and construction drawings, and landfill operation and management plans.

New condition (25C)

Any activity within 20 metres of the pipeline infrastructure operated by Refining NZ shall require the written authorisation from Refining NZ, the authorisation of which is not to be unreasonably withheld.

New condition (25D)

The Refinery to Auckland pipeline shall be accurately shown and labelled on all design, tender, and construction drawings, and landfill operation and management plans.

New condition (25E)

The Requiring Authority shall develop in collaboration with Watercare Services, an operating agreement to allow for the routine operation and maintenance of Watercare Services assets within the designation boundary. This operating agreement shall include appropriate notification and access protocols where works are to be undertaken by either network operator on or adjacent to Watercare Services infrastructure within the designations.

Advice Note: Along with the RMA processes, there are other additional processes and approvals applying to any work or activity that affect network utilities. The Requiring Authority may require additional approvals

from Network Utility Operators prior to any works commencing in proximity to network utilities.

Construction Noise and Vibration

Noise Criteria

26. Unless provided for in Conditions 28 and 29, Construction noise from Project Works shall, as far as practicable, comply with the following criteria in accordance with NZS6803:1999

a. Residential receivers:

	Time	dB LAeq(<u>T</u> 15min)	dB LAmax
Weekdays	0630-0730	55	75
	0730-1800	70	85
	1800-2000	65	80
	2000-0630	45	75
Saturdays	0630-0730	45	75
	0730-1800	70	85
	1800-2000	45	75
	2000-0630	45	75
Sundays and Public Holidays	0630-0730	45	75
	0730-1800	55	85
	1800-2000	45	75
	2000-0630	45	75

b. Industrial and commercial receivers:

Time	dB LAeq(<u>T</u> 15min)
0730-1800	70
1800-0730	75

Notes:

~~“(T)” is a representative assessment duration between 10 and 60 minutes.~~

New condition (26A)

Air blast noise shall comply with a limit of 120 dB L_{Zpeak} at 1 metre from the most exposed façade of any occupied buildings.

Measurement and assessment of air blast noise shall be undertaken in accordance with AS 2187-2:2006 Explosives – Storage and use - Part 2: Use of explosives, (as it relates to air blast).

Vibration Criteria

27. Unless otherwise provided for in Condition 28, 29 or 30, vibration from Project Works shall, as far as practicable, comply with the following criteria:

Receiver	Location	Detail	Category A	Category B
Occupied PPFs*	Inside the building	Night-time 2000h - 0630h	0.3mm/s PPV	1mm/s PPV
		Daytime 0630h - 2000h	1mm/s PPV	5mm/s PPV
		Blasting – vibration	5mm/s PPV	10mm/s PPV
Other occupied buildings	Inside the building	Daytime 0630h - 2000h	2mm/s PPV	5mm/s PPV
All other buildings	Building Foundation	Vibration - transient (including blasting)	5mm/s PPV	BS 5228-2 Table B.2
		Vibration - continuous		BS 5228-2 50% of Table B.2 values

Notes:

Measurements of construction vibration shall be undertaken in accordance with ISO 4866:2010 Mechanical vibration and shock – Vibration of fixed structures – Guidelines for the measurement of vibrations and evaluation of their effects on structures.

* For vibration, protected premises and facilities (PPFs) are dwellings, educational facilities, boarding houses, homes for the elderly and retirement villages, marae, hospitals that contain in-house patient facilities and buildings used as temporary accommodation (eg motels and hotels).

New condition (27A)

Vibration arising from construction activities which may affect underground pipe work shall be measured in accordance with DIN4150-3:2016 Structural vibration – Part 3: Effects of vibration on structures, and shall comply with the following vibration limits:

<u>Pipe material</u>	<u>PPV (measured on the pipe)</u>
<u>Steel (including welded pipes)</u>	<u>100 mm/s</u>

<u>Clay, concrete, reinforced concrete, pre-stressed concrete, metal (with or without flange)</u>	<u>80 mm/s</u>
<u>Masonry, plastic</u>	<u>50 mm/s</u>

Construction Noise and Vibration Management Plan

28. Prior to Project Works commencing, the Requiring Authority shall engage a Suitably Qualified and Experienced Person to prepare a Construction Noise and Vibration Management Plan (CNVMP) to identify how conditions 26 to 27 will be met prior to Project Works commencing. The CNVMP shall be prepared by a Suitably Qualified and Experienced Person and. The CNVMP shall be implemented during the construction of the Project.

New condition (28A)

The objective of the CNVMP shall is to provide a framework for the development, identification and implementation of identify the Best Practicable Option for the management and mitigation of all construction noise and vibration effects. The CNVMP shall set out how including where full compliance with the construction noise and vibration criteria set out in conditions 26 to 27 cannot practicably will be achieved to the extent practicable. To achieve this objective, tThe CNVMP shall be prepared in accordance with at a minimum, include the information required by NZS 6803:1999, Annex E2 and the NZ Transport Agency's State highway construction and maintenance noise and vibration guide (version 1.1, 2019), and in addition address the process required to review and update the CNVMP. The term 'noise' in that document shall be interpreted as 'noise and vibration'. The CNVMP shall be provided to the Manager for certification no later than 20 days prior to construction commencing.

29. If prior to or during Project Works noise and or vibration levels from Project Works are measured or predicted to exceed the noise criteria in condition 26 or the Category A vibration criteria in condition 27, then a Suitably Qualified and Experienced Person shall be engaged to identify ,in consultation with the owners and occupiers of sites subject to exceedance, specific Best Practicable Option measures to manage the effects of the specific construction activity. enable compliance with the criteria as far as practicable. The measures shall be added as a schedule to the CNVMP and implemented by the Requiring Authority for the duration of the relevant works, and

New condition (29A)

The schedule shall as a minimum set out:

- i. Construction activity location, start and finish dates;
- ii. The predicted noise and/or vibration level for all receivers where the levels are predicted or measured to exceed the applicable criteria of Conditions 26 and/or 27
- ii. The mitigation options that have been selected, and the options that have been discounted as being impracticable and the reasons why.
- iii. The proposed noise and/or vibration monitoring regime;
- iv. The communications and engagement requirements for affected landowners and occupiers.
- v. Documentation of the consultation undertaken with owners and occupiers of sites subject to the Schedule, and how consultation has and has not been taken into account.

The schedules shall be provided to the Manager for information certification, to the greatest extent practicable, at least within five Days before the specific construction activity covered by the scope of the schedule is undertaken, where practicable.

30. (a) If prior to or during Project Works vibration levels from Project Works are measured or predicted to exceed the Category B criteria in condition 27, then the relevant works shall not commence or proceed until a Suitably Qualified and Experienced Person has undertaken a building condition survey (provide the owner has agreed to such survey) ~~monitored the vibration levels at those affected buildings~~ and identified specific Best Practicable Option measures to manage the effects of vibration.

(b) Vibration monitoring shall be undertaken and continue throughout those works. Following completion of the activity, a building condition survey shall be undertaken to determine if any damage has occurred as a result of construction vibration, and any such damage shall be repaired by The Requiring Authority.

(c) The measures shall be added as a schedule to the CNVMP and implemented by the Requiring Authority for the duration of the relevant works. The schedule shall, as a minimum, contain the information set out in condition 29(b) and the findings of the building pre-condition survey.

(d) The schedules shall be and provided to the Manager for information for certification to the greatest extent practicable, at least within five Days before the specific construction activity covered by the scope of the schedule is is undertaken, where practicable.

Construction Traffic

General construction traffic management

31. Kraack Road shall not be used as a haulage route for Heavy Vehicles between State Highway 1 and Saunders Road.
32. Construction Works shall be managed to enable pedestrian access along Te Araroa Walkway where feasible and practicable to do so and the health and safety of users can be maintained.

New condition (32A)

Site staff shall not use Hill St between 0800 to 0930 hrs and 1430 to 1530 hrs Monday to Friday.

New condition (32B)

Any full closure of Woodcocks Road and Kaipara Flats Road shall be limited to between 1800 to 0630 hrs Monday to Friday.

New condition (32C)

Haulage trips along the southern haul route, being Matakana Link Rd, SH1 Northbound, Kaipara Flats Road, Carran Road, Woodcocks Road, Mansel Drive, Falls Rd, Hobson Rd, shall only travel in an anticlockwise direction. Heavy vehicles shall not operate on this route between 1600 to 1800 hrs Monday to Friday.

New Condition (32D)

Any southbound Heavy Vehicles exiting a Site Access Point onto SH1 within the central section (Dome Valley) shall avoid any right turn movements.

New Condition (32E)

Any southbound Heavy Vehicles on SH1 shall avoid right turn movements into Kaipara Flats Road.

33. Any damage to a local road at a construction site access point, which is verified by a Suitably Qualified and Experienced Person as being directly attributable to Heavy Vehicles entering or exiting the construction site at that location, shall be repaired within two weeks or within an alternative timeframe to be agreed with Auckland Transport. All repairs shall be undertaken in accordance with the Auckland Transport's Transport Design Manual Code of Practice.

New condition (33A)

A Suitably Qualified and Experienced Person shall carry out assessment of haulage routes every three months to identify any damage to a local road directly attributable to Heavy Vehicles. Any such damage shall be repaired within two weeks or within an alternative timeframe to be agreed with Auckland Transport. All repairs shall be undertaken in accordance with the Auckland Transport's Transport Design Manual.

Construction Traffic Management Plan

34. The Requiring Authority shall manage construction traffic and construction parking to:
- Protect public safety including the safe passage of pedestrians and cyclists;
 - Minimise delays to road users, particularly during peak traffic periods;
 - Minimise interruption to property access; and
 - Inform the public about any potential impacts on the road network.
35. The Requiring Authority shall prepare a Construction Traffic Management Plan (CTMP) prior to the start of construction works for the Project to identify how condition 34 will be met ~~prior to the start of Construction Works~~. The CTMP shall be prepared by a Suitably Qualified and Experienced Person and shall include the following:
- Methods that will be undertaken to communicate traffic management measures to affected road users (residents/public/stakeholders/emergency services);
 - Identification of traffic management activities and sequencing proposed for the Project, including a staff travel plan, site access routes and site access points for Heavy Vehicles;
 - (c) Safety and operational assessment of site access points for Heavy Vehicles;
 - Methods for managing traffic effects, including through temporary traffic management activities (TTM); including:
 - Methods to provide for safe and efficient access of construction vehicles to and from construction sites, including consideration of capacity for queuing vehicles, restrictions on turning movements and sight distances;
 - Methods to maintain vehicle access to property and/or private roads where practicable, or to provide alternative access arrangements when it will not be;
 - Methods to minimise the effects of TTM activities on traffic;

- iv. Methods to maintain local access during Project Works, where practicable, in particular during the realignment of or connection to local roads;
 - v. Methods to maintain access, turnaround locations and set down areas for bus routes (including school buses) where practicable;
 - vi. Methods for temporary road closures, with road closures to be carried out at times of lowest traffic, at night if practicable;
 - vii. Methods to identify how impacts on the road network from construction related light vehicle movements will be managed during peak traffic periods; and
 - viii. Methods to identify how impacts from construction related Heavy Vehicle movements on traffic flow and level of service of the road network will be managed; and
- d. Auditing, monitoring and reporting requirements relating to TTM activities in accordance with the requirements of NZ Transport Agency Code of Practice for Temporary Traffic Management (COPTTM).

36. The Suitably Qualified and Experienced Person shall prepare the CTMP based on traffic volumes and movements (including the number of pedestrians, equestrians and cyclists), and the transport network that is in place in the February immediately prior to the start of Construction Works and shall take into account any other transport works that are planned to occur during the Construction Works.

37. In preparing the CTMP, the Requiring Authority shall consult with Auckland Transport, and the owner of the commercial plantation forest (Mahurangi Forest) located west of SH1 with respect to access and traffic management activities which directly interface with forestry operations. If the Requiring Authority has not received any written comment from Auckland Transport or the owner of the Mahurangi Forest within 20 Days of providing the CTMP to them, the Requiring Authority may consider the relevant party has no comments.

Site Specific Traffic Management Plans

38. The Requiring Authority shall prepare a Site Specific Traffic Management Plan (SSTMP) or Plans as required by condition 38A and where any Project construction activity varies the normal traffic conditions of any public road. The SSTMP shall be prepared prior to using that road and prior to start of the relevant Construction Works. The purpose of the SSTMP(s) is to identify specific construction methods to comply with the CTMP and to address the particular circumstances, local traffic and community travel demands within the area covered by the SSTMP.

New condition (38A)

The Requiring Authority shall prepare a SSTMP in accordance with Condition 38 for the following locations: Kaipara Flats Rd, Woodcocks Rd, Carran Road, and the Kaipara Flats Road/SH1 intersection.

The SSTMP for these locations shall specifically address the following matters:

- i. Traffic management for any one-way bridges
- ii. The widening of Carran Road to accommodate heavy construction vehicles
- iii. Safety measures to accommodate existing traffic and Heavy Vehicles
- iv. Alternative routes to avoid right turn movements into or from SH1
- v. Measures to provide for the safe deceleration of northbound heavy construction vehicle movements turning left into Kaipara Flats Rd

39. The SSTMP(s) shall be prepared by a Suitably Qualified and Experienced Person and shall comply with the version of COPTTM which applies at the time the relevant SSTMP is prepared. Where it is not possible to adhere to this Code, the Requiring Authority shall apply COPTTM's prescribed Engineering Exception Decision (EED) process.
40. In preparing the SSTMP, the Requiring Authority shall consult with Auckland Transport where the Project construction activity interfaces with the local road network. If the Requiring Authority has not received any comment from Auckland Transport within 20 Days of providing the SSTMP to them, the Requiring Authority may consider Auckland Transport has no comments.

Enabling Works Construction Traffic Management Plan

41. Where Enabling Works are to be undertaken, the Requiring Authority shall prepare an activity specific Enabling Works Construction Traffic Management Plan (EWCTMP) prior to the start of the relevant enabling works. The information contained in an EWCTMP shall provide a similar scope of information as for a CTMP but shall be commensurate with the scale and effects of the proposed enabling works.
42. In preparing the EWCTMP, the Requiring Authority shall consult with Auckland Transport where the Project construction activity interfaces with the local road network. If the Requiring Authority has not received any comment from Auckland Transport within 20 Days of providing the EWCTMP to them, the Requiring Authority may consider Auckland Transport has no comments.

Urban and Landscape Design

Urban and Landscape Design Framework

43. The Requiring Authority shall prepare an Urban and Landscape Design Framework (ULDF) prior to the start of Construction Works. The purpose of the ULDF is to:
- Set the framework for integration of the permanent Project Works into the surrounding landscape and topography, and built environment, having regard to the local landscape and character and contexts along the Project route;
 - inform development of the Urban and Landscape Design Management Plan(s) (ULDMP(s)); and
 - support the achievement of the Ecological Outcomes in condition 54, through combining landscape planting, restoration planting and habitat rehabilitation where practicable.
44. The ULDF shall be prepared by a Suitably Qualified and Experienced Person having regard to the:
- Planning Version ULDF (2019) (submitted with the Notice of Requirement);
 - NZ Transport Agency Bridging the Gap NZTA Urban Design Guidelines (2013), or any subsequent version;
 - NZ Transport Agency Landscape Guidelines (final draft dated 2014), or any subsequent version, and the NZ Transport Agency P39 Standard Specification for Highway Landscape Treatments (2013), or any subsequent version;
 - the ULDF for Ara Tūhono Puhoi to Warkworth section of SH1;
 - Te Aranga Principles, Auckland Design Manual (2013), or any subsequent version;
 - cultural indicators identified in condition 16(f); and
 - the Ecological Outcomes in condition 54 and the SECP required in condition 77 of the resource consent condition.

- fences, central and median barriers etc.
- iv. Urban design and landscape treatment of:
 - a. all major structures, including viaducts, bridges and associated infrastructure, retaining walls, ancillary buildings
 - b. any Structural Mitigation required by condition 90;
 - c. roadside furniture, such as lighting, sign gantries and signage, guard rails, fences and median barriers; and
 - d. hardscape material, (e.g. rock rip rap, sealed shoulders, kerbs, roundabouts) and interchanges.
 - v. Land use re-instatement.
 - vi. Landscape treatment/rehabilitation of construction yards and haul roads following completion of construction.
 - vii. The integration of landscape planting with restoration planting and habitat rehabilitation or other planting required for the Project (including by resource consent conditions) where applicable, as further specified by condition 50.
 - viii. Landscape design input to the form of stormwater ponds and swales to assist with landscape integration.
 - ix. Pedestrian and cycle facilities including paths along local roads where these facilities are directly affected by Project Works.
 - x. Features (such as interpretive signage), locations, deliverables, and timeframes for identifying and interpreting cultural heritage, built heritage, archaeology, geological heritage and ecology, in consultation with Auckland Council Heritage Unit, HNZPT, Mana Whenua and local museums/historical societies.
 - xi. Noise ~~attenuation~~ barriers, and structures, walking and cycling facilities (including bridges, underpasses and associated retaining walls) which are identified in the ULDF as being in highly sensitive locations.
 - xii. The design of the tunnel portals, which shall be integrated with the adjacent landform through the use of sloping portal structures and revegetation works. Any ancillary structures associated with the tunnels shall be located and designed so they are recessive in form and colour.
 - xiii. Context-sensitive landscape design and planting at Interchanges to create a local gateway, wayfinding and promote a sense of place that reflects the destination accessed via the interchange.
 - xiv. New planting, where practicable, to provide visual screening of the permanent Project Works from dwellings with direct line of sight to the Project.
 - xv. Design and landscape features to acknowledge cultural values relating to landscape design identified through condition 16(f) ~~and the recommendations of the Cultural Artworks Plan (if prepared), where feasible and practicable to do so.~~
 - xvi. Design and landscape features to acknowledge the recommendations of the Cultural Artworks Plan (if prepared), where feasible and practicable to do so."
 - xvii. the design of mitigation measures (bundling, fencing, planting, the location of motorway infrastructure and furniture, etc) designed to address the adverse amenity effects of the motorway corridor on residential properties exposed to the designation

- c. Environmental design measures to support crime prevention (CPTED or superseding industry standard) principles.

50. The ULDMP(s) shall include the following planting and vegetation management details:

- a. Planting design details, including:
 - i. Identification of vegetation to be retained.
 - ii. Proposed planting suitable to site conditions including plant species (including consideration of native bird food sources), mixes (canopy succession species), spacing/densities and sizes (at the time of planting), and layout and planting methods including trials. A minimum 1% of planting shall be of Threatened Species.
 - iii. Details of the sourcing of native plants including genetic sourcing of native plants from the Rodney Ecological District.
 - iv. Retention of existing shelter belts and indigenous trees within the Designation, where practicable, to screen direct line of sight of the permanent Project Works from adjacent properties.
- b. A planting programme including the staging of planting in relation to the construction programme which shall, as far as practicable, include provision for planting within each planting season following completion of works in each Stage of the Project.
- c. Detailed specifications relating to the following:
 - i. Weed control and clearance;
 - ii. Pest animal management;
 - iii. Ground preparation (top soiling and decompaction);
 - iv. Mulching; and
 - v. Plant sourcing and planting, including hydroseeding and grassing.
- d. The relevant requirements of the NZ Transport Agency P39 Standard Specification for Highway Landscape Treatments (2013), or any subsequent version, and performance standards including a five-year maintenance plan/schedule that requires any unsuccessful planting to be replaced within that five-year period unless canopy closure is achieved as determined by a Suitably Qualified and Experienced Person.

Landscape and visual requirements – construction activities

- 51. Construction yards shall be designed and located to minimise their visibility from occupied dwellings located within 200 m of the construction yard which have views from the dwelling to the construction yard.
- 52. Temporary haul roads and access roads shall be rehabilitated as soon as reasonably practicable following completion of construction.

Compliance with the Electricity (Hazards from Trees) Regulations 2003

- 53. Areas of landscape planting (trees and vegetation) shall be designed to enable compliance with the Electricity (Hazards from Trees) Regulations 2003. Any new landscaping within 12m of the centre line of the HEN-MPE-A transmission line conductors shall be limited to species that grow to a maximum of 2m in height at full maturity.

Ecology

Ecological Outcomes

54. In designing and managing the construction, operation and maintenance of the Project, the Requiring Authority shall achieve the following:
- a. Limit encroachment of Project Works into all identified Ecological Sites where practicable to do so, and otherwise minimise impacts on such areas;
 - b. Protect Fauna and Avifauna from harm or mortality resulting from the Project, as far as practicable through:
 - i. adopting best practice capture and relocation protocols; and
 - ii. adopting best practice for lighting, dust and noise management
 - c. Restore, maintain or enhance ecology affected by the Project by designing and implementing restoration planting and habitat rehabilitation to:
 - i. Connect and enhance existing natural ecosystems;
 - ii. Establish ecological connectivity between the Mahurangi River (left branch) catchment and the Upper Kourawhero Stream catchment; ~~and~~
 - iii. Enhance Fauna and Avifauna habitat within the Mitigation Sites, the Fauna habitat and flyway mitigation area and other planting areas;
 - iv. Provide restoration and protected habitats within the designation that are resilient through minimising edge effects and other factors causing degradation; and
 - v. Provide habitats that are protected and managed in perpetuity to maintain the ecological outcomes.

collectively referred to as the “Ecological Outcomes”.

55. At least 6 months prior to start of project works, the Requiring Authority shall prepare an Ecology Management Plan to identify how the Ecological Outcomes will be met prior to the start of Project Works. The Plan shall be prepared by a Suitably Qualified and Experienced Person and shall be provided to the Manager for certification and shall include the following topic sections:

Ecological Outcomes

- a. ~~A general statement~~ Provide detail as to how the Project design and management of the construction of the Project will achieve the Ecological Outcomes. This shall as minimum include:
 - i. Performance measures and standards to achieve the Ecological Outcomes
 - ii. Provide ecological performance monitoring against standards
 - iii. Provide measures to address any shortfalls on expected ecological performance
 - iv. Revised areas of impact of ecological areas based on final design alignment
 - v. Revised ecological values of all sites within the designation
 - vi. Confirm the ecological areas that will be directly affected by the Project Works;
 - vii. Calculate the quantum and location of offset to be provided using best practice transparent and quantified offset accounting methods, ensuring that:
 1. The potential value of the impacted ecology (fauna and flora) is accounted for;
 2. The relative ecological gain at the proposed offset site is accounted for;

3. An appropriate suite of ecological attributes are included in the offset accounting method; and
4. Time lag is accounted for.
- viii. Demonstrate that the proposed offset is like for like in regard to ecosystem type;
- ix. Provide details of the ecological offset sites, the existing ecology of these and the enhancement values
- x. Provide details of pest plant and animal management
- xi. Provide for the implementation of best ecological practice
- xii. Provide ongoing legal protection
- xiii. Provide details of the maintenance of plantings for at least 5 years

Ecological Sites

- b. Recommended measures to be adopted to limit encroachment of Project Works into Ecological Sites including:
 - i. The steps taken to reduce the footprint of Project Works in such areas and documenting the reasons where it is not practicable to do so; ~~and~~
 - ii. Measures to fence off or otherwise clearly demarcate such areas during Project Works to protect those sites from accidental damage during Project Works; ~~and~~
 - iii. Limiting impacts to 2.17 ha of high and very high value ecological areas (excluding wetlands) and 8.27 ha of moderate and low value ecological areas (excluding wetlands).

Fauna habitat and flyway mitigation area

- c. The location and measures for the Fauna habitat and flyway mitigation area under conditions 58-61.

Restoration planting and habitat rehabilitation

- d. The locations and measures for restoration planting and habitat rehabilitation under conditions 62-65.

Fauna relocation protocols and sites

- e. The locations and measures for Fauna and Avifauna relocation under conditions 66-75.

- ~~56. The Suitably Qualified and Experienced Person shall prepare the Ecology Management Plan having regard to the following documents (or subsequent versions):~~
 - ~~b. NZ Transport Agency Research report 224: Environmental protection measures on NZ state highway roading projects Volume 1: Reference guide to past practice; and~~
 - ~~c. NZ Transport Agency Research report 225: Environmental protection measures on NZ state highway roading projects Volume 2: Key issues & observations from the study.~~

57. In preparing the EMP and the relevant topic sections, the Requiring Authority shall collaborate with Mana Whenua and consult with:
 - ~~a. Mana Whenua;~~
 - b. Auckland Council;
 - c. Department of Conservation; and

d. The owner of the commercial plantation forest (Mahurangi Forest) located west of SH1, with respect to ecological management activities which directly interface with forestry operations. ~~If the Requiring Authority has not received any comment from such parties within 20 Days of providing the EMP to them, the Requiring Authority may consider the relevant party has no comment.~~

Fauna habitat and flyway mitigation area

58. At least 6 months prior to the start of ~~Construction~~ Project Works the Requiring Authority shall provide a Fauna habitat and flyway mitigation area at the area identified on Map 13 ~~if, in the opinion of a Suitably Qualified and Experienced Person, the area is able to achieve the following outcomes:~~

- a. Provides a suitable location for the relocation of some or all Fauna captured and relocated under conditions 66-75;
- b. Maintains an east-west link across the Designation to allow for the movement of Fauna and dispersal of seeds;
- c. Maintains a flyway for Avifauna and long-tailed bats to move across and along the Designation; ~~and~~
- d. Contains mature vegetation suitable for long-tailed bat roosts and bat and Avifauna breeding sites; and
- e. Provides maintenance plan that includes, but is not limited to, pest plant and animal control and enrichment planting.

referred to as the "Fauna habitat and flyway mitigation area outcomes".

59. If, in the opinion of a Suitably Qualified and Experienced Person, the area identified on Map 13 will not achieve the Fauna habitat and flyway mitigation area outcomes ~~an alternative~~ area(s) for mitigation shall be identified by a Suitably Qualified and Experienced Person within the Designation that will achieve those outcomes.

60. The Requiring Authority shall fence off (or otherwise clearly demarcated) the Fauna habitat and flyway mitigation area during Project Works from accidental damage during adjacent construction activities, apart from access for pest animal and pest plant management and restoration planting and habitat rehabilitation works.

61. The Requiring Authority shall include the location and measures for the Fauna habitat and flyway mitigation area in a topic section in the EMP.

Restoration planting and habitat rehabilitation

62. The Requiring Authority shall undertake restoration planting and habitat rehabilitation to mitigate, offset and compensate the effects of Project Works on areas of Ecological Value ~~using the following replanting ratios as calculated by a Suitably Qualified and Experienced Person:~~ The quantum of mitigation, offset and/or compensation and its design and location shall be set out in the EMP and shall:

- a. Integrate the offset planting with the wetland restoration planting and habitat rehabilitation required under Consent Conditions where practicable; and
- b. Provide site specific enhancement plans for the proposed offset sites that:
 - i. Details how the anticipated outcomes used in the offset calculations will be achieved;
 - ii. Details the planting to be carried out, including a list of species, numbers to be planted, their common and botanical names, method of planting, planting locations,

plant grades, planting densities and local sourcing of plants;

- iii. Details the timing of works and techniques of weed and plant management measures for a period of no less than 5 years or until canopy closure is achieved;
 - iv. Details the works and techniques animal pest control for a period of no less than 5 years or until canopy closure is achieved;
 - v. Details of monitoring methods and frequency, including at a minimum annual reporting to Council for a period of no less than 5 years or until canopy closure is achieved; and
 - vi. Is in accordance with AUP:OP Appendix 16: Guideline for native revegetation plantings.
- ~~a. Ecological Site including Wetlands, mitigation shall be provided at a ratio of 6:1 of the area of impact;~~
 - ~~b. Other sites of High to Very High Ecological Value, mitigation shall be provided at a ratio of 6:1 of the area of impact; and~~
 - ~~c. For other areas of Ecological Value, mitigation shall be provided at a ratio of 3:1 of the area of impact.~~

63. The Requiring Authority shall provide the restoration planting and habitat rehabilitation at:

- a. Mitigation Sites;
- b. The Fauna habitat and flyway mitigation area;
- c. Fauna or Avifauna relocation sites established under conditions 67, 69, 71 and 73; ~~and~~
- d. Other sites recommended by a Suitably Qualified and Experienced Person where there is insufficient area in areas (a)-(c) for the required restoration planting and habitat rehabilitation; and
- e. Areas identified as opportunities for restoration and enhancement of Mauri and Mahinga kai in Condition 16(e).

64. The Requiring Authority shall instruct a Suitably Qualified and Experienced Person to prepare a topic section to be included in the EMP describing and illustrating the proposed restoration planting and habitat restoration, that includes:

- ~~a. The calculations and related evidence for the replanting ratios from condition 62;~~
- b. The locations for the restoration planting and habitat restoration;
- ~~c. A statement as to how the restoration planting and habitat restoration will achieve the Ecological Outcome at condition 54(c);~~
- ~~d. A planting schedule containing a mix of native plants including genetic sourcing of native plants from the Rodney Ecological District;~~
- e. Methods to ensure restoration planting and habitat rehabilitation is resilient and self-sustaining, including but not limited to monitoring, monitoring frequency, expected targets and a response plan should expected targets in the rehabilitation process not be met; and
- f. Proposed pest animal and pest plant management of restoration planting and habitat rehabilitation areas, including:
 - i. Timing and implementation;
 - ii. Methods for survey and monitoring to establish presence and abundance of pest animals and pest plants;

- iii. Pest control methods;
- iv. Performance monitoring;
- v. Maintenance periods.
- vi. Alignment with Pest Free 2050 programme
- g. ~~A statement~~ Detail as to how any landscape planting to be established through a ULDMP or other Project planting has been integrated; and
- h. A statement as to how cultural values relating to restoration planting and habitat restoration identified through condition 16(f), have been acknowledged where feasible and practicable to do so.

65. The Requiring Authority shall:

- a. Complete the restoration planting and habitat rehabilitation in accordance with the EMP and ULDMP's by no later than 5-2 years from the date of the Project becoming operational or as otherwise specified in these conditions;
- b. Commence restoration planting and habitat development for the translocation of species as soon as areas become available; and
- c. Within 2 years of the Project becoming operational, apply a protection mechanism or covenant to all mitigation, offset or compensation enhancement works on the land. The protection mechanism or covenant shall:
 - i. Secure the protection in perpetuity of mitigation, offsets and compensation.
 - ii. Protect the native vegetation within the covenant boundaries
 - iii. Require ongoing pest plant and pest animal control within the covenant boundaries
- d. Evidence of the in-effect protection mechanism or covenant applied to all mitigation areas shall be provided to Council to secure compliance with this condition.

Long-tailed bats

66. The Requiring Authority shall engage a Suitably Qualified and Experienced Person to conduct long-tailed bat habitat and presence surveys within the Designation in the period of September-October ~~immediately~~ before construction of Project Works in areas where long-tailed bat may be impacted by Project Works.
67. In the event that the surveys confirm long-tailed bat habitat or presence, the Requiring Authority shall:
- a. Assess the impacts to, and avoidance of effects at a population level;
 - a. Instruct a Suitably Qualified and Experienced Person to undertake surveys of the relevant areas prior to Project Works to identify Active Roost Sites that may be affected by Project Works and to recommend vegetation clearance methods that will avoid injury or mortality of bats associated with Project Works around Active Roost Sites;
 - b. Instruct a Suitably Qualified and Experienced Person to recommend methods to mitigate Project effects on long-tailed bat habitat through maintaining or enhancing long-tailed bat roost habitat and flyways in the Designation, having regard to Appendix D: Bat management framework for linear transport infrastructure projects of the Transport Agency research report 623 (Smith et al., 2017) ~~or~~ and any other best practice guide; and
 - c. Provide a report on the surveys undertaken and the results and the Suitably Qualified and Experienced Person's recommendations in the relevant topic section of the EMP.

Advice Note: capture and relocation of Avifauna will be carried out in accordance with a Wildlife Act Authority.

Avifauna

68. The Requiring Authority shall engage a Suitably Qualified and Experienced Person to conduct Avifauna habitat and presence surveys within the Designation prior to the start of Project Works in areas that may be impacted by Project Works. The Suitably Qualified and Experienced Person shall, in particular, survey wetland bird species (including banded rail, fernbird, Australasian bittern, marsh crane and spotless crane) in Wetlands WN_W_Koura_02 and WN_W_Koura_05 (refer Map 18) at the beginning of the bird breeding season prior to Project Works commencing in those locations.
69. In the event that the surveys confirm Avifauna habitat or presence, the Requiring Authority shall;
- Not undertake vegetation clearance of the relevant areas (excluding clearance of pasture) during breeding season, September to December inclusive of any year, unless a Suitably Qualified and Experienced Person confirms there are no nesting Avifauna likely to be impacted by Project Works;
 - In relation to wetland bird species (including banded rail, fernbird, Australasian bittern, marsh crane and spotless crane) in all impacted wetlands including WN_W_Koura_02 and WN_W_Koura_05 (refer Map 18) instruct a Suitably Qualified and Experienced Person to identify and implement best practice methods to capture and relocate these species prior to commencement of Project Works; and
 - provide a report on the surveys undertaken and the results and the Suitably Qualified and Experienced Person's recommendations in the relevant topic section of the EMP.

Advice Note: capture and relocation of Avifauna will be carried out in accordance with a Wildlife Act Authority.

Land snails, copper skinks, forest geckos

70. The Requiring Authority shall engage a Suitably Qualified and Experienced Person to conduct habitat and presence surveys within the Designation prior to the start of Project Works in areas that may be impacted by Project Works for the following species:
- land snail (Amorhystida (*Amorhystida spp.*, *Paryphanta spp.* etc. ~~dunni~~);
 - ~~other land snails (to confirm)~~
 - all native skinks (eg. copper skink); and
 - all native geckos (eg. forest gecko).
71. In the event that the surveys confirm the presence of any such species, the Requiring Authority shall:
- instruct a Suitably Qualified and Experienced Person to recommend best practice methods to capture and relocate the species to the Fauna habitat and flyway mitigation area or other suitable site, provided the site with the required habitat, has been subject to predator control measures for at least six (6) months prior to the first transfer and will receive ongoing predator control ~~for three years after the last transfer~~;
 - undertake capture and relocation under the supervision of a Suitably Qualified and Experienced Person;
 - where practicable, relocate endemic macro land snails (~~Amorhystida dunni~~) along with their leaf-

- d. Timing of salvage and relocations; and
- e. Pest animal and pest plant management implemented, ~~if any~~.

At Risk or Threatened flora and fauna discovery protocol

75. In the event that a Suitably Qualified and Experienced Person discovers any At Risk or Threatened flora and fauna (as defined in the current version of the New Zealand Threat Classification System) within the Designation that is not covered by conditions 62-73, the Requiring Authority shall immediately notify the ~~Local Area~~ Operations Manager, Department of Conservation and Auckland Council. The Requiring Authority shall have regard to any advice provided by the Department of Conservation in determining the appropriate course of action to be undertaken with respect to the discovered flora or fauna (eg further surveys, avoidance and/or capture and relocation).

Advice Note: The Requiring Authority will comply with all relevant provisions of the Wildlife Act 1953.

Biosecurity Plan

76. Prior to ~~Construction~~ Project Works commencing, the Requiring Authority shall prepare, in consultation with the ~~Local Area~~ Operations Manager, Department of Conservation a Biosecurity Plan. The kauri management aspects of the plan shall apply to all areas in the Designation within 3 times the radius of the canopy drip line of any New Zealand kauri. The purpose of the Biosecurity Plan is to set out the procedures to be used to prevent the introduction and/or spread of kauri dieback disease, and other biosecurity hazards such as Myrtle rust, Argentine ants and plague skink.
77. The Biosecurity Plan shall be prepared by a Suitably Qualified and Experienced Person to meet the purpose in Condition 76 and, as a minimum, shall:
- a. be consistent with “Hygiene Procedures for Kauri Dieback”, “Land disturbance activities (including earthworks) around kauri”, “Vehicle and Heavy Machinery Hygiene”, “Landfill Disposal of Contaminated Material” and “Procedures for Tree Removal and Pruning” and any other relevant guidelines published by the Ministry for Primary Industries Kauri Dieback Management Programme, or any subsequent revision which can be found at www.kauridieback.co.nz or copies can be obtained from Auckland Council;
 - b. contain measure that address the removal of any material (including soil) from within the “kauri contamination zone” and safe disposal thereof;
 - c. contain best practice biosecurity protocols to respond to any other identified biosecurity risk (e.g. Myrtle Rust) where required to do so by legislation; and
 - d. contain methods for updating the Biosecurity Plan in the event of significant changes in scientific knowledge relating to the effective management of kauri dieback or other biosecurity risks that occur after the plan is approved.

Historic Heritage and Archaeology

78. The Requiring Authority shall design and implement the Project Works to achieve the following Heritage Outcomes:
- a. Avoid adverse effects on historic heritage and archaeological sites and places as far as practicable;
 - b. Where avoidance of adverse effects is not practicable, minimise adverse effects on historic heritage and archaeological sites and places as far as practicable;
 - c. Where avoidance of adverse effects is not possible, investigate and record all historic heritage sites

- and places (pre and post 1900) within the designation; and
- d. Positive historic heritage outcomes
 - e. ~~Record all pre-1900 heritage and archaeological sites within the Designation; and~~
 - f. ~~Record all post-1900 heritage sites within the Designation.~~

Historic Heritage and Archaeology Management Plan

79. The Requiring Authority shall prepare a Historic Heritage and Archaeology Management Plan (HHAMP) prior to the start of Project Works, in collaboration with Mana Whenua and in consultation with HNZPT, and Auckland Council and Mana Whenua. The purpose of the HHAMP is to identify indirect and direct adverse effects on historic heritage sites and appropriate methods to avoid, remedy and mitigate them. The HHAMP shall set out the methods ~~to be adopted~~ to achieve the Heritage Outcomes. The HHAMP shall be provided to the Manager (in consultation with the Manager: Heritage Unit) for certification.

New condition (79A)

The HHAMP shall be prepared with up to date information. This additional information shall be provided to council prior to the lodgement of the HHAMP to streamline the certification process. This includes:

- a. Any archaeological assessments, heritage impact assessments, granted authorities, final archaeological reports and updated site record forms (CHI and NZAA ArchSite) prepared/submitted since time of the granting of any designation.
- b. Cultural Indicators Report
- c. Additional areas of survey and investigation undertaken as part of the WW2W project. For example, survey and predictive modelling recommended by Hōkai Nuku

New condition (79B)

Further assessment of built heritage shall include (but not be limited to):

- a. 156 Kaipara Flats Road, Dome Valley
- b. 35 Borrows Road, Waiteitei
- c. 30 Robertson Road, Wayby Valley
- d. 159 Whangaripo Valley Road, Wellsford
- e. 199 Rustybrook Road, Wayby Valley
- f. 200 Rustybrook Road, Wayby Valley

New condition (79C)

If Phillips Cottage (156 Kaipara Flats Road, Dome Valley) cannot be avoided at the detailed design stage, then:

- a. in the first instance the cottage structure must be relocated within its local area of significance.
- b. if this can be demonstrated not to be practicable then the structure must be relocated within the wider area of significance, including offering the place to the Warkworth Museum.
- c. if all relocation options can be shown to have been exhausted, only then should the

building be demolished and recorded to Level I of HNZPT guideline AGS 1A: Investigation and Recording of Buildings and Standing Structures (November 2018) or any subsequent version.

- d. Auckland Council shall be advised in writing at least 10 days prior to the cottage's relocation or demolition, with accompanying records demonstrating compliance with a-c above and 81(h).

80. The HHAMP shall be consistent with the ~~requirements~~ conditions of any Archaeological Authority granted by HNZPT for the Project ~~and where there is any inconsistency the terms of the Authority shall prevail.~~

81. The HHAMP shall be prepared by a Suitably Qualified and Experienced Person and shall identify and include:

- a. Any adverse direct and indirect effects on historic heritage sites and measure to appropriately avoid, remedy or mitigate
- a. Methods and areas for the identification and assessment of potential historic heritage sites and values ~~place and archaeological sites~~ within the Designation to inform detailed design;
- b. Known historic heritage sites and places ~~and archaeological sites~~ and areas of historic heritage potential ~~archaeological sites~~ within the Designation;
- c. Any pre-1900 archaeological sites or areas of archaeological potential for which an Archaeological Authority under the HNZPTA will be sought or has been granted;
- d. Any ~~post-1900~~ historic heritage sites within the Designation to be avoided, relocated, documented and recorded;
- e. Roles, responsibilities and contact details of Project personnel, Mana Whenua representatives, and relevant agencies involved with historic heritage and archaeological matters including surveys, documentation and recording, monitoring of Project Works, Accidental Discovery Protocols, and monitoring of conditions;
- f. Specific areas to be investigated, monitored and recorded to the extent these are directly affected by Project Works;
- g. The proposed methodology for investigating and recording post-1900 heritage sites (including buildings) that need to be demolished or relocated, including details of their condition, measures to mitigate any adverse effects and timeframe for implementing the preferred methodology, in accordance with the HNZPT guideline AGS 1A: Investigation and Recording of Buildings and Standing Structures (~~4 July 2014~~ November 2018), or any subsequent version and the International Council on Monuments and Sites (ICOMOS) New Zealand Charter 2010 or any subsequent versions;
- h. Proposed methodology for documentation of historic heritage exposed during construction and the recording of these sites in the Auckland Council Cultural Heritage Inventory (www.chi.net/Home.aspx).
- h. Methods to acknowledge cultural values identified through condition 16(f) where archaeological sites also involve Ngā Taonga Tuku Iho (treasures handed down by our ancestors) and where feasible and practicable to do so;
- i. Methods for protecting or minimising adverse effects on historic heritage and archaeological sites within the Designation during Project Works as far as practicable in line with the ICOMOS NZ Charter and including construction methods that minimise vibration (for example fencing around historic

- heritage and archaeological sites to protect them from damage during construction); and
- j. ~~Training~~ requirements for contractors and subcontractors on historic heritage ~~and archaeological~~ sites within the Designation, legal requirements relating to accidental discoveries, and implementing the Accidental Discovery Protocol. The training shall be undertaken under the guidance of a Suitably Qualified and Experienced Person and Mana Whenua representatives (to the extent the training relates to cultural values identified under condition 16(f) and shall include a pre-construction briefing to contractors;
 - k. How condition 81.a-j address the following sites:
 - i. Woodthorpe House (CHI 22114, R09/2064);
 - ii. Dome Valley teacher's residence (CHI 22119, R09/2226);
 - iii. Dome Valley school site (CHI 22118, R09/2225);
 - iv. Phillips' Cottage (CHI 19027, R09/2063);
 - v. Whitson's House and Stockyard (CHI 22117, R09/2224); and
 - vi. World War II military camps (various) in the Warkworth area.
 - l. Construction and post-construction reporting requirements; and
 - m. Measures to mitigate adverse effects on historic heritage that achieve positive heritage outcomes. Measures may include, but not be limited to: increased public awareness and amenity of historic heritage sites and places, interpretation, repatriation and donation of historic heritage material to suitable repositories and publication of heritage stories.

Accidental discovery during construction

- 82. Prior to the start of Project Works, the Requiring Authority shall prepare an Accidental Discovery Protocol for any accidental historic heritage ~~archaeological~~ discoveries which occur during Project Works.
- 83. The Accidental Discovery Protocol shall be consistent with the NZ Transport Agency Minimum Standard P45 Accidental Archaeological Discovery Specification, or any subsequent version and the Auckland Unitary Plan Accidental Discovery Rule (E11 Land disturbance Regional – E11.6.1)
- 84. The Accidental Discovery Protocol shall be prepared in collaboration with Mana Whenua and consultation with Auckland Council and HNZPT and modified as necessary to reflect the site-specific Project detail. Collaboration and consultation shall be undertaken with best endeavours by all parties and concluded within 30 Days.
- 85. The Accidental Discovery Protocol shall be implemented throughout the Project Works. ~~except in circumstances where an Archaeological Authority has been granted by HNZPT for the Project in which case the accidental discovery requirements of the Archaeological Authority shall prevail.~~

New condition (85A)

Electronic copies of all historic heritage reports relating to historic heritage investigations (evaluation, excavation and monitoring etc.), including interim reports, shall be submitted to the Manager (in consultation with Manager: Heritage Unit) as soon as they are produced.

New condition (85B)

The Suitably Qualified and Experienced Person shall record and log any heritage discovery and on-going compliance with the conditions of this designation. This log shall be provided to the Manager (in consultation with Manager: Heritage Unit) at monthly intervals, or upon request.

New condition (85C)

In the event that any unrecorded historic heritage sites are exposed as a result of the work, these shall be recorded and documented by a Suitably Qualified and Experienced Person for inclusion within the Auckland Council Cultural Heritage Inventory (CHI). The information and documentation shall be forwarded to the Team Manager: Heritage Unit (heritageconsents@aucklandcouncil.govt.nz) within one month of the works being completed on site.

Air quality

86. The Requiring Authority shall avoid, as far as practicable, objectionable or offensive odour, dust and fumes arising from construction activities beyond the boundary of the Designation impacting on HSRs.
87. The Requiring Authority shall prepare a Construction Air Quality Management Plan (CAQMP) to outline the measures to be adopted to meet Conditions 86. The CAQMP shall be prepared by a Suitably Qualified and Experienced Person and shall include:
- a. A description of the works, and periods of time when emissions of odour, dust or fumes might arise from Construction Works;
 - b. Identification of HSRs that may be adversely affected by emissions of odour, dust or fumes from Construction Works;
 - c. Methods for mitigating dust that may arise from:
 - i. exposed surfaces, vehicle movements and truck loads, potentially including watering for dust suppression, wind fencing, metalling of yards and access roads, minimising open earthwork areas, re-vegetation, controlling vehicle speeds, covering or dampening loads and limiting drop heights, limiting earthworks during high winds;
 - ii. dust trackout from construction site exits onto sealed roads, potentially including the use of vacuum sweeping, water sprays or wheel washes for trucks;
 - iii. construction traffic on unsealed roads, potentially including sealing sections of road where construction traffic is close to HSRs; and
 - iv. mineral extraction and rock crushing, potentially including minimum setbacks from HSRs where necessary, emissions control equipment (e.g. enclosure and/or water sprays at transfer points), and monitoring of weather conditions and visual inspections; and
 - d. Methods for maintaining and operating construction equipment and vehicles to manage visual emissions of smoke from exhaust tailpipes;
 - e. Methods for undertaking and reporting on the results of daily inspections of Construction Works that might give rise to odour, dust or fumes;

- f. ~~Methods for monitoring and reporting on the state of air quality during Construction Works, including wind speed, wind direction, air temperature and rainfall;~~
- g. ~~Methods to remediate objectionable and/or offensive dust deposits from Construction Works on HSRs, potentially including cleaning exterior surfaces of houses or driveways and/or cleaning of water tanks and replenishment of water supplies.~~
- h. ~~Procedures for maintaining contact with stakeholders and notifying of proposed construction activities, with reference to the SCMP, including complaints procedures;~~
- i. ~~Construction operator training procedures; and~~
- j. ~~Contact details of the site supervisor or Project manager and the Project Liaison Person (telephone number and email or other contact address).~~

88. ~~When preparing the CAQMP the Suitably Qualified and Experienced Person shall having regard to the guidance contained in the Good Practice Guide for Assessing and Managing Dust, Ministry for Environment, 2016 and the NZ Transport Agency Guide to assessing air quality impacts from state highway projects (version 2.3, October 2019), or any subsequent version.~~

MAINTENANCE AND OPERATIONAL CONDITIONS

Operational Noise

Noise Criteria Categories

89. ~~Unless provided for in Condition 89A, the Requiring Authority shall design and construct the Project to ensure that the operational State highway achieves compliance with the predicted Noise Criteria Categories identified in Table 2 at each of the identified PPFs. as far as practicable adopting the Best Practicable Option. Achievement of Compliance with the Noise Criteria Categories shall be by reference to based on a traffic forecast for a high growth scenario in a design year at least 10 years after the programmed opening of the Project.~~

Table 2: Identified PPFs

Address	Noise Criteria Category	<u>Predicted noise level</u>	New or Altered Category (as per NZS 6806)
83 Valerie Close	A	<u>57</u>	New
74 Wyllie Road	A	<u>52</u>	New
12 Wyllie Road	A	<u>57</u>	New
2 Wyllie Road	A	<u>57</u>	New
2 - 2 Wyllie Road	A	<u>57</u>	New
371 Woodcocks Road	A B	<u>60</u>	New
372 Woodcocks Road	B	<u>62</u>	New
79 J Viv Davie Martin Drive	A	<u>57</u>	New
79 B Viv Davie Martin Drive	A	<u>57</u>	New
79 K Viv Davie Martin Drive	A	<u>57</u>	New
78 B Viv Davie Martin Drive	A	<u>57</u>	New
79 A Viv Davie Martin Drive	A	<u>57</u>	New

Address	Noise Criteria Category	Predicted noise level	New or Altered Category (as per NZS 6806)
78 B Viv Davie Martin Drive	A	<u>57</u>	New
78 A Viv Davie Martin Drive	A	<u>57</u>	New
78 Viv Davie Martin Drive	A	<u>57</u>	New
115 Kaipara Flats Road	A	<u>52</u>	New
115 - 2 Kaipara Flats Road	A	<u>52</u>	New
130 Kaipara Flats Road	B <u>A</u>	<u>56</u>	New
131 Kaipara Flats Road	A	<u>55</u>	New
211 Kaipara Flats Road	A	<u>53</u>	New
214 Kaipara Flats Road	A	<u>51</u>	New
215 Kaipara Flats Road	B <u>A</u>	<u>56</u>	New
91 SH1, Warkworth	A	<u>57</u>	Altered
27 SH-1, Warkworth	A	<u>61</u>	Altered
63 SH-1, Warkworth	A	<u>57</u>	Altered
42 SH-1, Warkworth	A	<u>41 (69 from SH1)</u>	Altered
39 Phillips Road	A	<u>51</u>	New
105 SH1, Warkworth	A	<u>57</u>	Altered
102 SH-1, Warkworth	A	<u>60</u>	Altered
104 SH1, Warkworth	A	<u>39 (65 from SH1)</u>	Altered
6 Kaipara Flats Road	A	<u>59</u>	Altered
161 Kraack Road	A	<u>49</u>	New
145 Kraack Road	A	<u>39</u>	New
127 Kraack Road	A	<u>48</u>	New
696a SH-1, Dome Forest	A	<u>64</u>	Altered
696b SH-1, Dome Forest	A	<u>64</u>	Altered
1232A SH-1, Wayby Valley	A	<u>54</u>	Altered
25 Wayby Station Road	A	<u>64</u>	Altered
49(a) Wayby Station Road	A	<u>64</u>	Altered
4 Wayby Station Road	A	<u>57</u>	Altered
44 Wayby Station Road	A	<u>58</u>	Altered
177 Rustybrook Road	A	<u>53</u>	New
351 Wayby Valley Road	A	<u>53</u>	New
64 Whangaripo Valley Road	A	<u>51</u>	New
96 Whangaripo Valley Road	A	<u>53</u>	New
40 Borrows Road	A	<u>56</u>	New
47 Borrows Road	A	<u>53</u>	New
213 Whangaripo Valley Road	A	<u>53</u>	New
263 Worthington Road	A	<u>47</u>	New

Address	Noise Criteria Category	<u>Predicted noise level</u>	New or Altered Category (as per NZS 6806)
250 Silver Hill Road	A	<u>50</u>	New
263 Silver Hill Road	A	<u>49</u>	New
273 Silver Hill Road	A	<u>48</u>	New
332 Silver Hill Road	A	<u>53</u>	New
344 Silver Hill Road	A	<u>51</u>	New
469 SH-1, Te Hana	A	<u>52</u>	Altered
490 SH-1, Wellsford	A-B	<u>65</u>	Altered
10 Charis Lane	A	<u>51</u>	Altered
13 Charis Lane	A	<u>54</u>	Altered
8 Charis Lane	A	<u>54</u>	Altered
7 Charis Lane	A	<u>53</u>	Altered
9 Charis Lane	A	<u>55</u>	Altered
6 Charis Lane	A	<u>52</u>	Altered
542 SH-1, Topuni	A	<u>55</u>	Altered
557 SH-1, Wellsford	A	<u>55</u>	Altered
139 Vipond Road	A	<u>56</u>	Altered
129 Vipond Road	A	<u>51</u>	Altered
575 SH-1, Topuni	B	<u>58</u>	New
28 Waimanu Road	A	<u>54</u>	Altered
641 SH-1, Wellsford	A	<u>59</u>	Altered
705 SH-1, Wellsford	C	<u>70</u>	Altered
704 SH-1, Wellsford	C	<u>68</u>	Altered
17 Maeneene Road	A	<u>61</u>	Altered
45 Maeneene Road	A	<u>59</u>	Altered
33 Maeneene Road	A	<u>58</u>	Altered
18 Maeneene Road	A	<u>56</u>	Altered
35 Vipond Road	B	<u>60</u>	New
17 Vipond Road	A	<u>55</u>	New

New condition (89A)

Building Modification Mitigation in accordance with Conditions 92 to 98 shall be implemented for those PPFs where compliance with the identified Noise Criteria Category in Table 2 is not practicable following the implementation of the Best Practicable Option Structural Mitigation. The owners of affected PPFs shall be consulted with on the change of outcome, and a record of the consultation shall be made available to Council on request.

New condition (89B)

Prior to construction commencing, the Requiring Authority shall identify any dwellings inside the designation that will be retained for residential purposes following completion of the State highway. These dwellings shall be assessed as PPFs in accordance with NZS

6806:2010, and the Best Practicable Option mitigation be included in the design and construction of the State highway. The assessment shall be available to Council on request.

Implementation of noise mitigation

90. The Requiring Authority shall implement all Structural Mitigation or other noise mitigation identified in the Noise Mitigation Plan (condition 99) prior to the Project becoming operational, except for the road surfaces identified in condition 91.
91. The Requiring Authority shall use Porous Asphalt, or another road surface with equivalent or better low-noise generating characteristics, from where the Project connects with the Ara Tūhono Puhoi to Warkworth section of SH1 to the southern portal of the tunnels, and from Dibble Road (a forestry road) to the northern tie-in with the existing SH1 north of Maeneene Road. Such a surface shall be implemented within 12 months following the Project being officially opened to general public traffic.

Building-Modification Mitigation

92. Prior to the start of Construction Works, a Suitably Qualified and Experienced Person shall identify:
- a. Category B PPFs where the predicted sound level increases by more than 3dB as a result of road-traffic noise from the operational Project (for PPFs assessed against the Altered Road criteria calculated from the NZS 6806 “do-nothing” level , and for PPFs assessed against the New Road criteria calculated from the NZS 6806 “existing” level to the level with all detailed design Structural Mitigation); and
 - b. Category C PPFs, following implementation of all detailed design Structural Mitigation; and
 - c. PPFS where Noise Criteria Category of Table 2 cannot practicably be achieved following the implementation of all detailed design Structural Mitigation.

New condition (92A)

Prior to the removal of any parts of the designation under Condition 1, the Requiring Authority shall carry out Building Modification Mitigation in accordance with Conditions 94 to 98 on any dwellings that will be used for residential purposes not already identified in Condition 89B.

Building Modification

93. The Requiring Authority shall apply the Building Modification conditions 94 to 98 for any PPF that is predicted under condition 89 to be:
- a. Category B in the Noise Criteria Categories and the change in noise from the operational road is predicted to be more than 3dB compared to the situation without the Project (calculated from the NZS 6806 “do-nothing” level); or
 - b. Category C in the Noise Criteria Categories.
94. If the owner(s) of the PPF agree to entry within 12 months of the date of the request for entry, the Requiring Authority shall engage a Suitably Qualified and Experienced Person to visit the building and assess the noise reduction performance of the existing building envelope.
95. If the Requiring Authority cannot meet the requirements of Conditions 90 because:
- a. The building owner(s) agreed to entry, but entry was not attainable by the Requiring Authority (e.g.

entry denied by a tenant); or

- b. The building owner(s) did not agree to entry within 12 months of the date of the request for entry (including where the owner did not respond within that period); or
- c. The building owner(s) cannot, after reasonable enquiry, be found prior to completion of construction of the Project.

The Requiring Authority will be deemed to have complied with those conditions and the Requiring Authority shall not be required to implement Building-Modification Mitigation to that building.

96. Within six months of an assessment of a PPF being undertaken in accordance with Condition 92, the Requiring Authority shall give the owner(s) of each PPF written notice advising:
- a. If Building-Modification Mitigation is required to achieve 40 dB LAeq(24h) inside Habitable Spaces when windows are open 100mm for ventilation; and
 - b. The options available for Building-Modification Mitigation, if required; and
 - c. That the owner has three months to decide whether to accept Building-Modification Mitigation and to advise which option for Building-Modification Mitigation the owner(s) prefers (if more than one option is available).
97. The Requiring Authority shall implement the Building-Modification Mitigation agreed in accordance with Condition 94, in a reasonable timeframe agreed with the owner.
98. If the Requiring Authority cannot meet the requirements of conditions 94 and 95 because:
- a. An alternative agreement for mitigation was reached with the building owner(s); or
 - b. The building owner(s) did not accept the offer to implement Building-Modification Mitigation within three months of the date of the written notice being sent (including where the owner did not respond within that period); or
 - c. The building owner(s) cannot, after reasonable enquiry, be found prior to completion of construction of the Project;
- then the Requiring Authority will be deemed to have complied with those conditions.

Noise Mitigation Plan

99. Prior to the Project becoming operational, the Requiring Authority shall prepare, a Noise Mitigation Plan (NMP) in accordance with the NZ Transport Agency P40 Noise Specification 2014, ~~or any subsequent version~~ and provide it to the Manager for ~~information certification~~. The Noise Mitigation Plan shall include confirmation that consultation has been undertaken with affected property owners of any additional PPFs (Condition 89A).
100. Within 12 months of completion of Construction Works, or within 3 months of the low noise road surface being installed (Condition 91), whichever is the later, the Requiring Authority shall prepare, a post-construction review report in accordance with the NZ Transport Agency P40 Noise Specification 2014, ~~or any subsequent version~~, and provide the post-construction review report to the Manager for information.

Landscape

101. The Requiring Authority shall maintain (and replace unsuccessful planting) all landscape planting

undertaken as part of the Project for a period of 5 years following opening of the Project in accordance with “NZTA P39 Standard Specification for Highway Landscape Treatments 2013”, or any subsequent amendment.

New Condition (102) – Operational Traffic – integration with local roads

Prior to lodging any outline plan of works, the Requiring Authority shall prepare a Network Integration Plan in consultation with Auckland Transport to demonstrate how the Project integrates with the local roads identified in condition 103 and with future improvements planned by the Auckland Council. The Network Integration Plan shall include details of physical works at the interface between the State highway and the local road network, and shall address such matters as lane configuration, traffic signal co-ordination, signage and provision for buses. The Network Integration Plan shall be submitted to the Auckland Council for the Project or relevant Project stage.

New condition 103

The NIP shall address the integration of the project with the following local roads:

- i. Woodcocks Road, Carran Road (Map 1, R-101)
- ii. Kaipara Flats Road (Map 2, R-102)
- iii. Wayby Valley Road, Rustybrooke Road (Map 6, R-106)
- iv. Farmers Line Road, Worthington Road (Map 7, R-107)
- v. Silver Hill Road (Map 8, R-108)
- vi. Mangawhai Road (Map 9, R-109)

ATTACHMENT 3

SPECIALIST REVIEWS – NOTICE OF REQUIREMENT

Technical Memo –Specialist Unit

To:	Wayne Siu
CC:	Blair Masefield
From:	Stephen Brown – Director, Brown NZ Limited (landscape Architect)
Date:	14 August 2020

1.0 APPLICATION DESCRIPTION

Application and property details

Applicant's Name:	Waka Kotahi – New Zealand Transport Agency
Application purpose description:	Notice of Requirement to amend the Unitary Plan and associated Regional Resource Consents to enable the construction, operation and maintenance for a new four lane state highway from Warkworth to Wellsford (Te Hana).
Relevant application numbers:	BUN60354951. The individual resource consent application numbers are: LUC60354952, LUS60354955, WAT60354953, WAT60355184, WAT 60356979, DIS60354954, LUC60355185, DIS60355186
Site address:	Multiple sites located between Warkworth and Te Hana.

2.0 QUALIFICATIONS & EXPERIENCE

My name is Stephen Brown. I am a director of Brown NZ Ltd, specialist landscape architectural consultant. I have held that role since 1998.

I am a consultant to Auckland Council providing specialist input to Council's review of the project in relation to its landscape and amenity effects.

I hold the qualifications of Bachelor of Town Planning (Auckland University) and also hold a post-graduate Diploma of Landscape Architecture (Lincoln University). I am a registered landscape architect, as well as a Fellow and past President of the New Zealand Institute of Landscape Architects.

I have practised as a landscape architect for 38 years. During that period, the great majority of my professional practice has focussed on landscape assessment and planning. That work embraces multiple district and regional landscape assessments, ranging from the Auckland Region (1984 and 2008) to the West Coast of the South Island (2012). It also traverses development projects dating back as far as assessment of the Channel Tunnel Rail Corridor options in 1985 and more recent projects

that include expansion of the Marsden Point and Tauranga ports, a gondola up to The Remarkables Ski Field, nine apartment buildings in the Launch Bay Precinct at Hobsonville Point, the ALPURT B2 Motorway Corridor, the Waterview Connection Project and review of the East West Link and Northern Corridor Improvement projects.

3.0 ADEQUACY OF INFORMATION

The assessment below is based on the information submitted as part of the application. In particular, I have reviewed the following documents:

- *Volume 1 - Warkworth to Wellsford Assessment of Effects on the Environment*
- *Volume 2 – Technical Assessment Reports*, and, in particular, the following sections:
 - Landscape and Visual Effects Assessment Report (November 2018)
 - Landscape and Visual Effects Assessment Figure Set (November 2017)
- *Volume 3 - Warkworth to Wellsford Drawing Set*
- *Bridging The Gap: NZTA Urban Design Guidelines (2013);*
- *The NZTA Landscape Guidelines (Final Draft: 2014);*
- The *Auckland Unitary Plan* (Operative in Part), including Chapter D (Overlays), the Rural – Rural Production and Rural – Mixed Rural Zones, and Schedules 6, 7 and 8;
- *Best Practice Note 10.1, Landscape Assessment and Sustainable Management*, NZILA (2010).

It is considered that the information submitted is sufficiently comprehensive to enable the consideration of the effects of the application on an informed basis:

- a. The level of information provides a reasonable understanding of the nature and scope of the proposed activity as it relates to the AUP: OP.
- b. The extent and scale of any adverse effects on the environment are able to be assessed.

4.0 ASSESSMENT OF EFFECTS

The following assessment is divided into two sections:

Part 1: which addresses my analysis of Boffa Miskell Ltd's AEE report in January 2019; and

Part 2: which addresses NZTA's response to the s.92 request arising from that 2019 report.

PART 1.

2019 REVIEW INTRODUCTION

1.1 Description Of The Project

Sections 1.1 and 1.2 (respectively) of BML's report provide a brief 'Overview of Project' and a 'Project Description'. Key components of the project are all outlined in Section 1.2, while Figure 1 illustrates the path of the highway corridor.

Section 1.3 (Purpose and Scope of the Report) also identifies the 5 Landscape Character Areas that would be affected by the project. This material is further supplemented by a series of Baseline Maps, which show the path of the proposed highway relative to:

- Topography (NZ Topo 50 series)
- AUP zones
- Mapped topographic elevations
- Slope analysis of the terrain
- Hydrological analysis
- Land cover / activities
- Aerial photography of the 'site' and its surrounds
- Scheduled landscape, reserves and historic places
- Physical landscape units /types

In my opinion, this combination of descriptions and mapping offers an appropriate introduction to the project and its path through the landscape between Warkworth and Te Hana. The only parts of this introduction that are unclear from the outset are the reasons for the division of the assessment area into two sub-areas – north and south of the Hotoe River – as well as for construction purposes: north and south of the tunnels below the Hotoe River.

1.2 Physical Landscape Context

Section 3 of BML's report breaks the landscape surrounding the proposed SH1 corridor alignment down into five discrete landscape character areas. These are then described and in Section 3.1 reviewed relative to other relevant regional and district level, landscape studies – dating back as far as 1984. This overarching analysis is supplemented by the Baseline Maps referred to above, while Sections 3.2.1 to 3.2.5 analyse each landscape character area or 'unit' in more detail. The individual units are described in terms of their broad landscape characteristics (in part, aligned with Figures LV2 to LV10 of the Figure Set) in terms of their:

- Geology, topography and slope
- Hydrology
- Land Cover

- Human Uses and Future Development
- Sensory and perceptual aspects
- Historical associations
- Landscape Values (ONLs, ONFs, etc)

Some typical photos of each landscape character unit are also included in this ‘baseline evaluation’ and their key characteristics are summarised.

It is my opinion that the level of assessment is appropriate, given the corridor nature of the study, as too is the degree of detail included in this part of the report.

1.3 Relevant Statutory Provisions

At Section 2.2.2 of BML’s report, relevant AUP provisions are outlined: Chapter D addressing Overlays, and Chapter H, Zones, including the Rural Production and Mixed Rural Zones. This section is quite brief and does not mention Schedules 6 (Outstanding Natural Features), 7 (Outstanding Natural Landscapes) or 8 (High and Outstanding Areas of Natural Character Within the Coastal Environment).

However, the report appropriately describes the proposed corridor’s proximity to ONL 32 (Dome Forest) and ONF ID49 (Hoteo River), indicating that it appears unlikely to affect either. The coincidence between part of ONL 32 and the Sunnybrook Scenic Reserve is also addressed in this section. Unfortunately, none of the maps locate the highway corridor relative to the ONL and ONF, even though the Sunnybrook Scenic Reserve is delineated on LV9, together with the Dome Forest Stewardship Area and other ‘reserves’.

In relation to the aforementioned zones, Figure LV2 shows the AUP zoning pattern around the corridor, while p.17 includes a breakdown of the core “*Characteristics*” and “*Typical Features*” that the AUP (OiP) “*considers to be typical of the rural [production] and mixed rural zones.*” Unfortunately, it is not clear what this breakdown is derived from, as it doesn’t appear to relate to Chapter H of the Unitary Plan.

Even so, it is my view that the current overview is adequate in helping to set the scene for the both the NOR / application and the effects assessment.

1.4 Relevant Non-Statutory, Documents

Other documents that are relevant to the scope of BML’s assessment and the methodology adopted in relation to it are outlined in Section 2.1 of the report. These cover such documents as the NZILA *Best Practice Note 10.1* and NZTA’s *Landscape and Visual Assessment Guidelines* (both referred to above), as well as the *Landscape Character Assessment Guidance for England and Scotland* (2002), *An Approach to Landscape Character Assessment, North England* (2014). This section usefully explains what the relevant documents are; however, it is unclear if the two English ‘assessment guides’ provide any

meaningful input to the methodology adopted by BML for the corridor assessment.

Section 2.2.3 of the report also addresses NZTA's *Bridging the Gap*, which provides urban design guidelines for NZTA projects. As BML point out, the 10 urban design guidelines outlined in that document include 'designing for context', 'designing with nature', etc and these have informed the current corridor alignment. In the future, they will contribute to further refinement of the project. *Bridging The Gap* is also being used to assist with development of a "planning version" Urban Landscape Design Framework for the project, although this has not been provided to date.

Finally, Section 2.2.4 addresses the *NZTA Landscape Guidelines* (2014), which focus on ten landscape design principles that address such matters as a 'context sensitive and place based approach' (to design), 'facilitate community engagement and a collaborative approach' and 'understand the physical conditions'. These all make sense in relation to the evolution and refinement of the current project. Other, related, documents are also referred to, which cover matters ranging from bridge and tunnel design to planning for pedestrians and cyclists.

Sections 2.2.3 and 2.2.4 usefully lay the foundation for further design development, beyond the ambit of the current effects assessment. Although brief, they are considered to be appropriate given the stage that the project is presently at. They have usefully helped to inform the assessment methodology adopted by BML, which addresses the current environment in terms of its overall "**Sensitivity**" – addressed via sub-criteria "*Susceptibility to Change*" and "*Landscape Values*" – before addressing the effects associated with landscape change.

1.5 Assessment Methodology

The assessment methodology adopted by BML for their report is outlined at the start of Section 2 of their report. This includes an explanation of what 'landscape effects' and 'visual effects' comprise – although the description of 'visual effects' seems more aligned with amenity effects in terms of Section 7(c) of the Resource Management Act. Regardless, most of the outlined process complies with best practice, including: the identification of receiving environments / catchments and audiences, the selection of 22 representative viewpoints, and the production of visual simulations for a sample of these viewpoints.

Table 1 in the BML report further indicates (as described above) that each landscape character unit is assessed in terms of its "**Sensitivity**" – addressed via sub-criteria "*Susceptibility to Change*" and "*Landscape Values*" – before the "**Level of Change**" is assessed, employing criteria that relate to:

- The "*Size or Scale*" of change;
- The "*Geographic Extent*" or area of influence of such change; and
- The "*Duration and Reversibility*" of such change.

Tables 2 and 3 help to elaborate on exactly how the criteria have been applied 'on the ground', with

Table 3 describing the 7-point scale of effects employed by BML in relation to the criteria already described.

Section 2.3.6 also makes it clear that “*broader cultural values identified by Hokai Nuku and other interested iwi*” have also been taken into account, and are further explained at Section 9.18 of the report.

In my opinion, the methodology outlined by BML is appropriate in relation to the landscape effects of the NOR and those amenity effects that relate more to the wider community. Clearly, this approach is aligned with the Planning Version UDLF phase of the wider project.

1.6 Implementation Of The Assessment Methodology

Visual catchments and related viewing audiences for each landscape character unit are described at Sections 3.3.2 to 3.2.6, while Figures LV12 to LV17 comprise maps of the Zones of Theoretical Visibility for each of them. These maps help to explain, and usefully illustrate, the areas described as being exposed (visually) to the proposed highway corridor within each landscape character unit. These are supplemented by the representative viewpoint photos, contained in the Figure Set (Figures LV18 to LV34), which further assist with the depiction and ‘characterisation’ each of the landscape units that the corridor would pass through. Section 4 then addresses the effects of the proposed highway corridor on each landscape character unit by:

- Describing the “*key changes and impacts on landscape elements and features*” that the highway would give rise to;
- The “*impacts on wider landscape character*” that it would generate;
- The “*key mitigation measures*” that might be adopted in relation to the unit (Section 5 addresses the scope and application of such measures in some detail); and
- A summary of the effects that would arise with development of the highway within its corridor.

Complementing this unit-wide assessment, Table 10 focuses on the 22 viewpoints that BML has employed for more detailed analysis. For each of those viewpoints, the current view is described, then a summary of anticipated changes to it, is outlined. This leads in to an analysis of effects during construction, after construction, and the effects of the highway after implementation / establishment of the proposed mitigation measures (such as planting).

This analysis is followed by further investigation of the highway corridor’s effects at a more fine-grained level, employing further ZTV analysis. This, more detailed analysis, identifies 5 ‘pinch points’ or areas of greater impact, for which BML has developed a series of visual simulations – showing both the current view at each location and the proposed highway superimposed on each view, together with mitigation planting after 10 years (approximately). The simulations address views of SH1:

- Traversing the Hoteo River;

- At the mouth of the Wayby Valley, south of Wellsford;
- Within the Whangaripo Valley, east of Wellsford;
- From Vipond Road (north of Te Hana); and
- From Charis Lane (north of Te Hana).

Although these simulations appear to focus on areas of greater impact and sensitivity in relation to the public realm, they capture views, and reveal effects, that are in many respects typical of those that might be anticipated in relation to the project more widely.

On the basis of these images, together with the more wide-ranging, landscape character unit analysis, areas of high sensitivity are summarised at p.71 of BML's report, and immediately after this, visual mitigation measures are proposed in relation to five key areas – to be incorporated in the final SH1 design and NOR / application

In my opinion, the effects identified reflect the landscape characteristics and values identified, the changes to landscape character that would emerge for each landscape character unit and the mitigation that might be implemented – including design and refinement of highway / bridge elements and planting mitigation. There is also mention of where construction compounds might be located to reduce the highway's construction effects, and how the gateways to Wellsford and Te Hana might be treated to emphasise their functions. In addition, Section 4.1.6 confirms that this assessment is based on an indicative highway alignment and that this alignment might be refined or fine-tuned in relation to:

- Bridges across the Mahurangi River and Kourawhero Stream;
- The Hoteo River Viaduct and its effects on SEA T 683; and
- Potential encroachment on SEA T 685.

As a whole, BML's assessment of effects is both detailed and logical insofar as it goes – progressing from the general study area to the individual landscape character units, then the specifics of more 'critical', or sensitive, locations. In particular, it appears to address changes to the landscape character of the corridor's surrounds thoroughly and appropriately.

On the other hand, the degree to which the proposed corridor would affect nearby residential properties remains largely unresolved. For example, the locality around Viewpoint 5 (Phillips Road and Kaipara Flats Road) contains a number of rural-residential properties that overlook the valley and proposed corridor route traversing Kaipara Flats Road. Yet, this is not mentioned in the Landscape Effects Analysis for *Character Area A: Warkworth North* (Section 4.1.1) or the Viewpoint Analysis of *Table 10*. As a result, the degree to which the proposed highway would affect local residential properties and the amenity currently enjoyed by their occupants is unclear. Perhaps reflecting the assessment's strong focus on landscape values and change, the mitigation measures currently proposed are also rather brief in relation to 'visual effects' (Section 5.1):

The focus for landscape mitigation is therefore to establish large areas of revegetation that provides a strong landscape framework to mitigate the loss of rural amenity and habitat creation around a few key areas that contain existing high value features which include the Mahurangi River (left branch), the Kourawhero Stream and the Hoteo River and flood plain.

.....

Visual mitigation is based on planting to screen views and provide separation between the highway and adjacent residential dwellings and design of earthworks, structures and elements of the highway to ensure integration with the adjacent landscape.

Although amenity effects (in relation to local residents) are mentioned in the descriptive analysis of some landscape units and viewpoints, this coverage is variable. This creates uncertainty about the degree to which such effects have been evaluated. Yet, they remain important in relation to finalising the highway's alignment and assisting with the identification of amelioration and mitigation measures. In turn, this leaves residents living near the corridor uncertain about the proposed motorway on a number of fronts:

- The exact alignment and proximity of the complete motorway to their properties and dwellings;
- Its relative elevation and related impacts on local landforms;
- Its impact on existing stands of bush and other vegetation (some of which has both ecological value and significance from a rural amenity standpoint);
- The likely placement, type and scale of mitigation measures, including bunding, walling and planting; and
- The location of construction compounds.

As a result, the report provides no certainty or clear guidance about the degree to which local residents near the corridor would be affected by visual exposure to the motorway, noise generated by its use and construction activities.

1.7 Conclusions

A large number of recommendations are made in Section 5 of BML's report addressing:

- Construction
- Earthworks
- Planting and revegetation
- Structures and features.

In my view, these appropriately reflect the role of the assessment both to evaluate the effects of the corridor project and to assist with design detailing. The recommendations respond to the characteristics of the landscape character units and key locations addressed by BML. In an iterative vein, they should also contribute to refinement of the project.

Even so, it was my assessment in early 2019 that BML's assessment needed to turn its attention to the residential amenity effects of the project – both to assist with both further refinement of the project and to provide a fuller understanding of its effects.

2019 REVIEW ANALYSIS

2.1 Landscape Effects & Amenity Effects in Relation To The Wider Community

I undertook three detailed site visits in the course of my review. As a result, it was my opinion that BML had accurately assessed the effects that the SH1 NOR and related applications would have in relation to the landscape character, values and sensitivities of the various landscape units identified and related viewpoints. Those effects included both temporary / construction effects, and long-term or permanent effects – ie. upon completion and after the establishment of mitigation.

I also considered that the effects ratings found in Tables 5 to 9 might well be confusing for members of the public because of their split into separate rows addressing “*landscape Elements and Features of Value*” and “*Wider Landscape Character*”. However, I felt that the findings for all five landscape units were appropriate and I concurred with the effects ratings found in Tables 5 to 9. BML's Table 10 then focused on 22 viewpoints that lie within more sensitive parts of the corridor landscape. Again, I visited those 22 locations and concluded that the ratings attributed each of them (during the construction period, upon completion of the highway, and after mitigation has been established) were accurate and appropriate.

2.2 Amenity Effects

In addition, I undertook (January 2019) a separate assessment of the likely effects that the proposed corridor would have on neighbouring residents, taking into account:

- The number of residential properties likely to be affected within each ‘catchment’ (see attached **Figures 1-5**);
- The likely visibility of the corridor - taking into account proximity and relative elevation;
- The aesthetic appeal and cohesion of their current landscape surrounds;
- The peace, quiet and tranquillity of that setting;
- Its sense of place and identity (if evident); and
- Its recreational value.

On the basis of these criteria, I rated the effects of the highway corridor for the 9 ‘residential catchments’ described overleaf in **Table 1** (also see **Figures 6-11**). The ratings adopt the following scale (again, overleaf):

Very Low
 Low
 Low-Moderate
 Moderate
 Moderate-High
 High
 Very High

Table 1.

	Location:	Effects- During Construction:	Effects – Upon The Completion of Construction	Effects – After Establishment of Mitigation
1	Viv Davie-Martin Drive	Moderate	Low-Moderate	Low
2	Carran Road	Low - Moderate	Low	Low
3	Phillips Road	Very High	High	Moderate - High
4	Wayby Station Road	Moderate	Low-Moderate	Low
5	Spindler Road	Low-Moderate	Low	Very Low
6	Wayby Valley	Moderate	Low - Moderate	Low - Moderate
7	Borrows Road	Moderate - High	Moderate-High	Moderate-High
8	Silver Hill Road	Moderate - High	Moderate	Low - Moderate
9	Charis Lane	Low	Low	Very Low

This rating scale took into account the likely purchase of properties within the designation area by the Transport Agency, but not those outside it. In addition, the level of screening and mitigation provided by bunding and planting remained subject to conjecture. Consequently, the ratings were only indicative at the time of my review.

Importantly, I considered that BML needed to undertake its own assessment of the various residential catchments exposed to the highway corridor so as to more directly address the residential amenity effects of the project with reference to Section 7(c) of the Act. In my opinion, this was important, not just in its own right, but to ensure that both the landscape and amenity effects assessments contributed more meaningfully to further refinement of the W2W project.

2019 REVIEW CONCLUSIONS

Sections 1.1 and 1.2 (respectively) of BML's report provided a brief 'Overview of Project' and a 'Project Description'. Key components of the project – the highway corridor, interchanges, tunnel, bridges, etc – were all described and appropriately assessed in terms of the landscape that the project would pass

through. As such, I considered BML's report to be substantially complete.

Even so, in my 2019 review I stated that I felt the following, relatively minor matters should be explained by BML in an addendum to their AEE report:

1. Provision of a brief explanation for the 'subdivision' of the study area into areas north and south of the Hoteo River, and north and south of the tunnels (below the Hoteo River), as this breakdown didn't appear to carry through to the actual identification of Landscape Character Units in BML's report or the related evaluation of 'corridor effects'.
2. Provision of a map showing the location of ONLs, ONFs and HNC / ONC areas within the general vicinity of the highway corridor.
3. Provision of a brief explanation of the contribution that the *Landscape Character Assessment Guidance for England and Scotland* (2002) and *An Approach to Landscape Character Assessment, Natural England* (2014) made to the corridor report.

More importantly, however, I was of the opinion that the issue of amenity effects – in particular of effects on residents living near the motorway corridor – still needed to be addressed, both in response to Section 7(c) of the RMA and to fulfil the requirements of the Act's Schedule 4. Naturally, any such assessment is also important for the local landowners potentially impacted by the motorway proposal and in relation to further refinement of the corridor proposal, including the further evolution of related amelioration and mitigation measures.

PART 2.

NZTA's S.92 Reply, dated the 3rd August 2020, addresses the first of these matters by confirming that:

".... they inform the determination of landscape character areas and the definition of key landscape characteristics. Landscape Character Areas were defined by identifying Landscape Units which are areas with similarities in geology, topography, slope, hydrology and landcover. Land use, sensory and perceptual aspects are then added to define character areas. This process is in accordance with the referenced international documents and whilst our methodology is broadly consistent with international best practice and NZILA methodology, there will always be some differences in terms of how landscapes are defined and characterised including individual preference."

Turning to the more significant matter of potential effects on the residential amenity of those living near the W2W corridor, the S.92 Reply states as follows:

We have now undertaken a further assessment of amenity effects on nearby residential properties. For consistency in approach, we have adopted the assessment approach used in the s92 request. That is, we consider the amenity effects on the residential catchments identified in the s92 request and we use the same assessment criteria.

This assessment involved a site visit and new photography taken from publicly accessible access points on the 7th of July 2020 (Refer attached Attachment 3A, Residential Catchments and Viewpoint Photography).

It is assumed that all properties located within the designation will be purchased by the Crown and therefore they have not been included in this assessment. In order to complete the exercise and provide clarity between the two assessments we have set out in Attachment 3B where we list the key characteristics for each landscape character area and assess the potential effects utilising the following assessment criteria.

Criteria

- *The number of residential properties likely to be affected within each 'catchment'*
- *The likely visibility of the corridor - taking into account proximity and relative elevation;*
- *The aesthetic appeal and cohesion of their current landscape surrounds;*
- *The peace, quiet and tranquillity of that setting;*
- *Its sense of place and identity (if evident); and*
- *Its recreational value.*

We acknowledge that amenity is an individual appreciation and that a number of submitters have raised specific amenity concerns in submissions. We will address those specific matters in evidence. Attachment 3B is a refinement of the assessment of amenity effects on nearby residential properties at specific locations undertaken to assist in the preparation of evidence as a result of submissions received and in response to the s92."

Viewpoints 23 (Figure 6) to 31 (Figure 10) of *Attachment 3A* capture views towards both proposed motorway corridor and some of residential properties potentially affected by it, while *Attachment 3B* comprises a table which addresses the 9 residential 'catchments' identified in my 2019 review report. That table describes the landscape characteristics associated with the existing landscape around each catchment before proceeding to assess the motorway corridor's effects on those residential receiving environments – firstly in a descriptive fashion, followed by the rating of effects for them:

- During construction;
- Upon the completion of construction; and
- After the establishment of mitigation.

This approach is very closely aligned with my S.92 Review recommendations.

I have reviewed BML's assessment for each of the residential receiving environments and note that most of the resulting ratings are generally aligned with my own preliminary assessment of effects in my **Table 1**. I consider that the motorway's effects would be slightly greater in relation to the Phillips Road and Kaipara Flats Road locale, whereas BML consider that the effects of the project would be higher in relation to the small residential cluster at Wayby Station Road and the recent subdivision at Charis Lane. Despite these and other slight differences – which are less significant in relation to long term (post mitigation) outcomes – I am satisfied that the approach adopted by BML addresses the amenity effects of the project on residential 'neighbours' in an appropriate manner. In my opinion, this part of the wider landscape assessment is technically competent and thorough insofar as it goes, given the corridor nature of the W2W project.

5.0 SUBMISSIONS

Submissions in relation to both the NOR and Applications traverse much the same range of landscape issues and are often repeated for both. I have loosely categorised them as follows:

Effects on the Environment & Landscape In General:

P Chestnut

(40 McInnes Ave, Kamo)

"How could you possibly obliterate such a beautiful spot from the landscape?"

D Civil

(48 Prospect Tce, Mt Eden)

"The proposed motorway will have major adverse effects on the environment.

The proposed motorway does not avoid any adverse effects.

The proposed motorway does not adequately mitigate or remedy the potential adverse effects.....

The application does not adequately address the effects on the rural environment

The application does not adequately address the visual effects of the project.

The proposal does not enhance the landscape.

The proposal is contrary to Section 6 of the RMA 1991.....

The proposal is contrary to Section 7 of the RMA 1991.....

The proposal does not provide for the maintenance and enhancement of amenity values, the quality of the environment.....

The proposal is contrary to section B9 Rural Environment in the Auckland Unitary Plan"

Effects on Specific Features, Landscapes & Views:

A & G Still

(77b Viv Davie-Martin Drive,
Warkworth)

*"The proposal will have major negative environmental impacts on:
Landscape & Visual amenity The Mahurangi River environment
Noise quality & volume – construction & operational Air quality
Construction traffic Night light Social & personal considerations The
Notice of requirement does not recognise the significant level of
these negative impacts. It leaves the actual design to a later decided
organisation to protect the environment and impacted people."*

E & T Dando

(39 Phillips Rd, Warkworth Flats)

"We live on a lifestyle block at 39 Phillips Road, Warkworth.....

we have serious concerns about the impact of the proximity of the motorway, including traffic, haulage, noise, vibration, dust, water quality, the impact on ecology, and our standard of living, during both the construction and operational stages. We do not believe the application documents adequately outline the effects the proposal will have on our property and way of life. Additionally, the proposal does not adequately mitigate these potential effects.

Visual impact during construction and operation

The construction and operation of the motorway will have significant visual impact on our property and the surrounding environment. With all of our neighbouring properties falling within the proposed designation, it is very likely that the main site office for the construction will be in line of sight from our property. We do not consent to our property being visually impacted by the construction of the motorway.

Light

We are very concerned about the light from construction and traffic management that may impact us. Our home was designed to use double glazing and no curtains. It gives us the opportunity to truly experience country living.

AC & NE Oguz

(215 Kaipara Flats Rd,
Warkworth):

"We have designed our minor dwelling (cottage) to maximize the outlook of the current tranquil surrounds

We cannot accurately describe in words the gut wrenching blow we experienced when we were notified of the project"

Rae Family Trust

(199 Shepherd Rd, Wellsford)

effects on: "the landscape and ecological planting on 199 shepherd road and adjacent , landscape views of proposed road from 199 shepherd road house and construction noise and traffic noise when constructed...."

B & J Drower

(542 SH1, Wellsford)

"The designation line as proposed runs along the hedge located to the south of our dwelling (as identified in figure 1 via red arrow). We have concerns on how the root zone of this hedge will be maintained as this feature is important for us as it assists in buffering and softening visual and noise effects associated with the adjacent road network which has seen an increase in traffic volume over the last 10 years.

We would like to see this natural feature protected where possible, including consideration on how the construction works may affect the root zone and function of this hedge."

D Mason & D McCallum

(211 Kaipara Flats Rd,
Warkworth)

"The principal outlook from our residence is directly to the bush block

WN_T_Mahu_03. Its removal either in part or in whole to facilitate the realigning of Kaipara Flats Road would have a substantial adverse effect on us. A photo showing the effect is included in Appendix A1 of this submission.

Our residence has as its backdrop WN_T_Mahu_02 and along with some adjoining young native plantings on our property is the principal view for people coming up our long driveway. Removing parts of WN_T_Mahu_02 would adversely affect our outlook.

A photo showing the effect is included in Appendix A2 of this submission.

Although this portion of WN_T_Mahu_02 is not within the proposed alignment, there is nothing in the application that actually protects any bush (or wetlands).

Require that all bush and wetland blocks be protected other than where required for the alignment to the extent practicable.....

the application makes it clear that vertical changes are to be allowed. Should the elevation rise to within about 4m of this ridgeline (at its lowest point which is roughly at chainage 47600m) then we will be affected by seeing traffic and possibly more severely by headlight spill reflected off nearby vegetation. These should be avoided. Should the elevation rise to the ridge line then these effects will become substantial and also include direct headlight spill...."

D Civil

(109 & 111 Kaipara Flats Rd,
Warkworth)

"The landscape, visual and flooding and degraded amenity effects of the Proposal on the above properties The effects of the Proposal on Double Truffle, a small but established orchard which is about to enter its most productive years for truffle. The interchange is proposed to pass directly over the orchard, yet there is no mention of it in any of the assessments provided by NZTA to date."

D Civil

(48 Prospect Tce, Mt Eden)

"The proposal includes a motorway interchange for Warkworth that is over designed, unnecessarily large, and will have adverse effect on the environment and amenity of the immediate area"
The proposed motorway "

T de Vaile Wildy

(165 Glenmore Rd, Albany)

"The plan for the proposed interchange is very expansive and will have an adverse effect on areas of native habitat that has a number of mature native trees -including large Totara, wet-lands, and parts of the Mahurangi River (a branch of which has been omitted from the plans). This will have a significant negative effect on vegetation and wildlife, particularly a variety of native birds who are living there happily at the moment. It will also impact the enjoyment of these areas by humans, whether walking or cycling, - they will now have to contend with the damage, the unnatural obstacles, the noise and the fumes."

WP Court

(124 Perry Rd, Warkworth)

"The proposed design of the Warkworth interchange is unnecessarily large and impacts on the surrounding environment in an adverse way.

Previous proposals used less land and only crossed the Mahurangi River once. The current proposal crosses the Mahurangi River FOUR times which clearly impacts more heavily on the river than is necessary."

J Withers

(250 Silver Hill Rd, Wellsford)

"Also, a steady stream of car lights will have a long term effect on the rural aspect and outlook from my property. Strategic plantings will need to be undertaken to restore the natural farmland contours and shield existing housing from both car lights and noise (during and after the completion of the project)."

Concerns About The Condition & Future Urban Landscape Design Plans (ULDPs):

WP Court

(124 Perry Rd, Warkworth)

"The application does not adequately address the visual aspects of the project.

Visual aspects are noted to be minimized through use of the Urban Landscape Design Framework (ULDF). During the P2W design process certain aspects in the ULDF simply did not make it into the

final design once the contractor came on board. Unilateral changes like this should not occur. The Transport Agency/ Contractor should have to make their case each time they change something. There is a definite need for increased oversight on the changes they make to address stakeholders concerns, and environmental issues. (The outcomes approach used in P2W has been shown to be flawed.)”

Insufficient Consultation in Relation To Landscape Issues (Among Others):

G Moses-Te Kani

(PO Box 4040260, Puhoi)

- “8.3 *Amend draft Designation Condition 49b (xv) to read ‘Design and landscape features to acknowledge cultural values relating to landscape design identified through condition 16(f).’*
- 8.4 *Add Designation Condition 49b (xvi) to read ‘Design and landscape features to acknowledge the recommendations of the Cultural Artworks Plan (if prepared), where feasible and practicable to do so.’*”

In my assessment, all of the matters identified in the submissions are now largely addressed in the updated BML assessment of effects, apart from:

- The generic issues of ‘why should a motorway be located in the affected landscapes?’ – which is too broad for BML’s assessment or my review to address; and
- The matter of Condition 49b (xv) and a proposed Condition 49b (xvi) – both of which should be addressed by iwi and NZTA’s cultural advisors even though they pertain to landscape outcomes.

In relation to the submissions addressing specific parts of the corridor and surrounding landscapes, both BML and myself agree that the project is likely to have an adverse effects on nearby residents, mostly living on rural blocks. Such effects remain unclear as they relate to matters identified in Section 1.6 of this report – including:

- The exact alignment and proximity of the motorway;
- Its relative elevation and related impacts on local landforms;
- Its impact on existing stands of bush and other vegetation;
- The likely placement, type and scale of mitigation measures; and
- The location of construction compounds.

While I largely agree with BML that most such effects can be addressed via refinement of the motorway design and related mitigation measures, this leaves local residents living near the corridor in a state of understandable uncertainty and anxiety over the ultimate effects of the W2W project.

For example, while location of the motorway near the eastern margins of the corridor would help to minimise its long term effects on the Carran Road and Phillips Road / Kaipara Flats Road catchments (including visual exposure, removal of significant stands of kahikatea, dust and noise), alignment of the motorway closer to the western edge of the corridor could have a very profound effect on some properties at both locations (**Figure 12**). This would also place much more reliance on effective mitigation measures to reduce and minimise such effects. As a result, the ratings for effects upon ‘completion of the motorway’ and ‘early implementation of mitigation’ are, at best, very broad brush– both as found in my Table 1 and in BML’s recent assessment.

Consequently, I agree with many submitters that the corridor approach contributes to uncertainty about the adverse effects that the W2W project will ultimately generate.

6.0 CONDITIONS

I have reviewed the proposed conditions and the only changes that I would like to see occur in relation to NZTA's Draft Designation Conditions are as follows:

Condition 45 c: the additional specification of 'residential properties in close proximity to the designation' as being among the *"highly sensitive locations requiring particular urban and landscape design treatment"* in this condition; and

Condition 49 b: that *"the design of mitigation measures (bundling, fencing, planting, the location of motorway infrastructure and furniture, etc) designed to address the adverse amenity effects of the motorway corridor on residential properties exposed to the designation"* should be added to the list of matters addressed under this condition.

Providing these changes are made to the draft conditions, I am satisfied with the adequacy of the other 'landscape' conditions proposed. These changes should, in my opinion, go some considerable way to addressing the amenity effects of the NOR and applications on residential neighbours and help to achieve the reduced residential amenity effects identified in BML's updated assessment.

In my opinion, it is critical that these modifications are carried through to the UDLF and UDLMP(s), and therefore contribute to the 'micro-siting' and alignment of the eventual motorway, as this will have a significant bearing on the amenity effects generated in the course of the project's completion through to the completion of associated mitigation measures. It will also affect the scale of mitigation required to manage such effects in the longer term and the eventual magnitude of such effects.

7.0 RECOMMENDATION

The assessment in this memo does not identify any reasons to withhold consent, although I retain significant concern about the corridor approach adopted for the W2W project near the residential properties described in my 2019 review and BML's recently updated assessment. In my opinion, this leaves considerable uncertainty about the short to medium term effects of the project, notwithstanding the likelihood that mitigation measures should be able to address most such effects in the longer term.

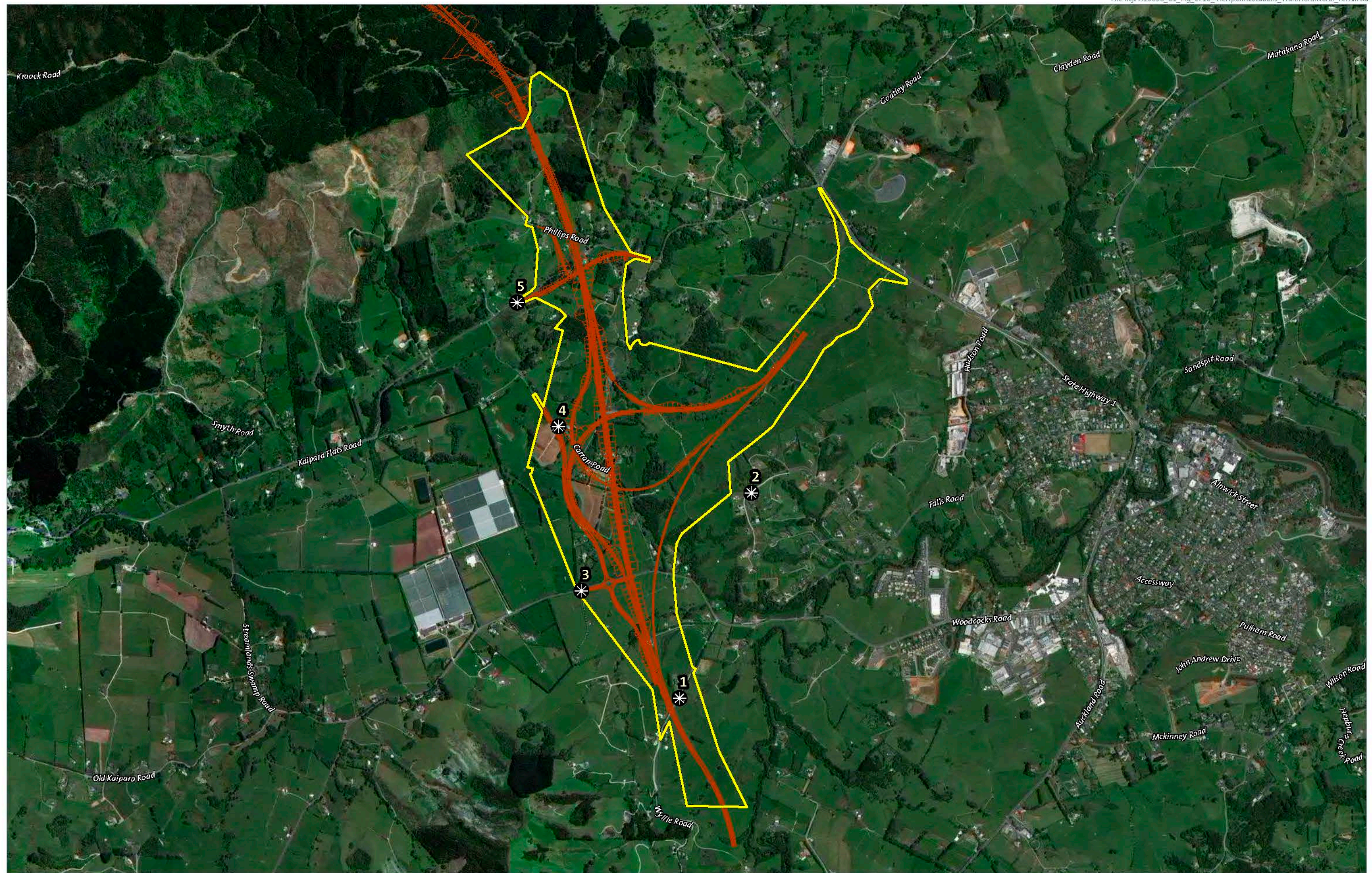
Notwithstanding these concerns, it is my opinion that proposal could be granted consent, subject to the recommended amendments to key conditions, for the following reasons:

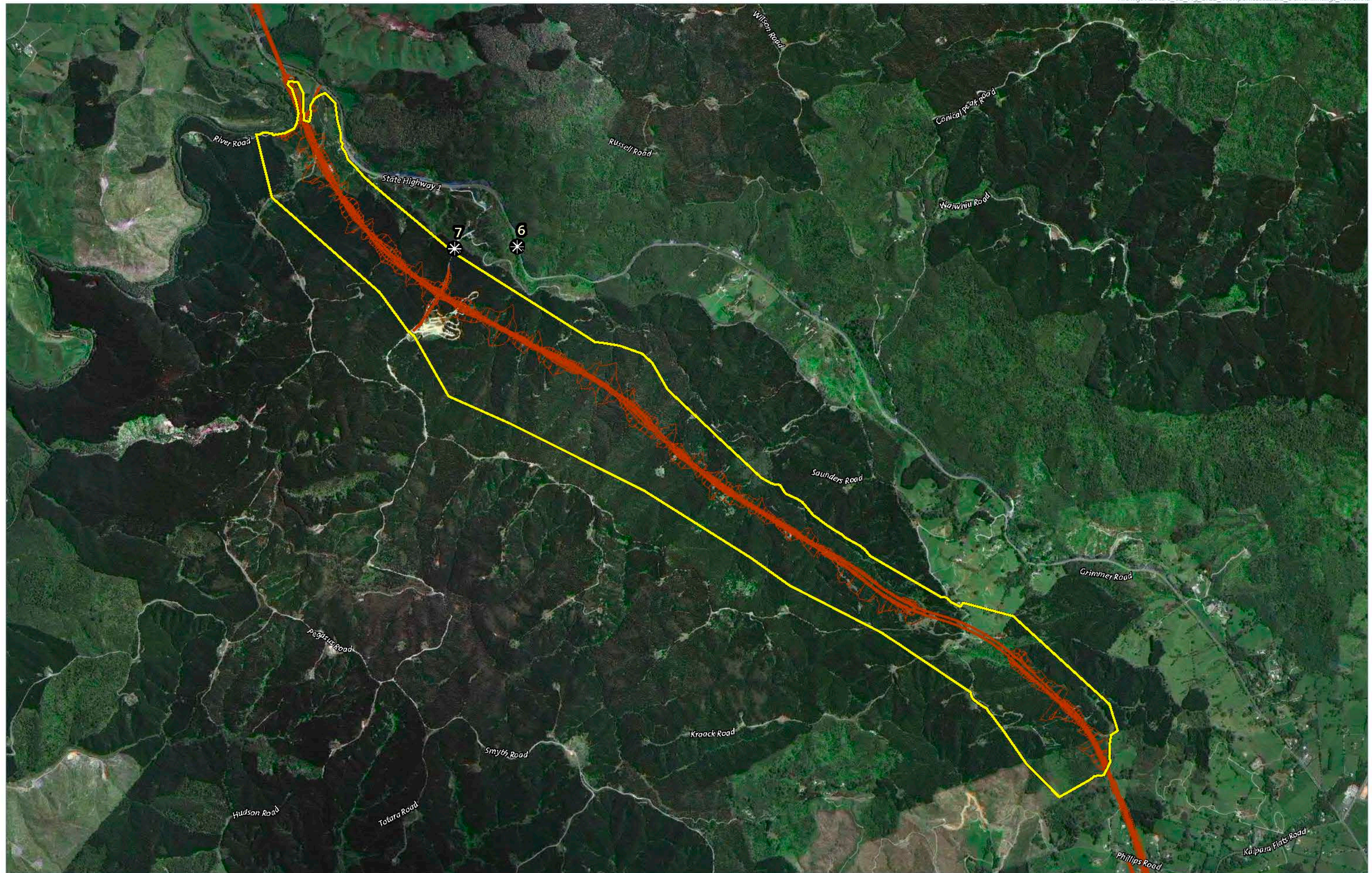
- Subject to the imposition of consent conditions, it is considered that the adverse effects on the landscape around the proposed motorway would be limited and acceptable in the long term; and
- The effects identified by BML in relation to residential 'catchments' near the W2W corridor can be managed via the proposed conditions (subject to my recommended modifications) to ensure that residential and rural amenity values are maintained – again focusing on the long term, even if such effects are more significant in the short to medium term.

8.0 REVIEW

Memo reviewed by:

Date:







Data Sources: DigitalGlobe Aerials, Jacobs, Boffa Miskell

Projection: NZGD 2000 New Zealand Transverse Mercator

Legend

- Photo Viewpoint
- Project Footprint
- Indicative Alignment

A16090 WARKWORTH TO WELLSWORD DESIGNATION

Figure LV24: Sector C - Upper Hotoe River Valley Viewpoint Locations

Date: 15 November 2017 | Revision: A

Plan prepared by Boffa Miskell Limited

Project Manager: John.Goodwin@boffamiskell.co.nz | Drawn: [blank] Checked: CBe





A16090 WARKWORTH TO WELLSFORD DESIGNATION

Figure LV31: Sector E - Te Hana East Viewpoint Locations



Data Sources: DigitalGlobe Aerials, Jacobs, Boffa Miskell

Projection: NZGD 2000 New Zealand Transverse Mercator

- Legend**
- Photo Viewpoint
 - Project Footprint
 - Indicative Alignment



Figure 1.

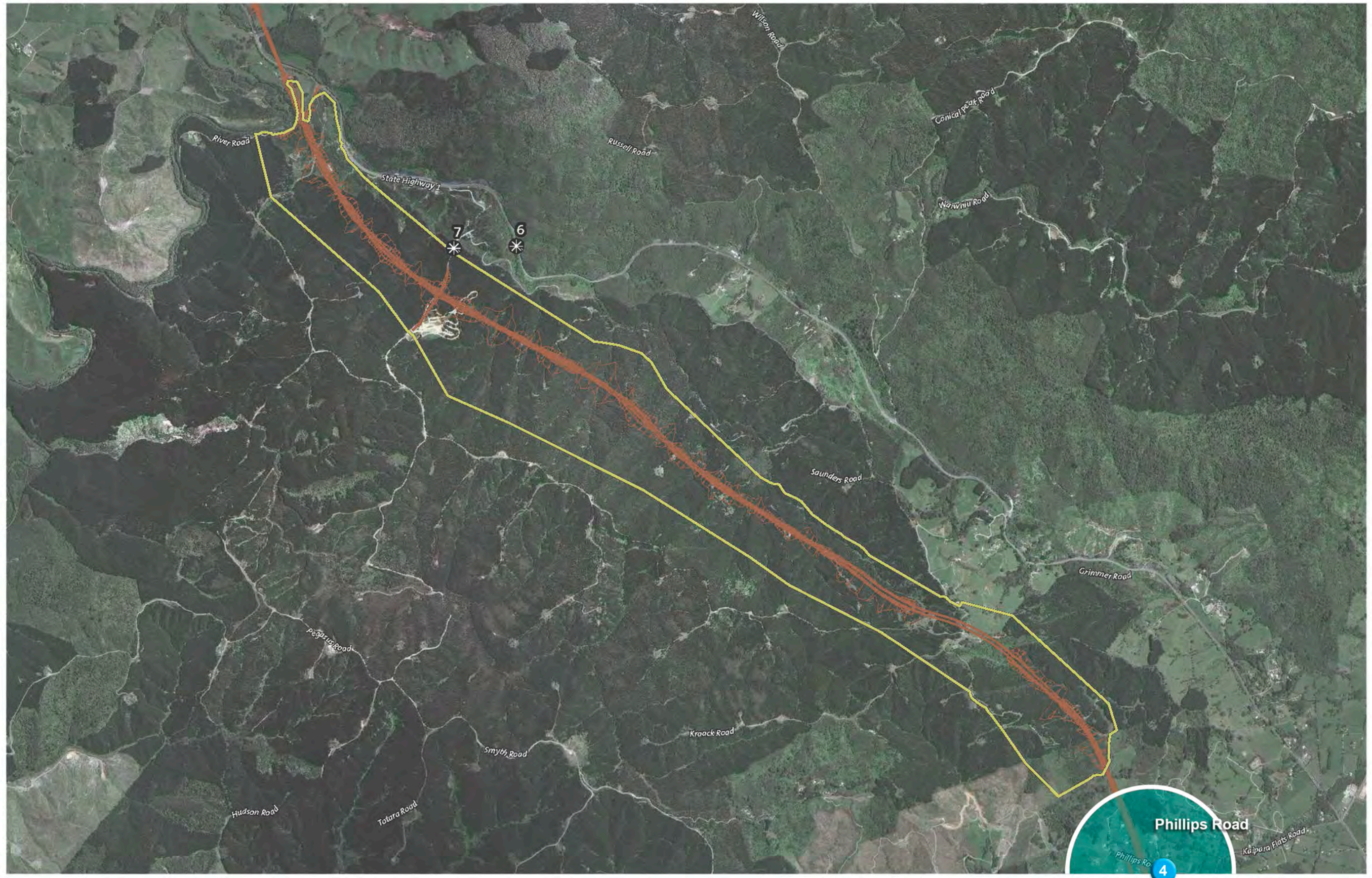


Figure 2.

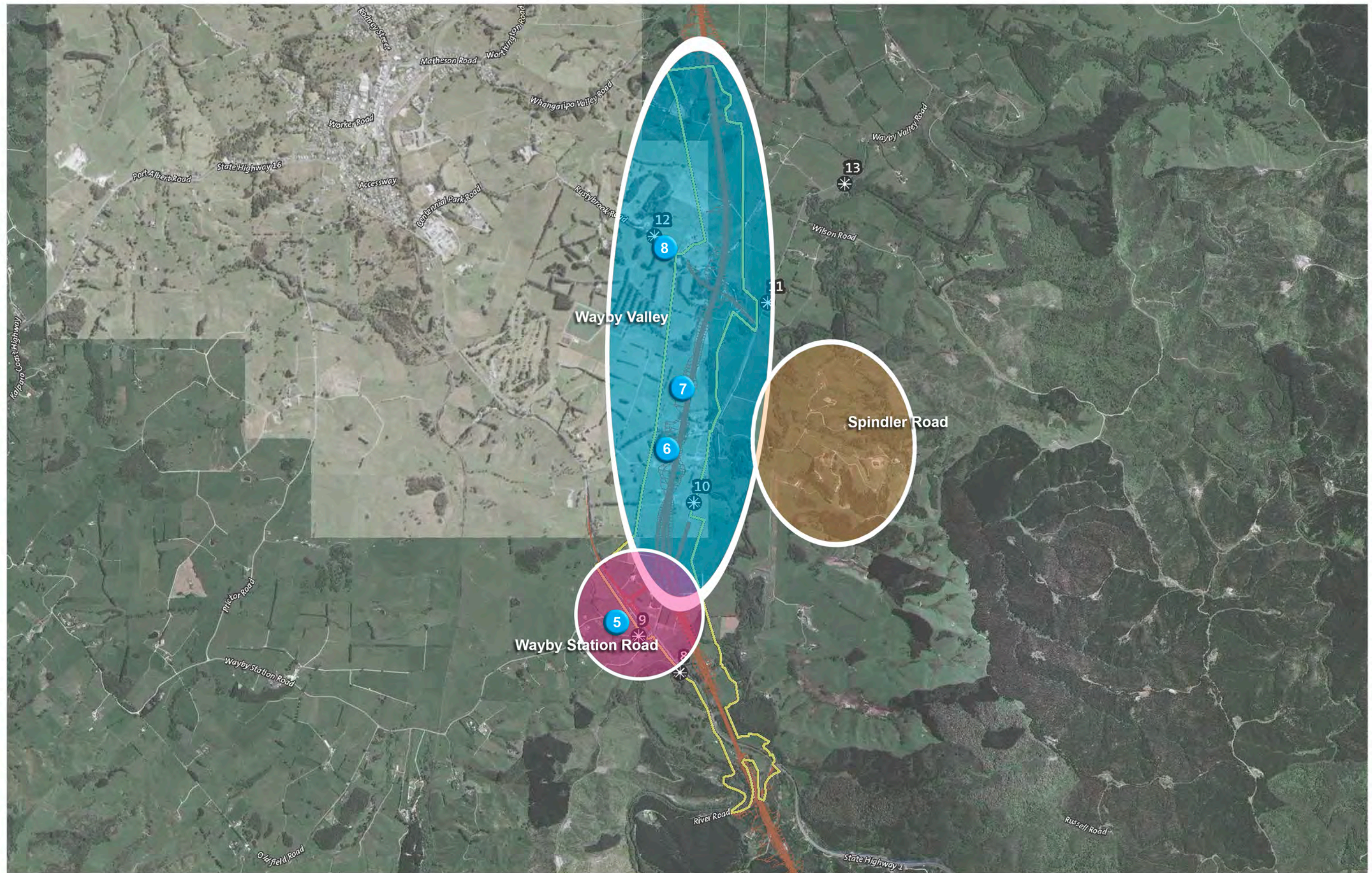


Figure 3.

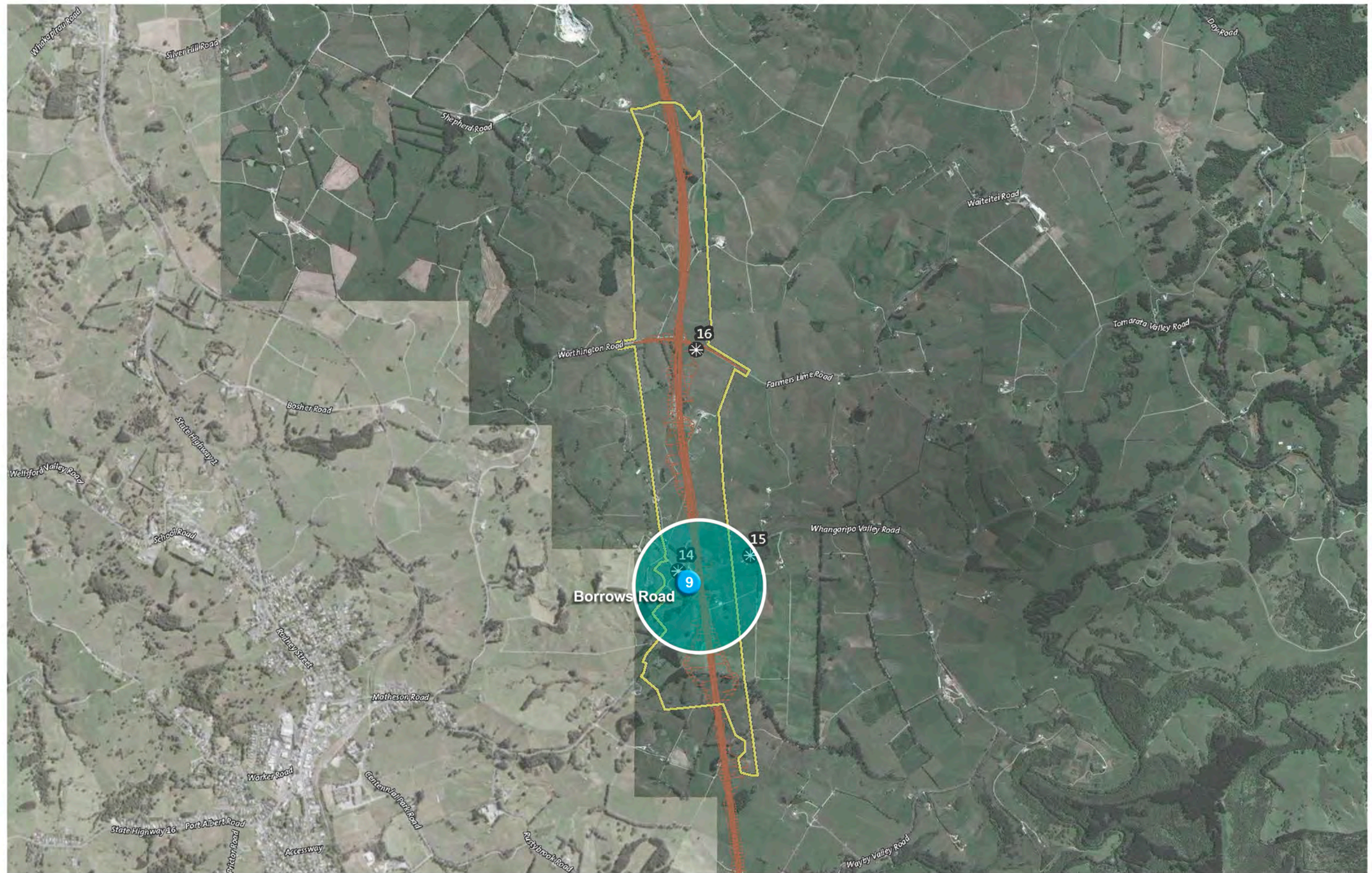


Figure 4.



Figure 5.



Figure 6.



Figure 7.



Figure 8.



Figure 9.



Figure 10.



Figure 11.



Figure 12.

Technical Memo –Specialist Unit

To:	Blair Masefield
CC:	Wayne Siu
From:	Siiri Wilkening - Acoustics
Date:	7 August 2020

1.0 APPLICATION DESCRIPTION

Application and property details

Applicant's Name:	Waka Kotahi – New Zealand Transport Agency
Application purpose description:	Notice of Requirement to amend the Unitary Plan and associated Regional Resource Consents to enable the construction, operation and maintenance for a new four lane state highway from Warkworth to Wellsford (Te Hana).
Relevant application numbers:	BUN60354951. The individual resource consent application numbers are: LUC60354952, LUS60354955, WAT60354953, WAT60355184, WAT 60356979, DIS60354954, LUC60355185, DIS60355186
Site address:	Multiple sites located between Warkworth and Te Hana.

2.0 ADEQUACY OF INFORMATION

The assessment below is based on the information submitted as part of the application. In particular, I have reviewed the following documents:

- Operational Noise and Vibration Assessment (Final Draft 3), by Jesse Ngo and Joshua Loh (Jacobs Ltd), dated July 2019
- Construction Noise and Vibration Assessment (Final Draft), by Jesse Ngo (Jacobs Ltd), dated July 2019
- Proposed Designation and Resource Consent Conditions, dated 12 May 2020
- Warkworth to Wellsford Project Outline, dated November 2018
- Proposed Designation Plan sheets 1 to 9
- Section 92 response, dated 5 August 2020

I have also attended a guided site visit with the Project team along accessible parts of the proposed alignment.

It is considered that the information submitted is sufficiently comprehensive to enable the consideration of the effects of the application on an informed basis:

- a. The level of information provides a reasonable understanding of the nature and scope of the proposed activity as it relates to the AUP(OP).
- b. The extent and scale of any adverse effects on the environment are able to be assessed, or, where there is some uncertainty, are able to be controlled by conditions.

3.0 ASSESSMENT OF EFFECTS

Construction noise and vibration

3.1 STANDARDS AND CRITERIA

The standards and guidelines considered for the assessment of construction noise and vibration are appropriate; NZS6803:1999, the AUP(OP) rules and the NZTA guide for construction noise and vibration.

I agree with the chosen criteria, namely NZS6803 for construction noise, and the NZTA guide for construction vibration. Compared with the AUP(OP), the NZTA guide sets more stringent amenity criteria for occupied buildings, while it allows less stringent criteria for unoccupied buildings, and a more appropriate framework for managing residual effects.

Vibration criteria for blasting have been provided by the applicant, referencing the NZTA guide. While the AUP(OP) contains different blasting vibration criteria, I consider the proposed criteria to be appropriate. I have recommended blast noise criteria in the conditions based on the NZTA guide. These criteria are slightly different to the AUP(OP) criteria, but I consider them to be more appropriate.

3.2 CONSTRUCTION ACTIVITIES AND NOISE LEVELS

The construction activities discussed in the report are appropriate for the project. The associated equipment numbers give a level of detail not normally available at this stage of a project, which aids the comprehensiveness of the assessment.

Table 3-6 provides typical noise levels at 10 m, and sound power levels for likely equipment. The distances given, at which the construction noise limits can be complied with (without mitigation) are conservative.

Similarly, I consider the vibration levels given in table 3-7 and the associated compliance radii are conservative. I consider that this is a reasonable approach at a time when the effects envelope of a project is assessed.

3.3 AFFECTED RECEIVERS

The report identifies affected PPFs but does not specifically identify receivers that may be affected by night-time work. This is reasonable at this stage of the project and should be addressed in the Construction Noise and Vibration Management Plan (CNVMP) and schedules required by the conditions.

The assessment notes that dwellings within 50 metres of the designation boundary may require “particular attention”, which I understand to mean that limits may be reached or exceeded, and mitigation and management will need to be implemented. I consider this to be a conservative approach as the designation is significantly larger than the potential construction works. However, this provides an envelope of effects, giving a worst-case indication.

Overall, the discussion of affected receivers is appropriate.

3.4 EFFECTS ASSESSMENT

The assessment of noise effects acknowledges that construction noise is higher than other noise sources and may cause annoyance. This may be the case particularly in areas with low ambient sound levels, as is the case for vast areas affected by this project.

The assessment goes beyond NZS6803 and discusses the potential for shift workers to be disturbed during daytime hours. Where relevant, such issues should be addressed in the CNVMP.

The discussion on construction vibration levels and effects addresses the Category A and B criteria. I consider these criteria to be appropriate.

3.5 MITIGATION

The assessment recommends that mitigation is determined and implemented through a CNVMP. This is standard practice for projects like this. The general and specific measures noted in the report are appropriate.

I would anticipate submission of a draft CNVMP with the application, to ensure that all issues have been covered satisfactorily. While details may change, the broader content should be in place.

Operational Noise and Vibration

3.6 STANDARDS AND CRITERIA

The Standards and criteria chosen in the assessment are commonly used and are appropriate for this type of project.

I consider that the combination of NZS6806 and the change in noise level result in a comprehensive assessment of the traffic noise effects. The change in noise level provides an indication of residents’ subjective experience of the Project, while the criteria of NZS6806

provide an objective assessment of traffic noise.

I agree that traffic will not generate vibration levels that would impact on PPFs, particularly given the likely separation distance from the proposed traffic lanes.

3.7 EXISTING NOISE ENVIRONMENT - MEASUREMENT

The existing noise levels have been determined through ambient noise level measurements. The locations chosen appear reasonable and represent a good range of locations in relation to the existing and future roads.

The Section 92 response clarified that the graphs in Appendix A of the operational noise report include anomalous data (e.g. data was adversely affected by unsuitable weather conditions), and should not be used to determine the existing noise levels. The values in Table 3 of the report include the adjusted survey data, excluding such time period. Therefore, the values in Table 3 are lower than those shown in Appendix A.

Based on this information, the existing noise levels at some of the PPFs appear to be lower than predicted (in Table 5) and, therefore, lower than have been used for the assessment of effects (refer 3.10 below). This discrepancy particularly affects 211 Kaipara Flats Road, where the measured and predicted existing noise levels were 24 dB and 41 dB $L_{Aeq(24h)}$ respectively. and 39 Philips Road where the measured and predicted noise levels were 28 dB and 42 dB $L_{Aeq(24h)}$ respectively (further discussed in 3.8 below).

Based on the information provided in the Section 92 response, I consider that the measured data, as adjusted in accordance with Appendix A information and provided in Table 3, is appropriate to gain an understanding of the existing noise level in the area.

3.8 COMPUTER NOISE MODELLING – VERIFICATION

The software and calculation method used are appropriate. The input data provided appears accurate and as expected for this type of project.

Based on the information provided in the Section 92 response, the model was not verified against measured noise levels. The reason given was that the survey locations are not sufficiently close to SH1 to be controlled by that noise source, and therefore the model of the existing road could not be correlated with the measured data (i.e. the modelled noise levels do not accurately reflect the actual noise level at the locations away from the road).

Given this response, I consider that the measured data should be used as the basis of assessment for locations where the modelled noise level from existing roads does not control the environment. For example, the survey locations at 211 Kaipara Flats Road and 39 Philips Road recorded significantly lower noise levels than the modelled “existing” noise level provided in Table 5 of the report. Since the measured noise levels cannot be accurately replicated in the model, the measured noise levels over several days would be the accurate noise level to base the assessment on.

The existing predicted noise levels may be appropriate to determine the existing noise level

for PPFs close to the existing SH1 or other roads in the area with reasonable traffic volumes. For the future situation, with the Project in place, the predicted noise levels can reasonably be used as the road will be the controlling noise source.

3.9 COMPUTER NOISE MODELLING – MODEL OUTPUT

The Section 92 response includes a number of corrections to the model relating to traffic volume and speed, receiver location and height. These changes result in a change in predicted noise level at most PPFs. For the majority, the changes are within ± 2 dB. However, some changes are significant, ranging from +9 dB to -9 dB. The correction of the model has resulted in a number of PPFs now being predicted to have noise level changes that are materially higher or lower than previously reported.

Overall, the corrected levels appear reasonable based on spot checks. Where noticeable changes in effects may result from the update, this should be addressed by the applicant in the hearing (e.g. for 214 and 125 Kaipara Flats Road and 177 Rustybrook Road).

3.10 IDENTIFICATION OF PPFs

The report sets out the location of PPFs. For this Project, PPFs consist only of dwellings, with no other sensitive uses identified.

There are a number of dwellings within the designation boundary that have not been assessed. While this is appropriate if these dwellings are demolished and will not be used for residential activities following the construction of the Project, if any of these dwellings are to be retained for residential use post-construction, an assessment of traffic noise effects would be required.

The section 92 response discusses this issue and notes that the dwellings are within designation, and therefore owned by the Crown. They have been assumed to be uninhabited, and have therefore not been assessed.

In my opinion, the potential future residents of such dwellings, should they be retained after the construction of the road, should be safeguarded to ensure appropriate traffic noise levels are receivers. I consider that a condition should be imposed that requires these dwellings to be assessed, and mitigation be implemented, prior to any rollback of the Designation or resale of these dwellings. I do not consider a “no complaints” covenant or similar mechanism appropriate in this instance, as this would not protect future residents from adverse noise effects that could and should be mitigated as part of this Project, should there be an intention to retain the dwellings for residential use.

I have recommended conditions that would ensure such assessment must occur at the time of construction. The expectation would be that at that time it will be known if a dwelling will be retained for residential use or if it will be demolished as part of the project. I would expect that noise levels within Category A for new roads would be the relevant design target at that time.

3.11 OPERATIONAL NOISE EFFECTS ASSESSMENT & STRUCTURAL MITIGATION

The assessment discusses both, the noise criteria category in accordance with NZS6806 and the change in noise level. The majority of PPFs noise levels will receive noise levels that remain within Category A (i.e. ≤ 57 dB $L_{Aeq(24h)}$ for new roads and ≤ 64 dB $L_{Aeq(24h)}$ for altered roads).

The change in noise level predicted is significant in some instances, with levels up to 19 decibels (based on the updated model). The report accurately describes these changes as having significant adverse effects. This may be particularly noticeable for dwellings that currently experience a very low existing noise level. The change in noise level due to the updated model, results in both noise level increases and reductions for a number of PPFs.

The mitigation options assessed, and mitigation option proposed, are appropriate for this project. The focus is on low noise road surface materials rather than barriers. It is common for roading projects in rural areas to use low noise road surface as the main mitigation option in favour of barriers to avoid adverse visual impact. Barriers are generally less practicable in rural areas due to increased cost as long barriers are needed to achieve sufficient noise level reduction, and because they are less effective because of the distance between road and PPF.

The report includes a sensitivity assessment of traffic noise levels in the event of a horizontal alignment shift within the designation. We consider this to be good practice and appropriate. However, it should be noted that a vertical alignment shift may have different effects. This can only be assessed during the detailed design.

I have recommended a condition that ensures that an updated assessment of mitigation is undertaken for the identified PPFs, at time of construction.

3.12 BUILDING MODIFICATION MITIGATION

Building modification mitigation (BMM) is proposed for three PPFs; two receiving noise levels within Category C, and one receiving noise levels within Category B and experiencing a noise level increase of more than 3 dB (i.e. a noticeable noise level increase).

A mitigation trigger of “noise level change by 3 dB” appears to be based on similar projects where it has been shown that PPFs within Category B that receive a noticeable increase in noise level, may be more affected than anticipated by NZS6806.

I note that determining the noise level change for PPFs assessed against the New Road criteria should be based on the difference between “Existing” (not “Do Nothing”) and “Project with Mitigation” scenarios. I consider it more appropriate to use the NZS6806 methodology to determine the relevant baseline level when determining if a Category B PPF should receive BMM. This is also supported by the Section 92 response which notes that the model cannot accurately predict the noise level in areas away from SH1 (as stated, the model could not be verified using the measured levels).

I consider this outcome appropriate and reasonable in this circumstance. The recommended

conditions D.29 and D.30 clearly identify that both Category C PPFs and the relevant Category B PPF shall be assessed and mitigated. I have updated the wording to reflect the above discussion.

I also agree with the amendment to NZS6806 (that is commonly used by Waka Kotahi) that BMM is investigated for all instances where the external noise level is within Category C, or within Category B with an increase of more than 3 dB, and internal noise level is predicted to be higher than 40 dB $L_{Aeq}(24h)$.

3.13 OTHER NOISE SOURCES

The report appropriately also addressed noise generation from other sources, such as bridge joints, Audio Tactile Profile (ATP) and sudden deceleration of vehicles. This is a reasonable approach which has been shown to be a useful addition to the assessment based on experience with other roading projects.

The Section 92 response notes that the tunnel ventilation system will be able to comply with any relevant night-time zone noise limits, and that the external noise level of any PPF in the vicinity would not exceed 35 dB L_{Aeq} . I consider this an appropriate noise level.

4 SUBMISSIONS

A number of submissions have been received, both on the Resource Consent and Notice of Requirement, that discuss noise and/or vibration issues. Not all submissions raising these issues are in opposition. Some are neutral or in support, but still have concerns regarding noise or vibration effects.

Some submissions are extensive and cover a wide variety of subjects. I have responded to the submissions with noise and vibration matters focusing on the more extensive submissions, addressing any residual issues also.

4.1 CONSTRUCTION NOISE AND VIBRATION

Alignment location: JS1 seeks for the alignment to be fixed in place now, rather than allowing refinement within the Designation later. The traffic noise report responds to the uncertainty about the alignment location within the designation with a sensitivity assessment, should the alignment move close to the designation boundary. This is an appropriate response.

Choice of Vibration standards: JS1 states that the AUP(OP) vibration limits are lower than those chosen by the NZTA. That is incorrect. The AUP limits are more lenient (allowing vibration of 2 mm/s PPV compared with the NZTA's 1 mm/s PPV for the management of amenity issues). The cosmetic building damage criteria (i.e. Category B of the NZTA guide) are the same as provided for by the AUP.

Reversing alarms: JS1 is concerned about reversing alarms during construction. While these alarms can cause annoyance due to being clearly audible and directional, they do not

contribute significantly to the overall noise level. However, broadband alarms should be used on site as part of a ‘best practice’ approach to avoid unnecessary annoyance.

Construction traffic on the public road: JS1 notes that no assessment of construction traffic on public roads has been undertaken. Traffic on an existing road is not subject to any noise controls and is a permitted activity in the AUP. The construction noise and vibration report discusses management of construction traffic, including recommending that haul routes are located away from PPFs, that no engine brakes are used close to PPFs and that speeds are restricted for construction traffic on the public road. These are appropriate management measures.

Construction noise assessment: JS1 seeks more clarity about predicted construction noise levels, the level of effects, and frequency and magnitude of potential exceedances. The construction noise and vibration assessment discusses indicative noise and vibration levels based on commonly used equipment. The report also correctly acknowledges that even when compliance with the relevant limits is achieved, there will likely be amenity effects on neighbouring dwellings. This is often unavoidable for large construction sites; however, effects can be reduced with appropriate onsite management and mitigation. It is also correct that at construction noise levels above 65 dB L_{Aeq} people are less likely to choose to spend time outside. Construction noise limits protect indoor amenity and assume that people will be inside and close their windows to partially alleviate effects during high noise periods. Alternatively, people would move to a quieter room or side of the house, away from construction, which will also enable opening of windows on that side.

At this stage of the project, it is not common or likely that detailed construction noise levels can be predicted as a contractor has not been appointed and equipment, staging and timing will not be known. However, the report identifies distances at which compliance with the relevant limits can be achieved. Any exceedances, and associated management, will be set out in the CNVMP. I have recommended amendments to the conditions to provide more certainty of outcome, and the certification process of Council will ensure oversight at the time when more detail is known.

Construction vibration effects: JS1 notes that vibration that is compliant with the vibration limits would still cause annoyance and potentially complaint. It questions why the vibration effects have been described by the AEE as “minor”. Vibration dissipates quickly over distance. The distance at which construction will occur (even if it was to occur immediately adjacent to the designation boundary) would be generally at distances at which compliance with the Category A (amenity) criteria will be achieved. While predicted vibration levels are an envelope screening tool, the application of the CNVMP ensures the levels are mitigated and managed in accordance with the best practicable option to minimise effects. This included timing, duration and frequency of the activity causing the effect. The AEE assessment considers the residual effects, taking into account the application of the CNVMP. Therefore, effects can reasonably be described as minor.

Vibration damage: JS1 is concerned that Category A vibration criteria “should avoid any building damage”, but that there is no discussion about building damage of Category B. The Category B criteria are taken from German Standard DIN4150-3 and are designed to avoid building damage, including cosmetic building damage such as plaster cracking. The German

Standard is one of the most conservative in the world. Therefore, compliance with the relevant vibration criteria should ensure that no building damage would occur.

Reasonable noise: JS1 quotes S16 of the RMA and states that a construction noise limit of 70 dB L_{Aeq} cannot be reasonable based on the effects (e.g. that one would not want to spend time outside). The submission also considers that “reasonable” should be the same for construction and traffic noise (i.e. 57 dB L_{Aeq}). This is not correct. The definition of “reasonable” depends on the circumstances: for construction, which is temporary (even though in case of a road this would extend over several months), the reasonable noise level would be generally higher than for ongoing (permanent) noise such as traffic on a road. Standards and guidelines make allowance for these differences. I also note that construction will not occur for the entire period in the vicinity of one house but will move along the alignment. Therefore, while the overall construction period is years, the greatest effects would be when works are close, which would be of limited duration. As discussed above, the implementation of the CNVMP will ensure that effects are kept to a reasonable level.

Conditions: JS1 seeks a number of changes to the conditions, some of which I have already recommended below in the Conditions section as I consider appropriate.

Vibration effects on services: NOR3 for Transpower and Watercare (JS4) seek to protect their assets from construction vibration. I consider that the conditions, as proposed in part, allow for such protection through the “all other buildings” provisions in condition 27. In addition, the vibration limits for underground pipes set out in DIN4150-3 could be included to take account of the Watercare pipework.

Limit construction times to exclude weekends: JS10 seek to limit construction works to Monday to Friday 6am to 6pm. The hours of works would be informed by the permitted noise rules, which provide for construction Monday to Saturday, 7.30am to 6pm, with some shoulder periods. However, it is likely that some works will need to be undertaken outside these periods (e.g. connections with the existing SH1). This means that a strict restriction of construction times to daytime weekdays is not practicable.

Construction noise effects on employees and livestock: NOR6 is concerned about construction noise effects on employees and livestock on the site. Construction noise is assessed at buildings, including farm buildings. In addition, the CNVMP will be requiring consultation with affected receivers, and that would take account of any concerns that neighbouring businesses and residents have.

Health effects from construction noise and vibration: JS9 is concerned about adverse health effects from construction noise and vibration. The dwelling is approximately 100 metres from the designation boundary. I would not expect unreasonable noise levels at the dwelling at this distance. However, I note that all standards and guidelines are based on the response of the majority of people (i.e. the “middle of the bell curve”) and may not be appropriate for those that are more or less sensitive. For such persons, other considerations outside the acoustic realm may need to be taken into consideration (e.g. on advice from health officials). This is outside my area of expertise and will likely best be solved by close engagement of the Consent Holder and the affected party.

4.2 OPERATIONAL NOISE

Measured ambient noise level discrepancy: JS1 identifies issues with the measured and reported noise levels. This has already been discussed in the S92 response to my query and is discussed in Section 3.7 above.

Calibration: JS1 identifies that the computer noise model was not verified against measured levels. This has already been discussed in the S92 response to my query and is discussed in Section 3.8.1 above.

Modelling discrepancies: JS1 identifies issues with the modelled noise levels and the differences in relation to distance, and future vs current noise levels. This has already been discussed in the S92 response to my query and is discussed in Section 3.8.1 above.

Post-project audit: JS1 is concerned that there is no post construction check of the project. There are conditions that require a post construction review of the Project, including the mitigation implemented and a model of the “as built” circumstances, which will need to show compliance with the noise criteria categories set out in the conditions.

NZS6806: JS1 is concerned that NZS6806 does not address the change in noise level (in addition to complying with the relevant noise criteria category). The operational noise report addresses the change in noise level at each PPF, without and with the Project. It describes the effects, accurately describing the noise level increase as major and significant where the noise level increase is particularly high (which is the case for some of the rural receivers where the new road will introduce a new noise source). This description would change slightly, given the amended model results, but overall remain unchanged. Where the noise level increase is significant, the resultant noise level can still be reasonable as is described in the report. I agree with this analysis.

Predicted Noise: JS1 is concerned about the predicted traffic noise level at their dwelling. The predicted noise level is at the façade of a dwelling. The predicted noise level of 55 dB L_{Aeq} was misinterpreted by the submitter and applied as an indoor noise level (“around the limit for office work”). However, the internal noise level, even with windows ajar for ventilation, would be 15 decibels lower than the external noise level, i.e. 40 dB L_{Aeq} . At night-time, the noise level would be significant lower. Such noise levels would not require windows to be closed.

Variable road noise pattern: JS1 considers that at low traffic volumes, individual vehicle passes are more noticeable and the L_{AFmax} is a more appropriate descriptor than a 24-hour noise level. It is correct that for low flow roads individual passes are more pronounced. However, the traffic volumes on this Project (more than 20,000 vehicle per day) are too high for such effect.

Conditions: JS1 seeks several changes to the conditions. While the OGPA requirement is already contained in Condition 91, I do not consider that the other conditions are necessary. Particularly, I note that the Audit condition 3 months after opening would not provide any useful information as traffic flows will not have stabilised by that time. For that reason, post-

construction checks are undertaken no earlier than 12 months following construction.

Kaipara Flats Road: JS10 requests changes to Kaipara Flats Road to reduce noise effects, such as a reduced speed limit, the use of OGPA and quiet bridge joints. The operational noise report addresses bridge joints (Section 6.3). However, it would be unusual to surface a local road such as Kaipara Flats Road with OGPA (generally, a traffic volume of more than 10,000 vehicles per day would be expected for such a treatment). A reduction in traffic speed to 80km/h would result in an imperceptible 1 decibel reduction in noise level.

Health effects from traffic noise: JS9 is concerned about adverse health effects from traffic noise. The dwelling is approximately 100 metres from the designation boundary and would be more than 200m from the state highway alignment, and the noise level from traffic is predicted to be in the low 40 dB $L_{Aeq(24h)}$. At such low noise level, I would not expect any adverse effects. As noted above, there is a perception that the submitters are more sensitive to noise than the overall population. An assessment if any further mitigation is necessary, would need to be determined by another expert (e.g. health professional) rather than the acoustic expert. I note that the submitter seeks tree planting for noise reduction. Trees are not effective in reducing noise levels, and I do not recommend such a measure.

5 CONDITIONS

I have reviewed the proposed conditions and have the following recommendations:

Urban and landscape design

CONDITION 49(B)(XI)

This condition references “*noise attenuation*”. This phrase is not used in any other part of the conditions and is not included in the definitions. Noise attenuation can be various things, but in this instance refers to noise barriers only.

I recommend changing “*noise attenuation*” to “*noise barriers*” or including “*noise attenuation*” in the definition section of the conditions.

Construction noise and vibration management

CONDITION 26

This condition does not set out what steps are to be taken if compliance is not practicable. I recommend that the loop needs to be closed by referencing Conditions 28 and 29. In addition, to simplify and provide clear guidance for assessment periods, I recommend setting the time period to 15 minutes as set out in the Waka Kotahi guidance.

I understand that blasting will be undertaken for the project. Therefore, a blasting noise level also needs to be defined in Condition 26.

I recommend amended wording as follows:

26. Unless provided for in Conditions 28 and 29, construction noise from Project Works shall, as far as practicable, comply with the following criteria in accordance with NZS6803:1999 [...]

a) *Residential receivers:*

	Time	dB L_{Aeq(15min)}	dB L_{AFmax}
Weekdays	0630-0730	55	75
	0730-1800	70	85
	1800-2000	65	80
	2000-0630	45	75
Saturdays	0630-0730	45	75
	0730-1800	70	85
	1800-2000	45	75
	2000-0630	45	75
Sundays and Public Holidays	0630-0730	45	75
	0730-1800	55	85
	1800-2000	45	75
	2000-0630	45	75

b) *Industrial and commercial receivers:*

Time	dB L_{Aeq(15min)}
0730-1800	70
1800-0730	75

Notes:

“(T)” is a representative assessment duration between 10 and 60 minutes.

- 26A. Air blast noise shall comply with a limit of 120 dB L_{Zpeak} at 1 metre from the most exposed façade of any occupied buildings.

Measurement and assessment of air blast noise shall be undertaken in accordance with AS 2187-2:2006 Explosives – Storage and use - Part 2: Use of explosives, (as it relates to air blast).

CONDITION 27

This condition does not set out what steps are to be taken if compliance is not practicable. I recommend that the loop needs to be closed by referencing Conditions 28 to 30. In response to the submissions by Watercare and Transpower, I recommend including criteria for such services, based on DIN4150-3.

I recommend the following wording changes:

27. Unless otherwise provided for in Conditions 28, 29 or 30, ~~V~~vibration from Project Works shall, as far as practicable, comply with the following criteria: [...]

27A. Vibration arising from construction activities which may affect underground pipe work shall be measured in accordance with DIN4150-3:2016 Structural vibration – Part 3: Effects of vibration on structures, and shall comply with the following vibration limits:

<u>Pipe material</u>	<u>PPV (measured on the pipe)</u>
<u>Steel (including welded pipes)</u>	<u>100 mm/s</u>
<u>Clay, concrete, reinforced concrete, pre-stressed concrete, metal (with or without flange)</u>	<u>80 mm/s</u>
<u>Masonry, plastic</u>	<u>50 mm/s</u>

CONDITION 28

This condition sets out the content required in the CNVMP. The CNVMP will be the main management measure that determines the outcomes from and responses to construction noise and vibration effects.

In my opinion, given the uncertainty around timing of Project implementation and associated uncertainty regarding the assessment input, there are several additional matters that should be addressed in the condition. These include, as a minimum, the objectives of what the CNVMP should achieve, and the content as required by the NZ Transport Agency State highway construction and maintenance noise and vibration guide. That guide is more up to date than NZS6803, contains more extensive guidance and is publicly and freely available, unlike NZS6803.

I consider that the CNVMP is not restricted to identifying how the noise and vibration limits are going to be complied with. Rather, the CNVMP should set out the BPO mitigation measures, including where compliance can be achieved, and include issues such as engagement with affected parties.

I consider that the CNVMP should be certified by Council to ensure that the Requiring Authority, through their contractor, have ensured that the BPO mitigation has been identified, engagement with affected persons will be undertaken and predicted noise and vibration levels are within relevant limits. Since the existing construction noise and vibration assessment is limited in content owing to the future construction date, such information

must be reviewed prior to construction.

I recommend the following wording:

28.

- a. Prior to Project Works commencing, the Requiring Authority shall engage a Suitably Qualified and Experienced Person to prepare a Construction Noise and Vibration Management Plan (CNVMP) to identify how conditions 26 to 27 will be met prior to Project Works commencing. The CNVMP shall be prepared by a Suitably Qualified and Experienced Person.
- b. The CNVMP shall be implemented during the construction of the Project.
- c. The Objective of the CNVMP and shall is to provide a framework for the development, identification and implementation of identify the Best Practicable Option for the management and mitigation of all construction noise and vibration effects. The CNVMP shall set out how, including where full compliance with the construction noise and vibration criteria set out in Conditions 26 to 27 cannot practicably will be achieved, to the extent practicable. To achieve this objective, the CNVMP shall be prepared in accordance with, at a minimum, include the information required by NZS 6803:1999, Annex E2, and the NZ Transport Agency's State highway construction and maintenance noise and vibration guide (version 1.1, 2019), and in addition address the process required to review and update the CNVMP. The term 'noise' in that document NZS6803:1999 shall be interpreted as 'noise and vibration'.
- d. The CNVMP shall be provided to the Council for certification no later than 20 Days prior to construction commencing.

CONDITION 29

Condition 29 deals with exceedances of noise limits or Category A (amenity) vibration limits that have not been addressed in the CNVMP. If such exceedances are identified, a schedule is to be prepared that should be provided to Council for certification.

I consider that while the intention is appropriate, the wording of the condition does not provide clear outcomes for such situation. If activities are identified where compliance cannot be achieved with the mitigation identified in the CNVMP, then the schedule would detail how to manage the effects as far as practicable, including engagement with the relevant affected parties. Schedules and their content are not discussed in NZS6803, and therefore needs to be defined in the condition.

In my opinion, schedules should be certified. This provides Council with the opportunity to give feedback and require further changes should the schedule not be sufficiently detailed. The timeframe for submission to Council should be 5 days prior to the works commencing unless there are unforeseen circumstances.

I therefore recommend amended wording as follows:

Consent: BUN60354951, LUC60354952, LUS60354955, WAT60354953, WAT60355184, WAT 60356979, DIS60354954, LUC60355185, DIS60355186

Address: Multiple sites located between Warkworth and Te Hana

29.

- a. If prior to or during Project Works noise and or vibration levels from Project Works are measured or predicted to exceed the noise criteria in condition 26 or the Category A vibration criteria in condition 27, then a Suitably Qualified and Experienced Person shall be engaged to identify, in consultation with the owners and occupiers of sites subject to the exceedance, specific Best Practicable Option measures, to manage the effects of the specific construction activity. ~~enable compliance with the criteria as far as practicable.~~ The measures shall be added as a schedule to the CNVMP and implemented by the Requiring Authority for the duration of the relevant works.*
- b. The Schedule shall as a minimum set out:*
- i. Construction activity location, start and finish dates;*
 - ii. The predicted noise and/or vibration level for all receivers where the levels are predicted or measured to exceed the applicable criteria of Conditions 26 and/or 27*
 - iii. The mitigation options that have been selected, and the options that have been discounted as being impracticable and the reasons why.*
 - iv. The proposed noise and/or vibration monitoring regime;*
 - v. The communications and engagement requirements for affected landowners and occupiers.*
 - vi. Documentation of the consultation undertaken with owners and occupiers of sites subject to the Schedule, and how consultation has and has not been taken into account.*
- c. The schedules shall and be provided to the Manager for information certification, to the greatest extent practicable, at least within five Days before the specific construction activity covered by the scope of the schedule is undertaken.*

CONDITION 30

Condition 30 deals with exceedances of the Category B vibration limits that have not been addressed in the CNVMP. Category B vibration limits ensure protection from cosmetic building damage. If such exceedances are identified, a schedule is to be prepared that should be provided to Council for certification.

The condition would also need to address the heightened vibration amenity impact for people within the buildings.

I consider that the wording would need to be tightened to ensure the contractor appropriately responds to such occurrences. I recommend the following amendments:

30.

- a. *If prior to or during Project Works vibration levels from Project Works are measured or predicted to exceed the Category B criteria in condition 27, then the relevant works shall not commence or proceed until a Suitably Qualified and Experienced Person has undertaken a building condition survey (provided the owner has agreed to such survey), and ~~monitored the vibration levels at those affected buildings and identified specific Best Practicable Option measures to manage the effects of vibration.~~*
- b. *Vibration monitoring shall be undertaken and continue throughout those works. Following completion of the activity, a building condition survey shall be undertaken to determine if any damage has occurred as a result of construction vibration, and any such damage shall be repaired by the Requiring Authority.*
- c. *The measures shall be added as a schedule to the CNVMP and implemented by the Requiring Authority for the duration of the relevant works. The Schedule shall, as a minimum, contain the information set out in condition 29(b) and the findings of the building pre-condition survey.*
- d. *The Schedules shall be and provided to the Manager for information certification, to the greatest extent practicable, at least within five Days before the specific construction activity covered by the scope of the schedule is undertaken, ~~where practicable.~~*

Operational noise management

CONDITION 89

While it is unusual not to set a design year, in this instance, given the potential long implementation date, I consider the proposed approach to determine the design year and associated traffic data appropriate.

However, the condition requires that the noise criteria categories are achieved “as far as practicable” without providing a process to rectify any potential issues should compliance not be practicable. In my opinion, unless there is a defined methodology to deal with “non-compliant” PPFs, this wording is not appropriate. It provides no certainty of outcome. Any change in noise criteria category may involve a more noticeable change in noise level. An affected owner would reasonably expect that a certain outcome will be achieved.

I recommend an additional condition that would close this loop, as set out below. The Project proposes to provide building modification mitigation for all PPFs that receive noise levels in Category C, or experience a noise level increase more than 3dB and receive noise levels in Category B. Where compliance with noise levels in Category A or B as defined in Table 2 in Condition 89 cannot be achieved, then these PPFs should be included in the consideration for Building Modification Mitigation. This would also ensure that the affected owners of such PPFs be consulted on the change. A record of such consultation should be available to Council on request.

I understand that the Project will be constructed many years in the future. I recommend setting out the predicted noise levels for each PPF in Table 2 in addition to the noise criteria

category. This will ensure the relevant information will be available for Noise Mitigation Plan in Condition 99.

As discussed in Section 3.9 above, it is unclear if some dwellings in the designation will be retained for residential purposes. This can be resolved by including a condition requiring their assessment as PPFs prior to construction. At that time, it will be known if these dwellings are to be retained, and mitigation can be designed accordingly. I have recommended a new condition 89B to address this matter.

I therefore recommend the following wording:

89. Unless provided for in Condition 89A, the Requiring Authority shall design and construct the Project to ensure that the operational State highway achieves compliance with the predicted Noise Criteria Categories identified in Table 2 at each of the identified PPFs as far as practicable adopting the Best Practicable Option. Achievement of Compliance with the Noise Criteria Categories shall be by reference to based on a traffic forecast for a high growth scenario in a design year at least 10 years after the programmed opening of the Project.

89A. Building Modification Mitigation in accordance with Conditions 92 to 98 shall be implemented for those PPFs where compliance with the identified Noise Criteria Category in Table 2 is not practicable following the implementation of the Best Practicable Option Structural Mitigation. The owners of affected PPFs shall be consulted with on the change of outcome, and a record of the consultation shall be made available to Council on request.

89B. Prior to construction commencing, the Requiring Authority shall identify any dwellings inside the designation that will be retained for residential purposes following completion of the State highway. These dwellings shall be assessed as PPFs in accordance with NZS 6806:2010, and the Best Practicable Option mitigation be included in the design and construction of the State highway. The assessment shall be available to Council on request.

CONDITION 90

Condition 90 sets out the implementation of the structural mitigation measures. I consider the wording appropriate, but recommend referencing the relevant condition that includes the Noise Mitigation Plan (given that this is the first time that this plan is mentioned in the conditions). I recommend that following amendment:

90. The Requiring Authority shall implement all Structural Mitigation or other noise mitigation identified in the Noise Mitigation Plan (Condition 99) prior to the Project becoming operational, except for the road surfaces identified in condition 91.

CONDITION 92

Condition 92 sets out the process by which PPFs should be considered for Building Modification Mitigation. I note that any PPFs associated with “new” roads do not have a “do-nothing” scenario. It is outside the scope of NZS6806.

I also note that this condition contains the phrase “detailed design Structural Mitigation”. This phrase has not been used in previous conditions and is not defined. It suggests a redesign of the proposed structural mitigation at the detailed design phase. I agree with this intention, but there is no process set out in the conditions for this redesign to occur. Such wording would likely best be placed in Condition 99, relating to the Noise Mitigation Plan. I discuss it further below.

I recommend amending the condition as follows:

92. *Prior to the start of Construction Works, a Suitably Qualified and Experienced Person shall identify:*

- a. *Category B PPFs where the predicted sound level increases by more than 3dB as a result of road-traffic noise from the operational Project (for PPFs assessed against the Altered Road criteria calculated from the NZS 6806 “do-nothing” level, and for PPFs assessed against the New Road criteria calculated from the NZS 6806 “existing” level, to the level with all detailed design Structural Mitigation); and*
- b. *Category C PPFs, following implementation of all detailed design Structural Mitigation; and*
- c. *PPFs where the Noise Criteria Category of Table 2 cannot practicably be achieved following the implementation of all detailed design Structural Mitigation.*

CONDITION 99

Condition 99 sets out the requirement for a Noise Mitigation Plan (NMP), which would include the detailed design Structural Mitigation and other noise mitigation measures. The condition references P40, which in turn requires the use of the Noise Mitigation Plan template provided by NZTA. That NMP template requires that the NOR design noise level for each PPF is set out, together with the Detailed design noise level for each PPF.

In order to enable the NMP to be used in future years, I consider that Table 2 in Condition 89 should include the predicted noise level for each PPF in addition to the noise criteria category. Otherwise, it may be difficult at the time of Project construction to obtain the relevant documentation to fulfil the requirements of Condition 99.

The NMP is required to be provided to Council prior to the Project becoming operational. However, any changes to the alignment may result in a change in outcome, with the potential for any PPF to receive higher noise levels than anticipated by the predictions. I consider that this issue can be in part alleviated by consultation required with the affected owners through Condition 94. This consultation documentation is available to Council on

request. Council should also receive the NMP for certification, as changes to the mitigation may be required, and changes to the anticipated outcomes may need to be enabled by Council at the time of construction.

I note that the condition references the current P40 document “or any subsequent version”. I consider that this is not appropriate as the content of any future P40 document is not known. It may not contain the relevant requirements that are necessary to enable certainty of outcome for the Project as it has been assessed, or may not exist at all at the time of construction. Therefore, I recommend deleting that reference as follows:

99. *Prior to the Project becoming operational, the Requiring Authority shall prepare, a Noise Mitigation Plan (NMP) in accordance with the NZ Transport Agency P40 Noise Specification 2014, ~~or any subsequent version~~ and provide it to the Manager for ~~information certification~~. The Noise Mitigation Plan shall include confirmation that consultation has been undertaken with affected property owners of any additional PPFs (Condition 89A).*

CONDITION 100

Similar to Condition 99, Condition 100 should not reference any “subsequent” version of a current document. However, I consider that providing the post-construction review “for information” only to the Council is appropriate, provided the NMP was provided for certification.

I note that the low noise road surface is required to be implemented within 12 months following opening, the same as the post-construction review (which includes a review of the low noise road surface). This may result in a post-construction review being undertaken prior to the road surface having been laid. I recommend that the post-construction review should be undertaken within 3 months of the low noise road surface having been laid.

I recommend the following changes:

100. *Within 12 months of completion of Construction Works, or within 3 months of the low noise road surface being installed (Condition 91), whichever is the later, the Requiring Authority shall prepare a post-construction review report in accordance with the NZ Transport Agency P40 Noise Specification 2014, ~~or any subsequent version~~, and provide the post-construction review report to the Manager for information.*

3 RECOMMENDATION

The assessment in this memo does not identify any reasons to withhold consent, and the aspect of the proposal considered by this memo could be granted consent, subject to recommended conditions, for the following reasons:

- Subject to the imposition of designation conditions, it is considered that the adverse construction and traffic noise and vibration effects on identified PPFs and receivers can be appropriately managed

- The uncertainty around dwellings currently within the designation that may be retained (i.e. potential PPFs not captured in Table 2 of Condition 89) can be managed through appropriate conditions
- The uncertainty around construction noise and vibration effects can be managed by the proposed conditions, and the requirement to provide a CNVMP for certification through Council

4 REVIEW

Memo reviewed by:

Craig Fitzgerald

Date:

7 August 2020

Technical Memo –Specialist Unit

To:	Wayne Siu /Blair Masefield
CC:	
From:	Gary Black, Principal Transportation Engineer
Date:	28 th August 2020

1.0 APPLICATION DESCRIPTION

Application and property details

Applicant's Name:	Waka Kotahi – New Zealand Transport Agency
Application purpose description:	Notice of Requirement to amend the Unitary Plan and associated Regional Resource Consents to enable the construction, operation and maintenance for a new four lane state highway from Warkworth to Wellsford (Te Hana).
Relevant application numbers:	BUN60354951. The individual resource consent application numbers are: LUC60354952, LUS60354955, WAT60354953, WAT60355184, WAT 60356979, DIS60354954, LUC60355185, DIS60355186
Site address:	Multiple sites located between Warkworth and Te Hana.

2.0 Qualifications and Experience

My full name is Gary Black. I am Director and Principal Transportation Engineer at T-Consult (2020) Limited and am contracted by Harrison Grierson to provide traffic and transportation consultancy services. I have worked at Harrison Grierson since January 2020.

I am a consultant to Auckland Council providing specialist input to resource consent processing on matters of traffic and transportation.

I hold the qualifications of Bachelor of Engineering with Honours in Civil Engineering from Sheffield Hallam University in the United Kingdom.

I am a Chartered Professional Engineer with Engineering New Zealand.

I have 30 years' experience as a professional traffic and transportation engineer and have lived in New Zealand since 2005. My work experience includes undertaking traffic and

transportation assessments, design and construction monitoring. I have provided technical advice to Auckland Council, Auckland Transport, developers and individuals during resource consent applications.

3.0 ADEQUACY OF INFORMATION

The assessment below is based on the information submitted as part of the application. In particular, I have reviewed the following documents:

- Warkworth to Wellsford Assessment of Effects on the Environment (AEE) dated March 2020 prepared by Waka Kotahi (NZTA).
- Warkworth to Wellsford Construction Traffic Assessment dated July 2019 prepared by Waka Kotahi (NZTA).
- Warkworth to Wellsford Operational Transport Assessment dated July 2019 prepared by Waka Kotahi (NZTA).
- Draft Conditions of Consent – Construction Traffic Management
- Warkworth to Te Hana Further Information Request (Flow Memo) dated 3rd July 2020 prepared by Flow Transportation Specialists.

It is considered that the information submitted is sufficiently comprehensive to enable the consideration of the effects of the application on an informed basis:

- a) The level of information provides a reasonable understanding of the nature and scope of the proposed activity; and,
- b) The extent and scale of any adverse effects on the environment are able to be assessed.

4.0 ASSESSMENT OF EFFECTS

Detailed below is an Assessment of Effects in relation to Traffic based on information contained within the Assessment of Environment Effects (AEE), Construction Traffic Assessment (CTA), July 2019, and Operational Traffic Assessment (OTA), July 2019.

AEE Section 5 – Construction

Construction Methodology

The construction methodology provided within the AEE is a high-level summary of the anticipated construction methodology to provide ‘a broad overview of an indicative construction methodology’. As for other large capital roading projects, NZTA seek flexibility in the final design and construction methods at the consent stage. It is acknowledged that the construction methodology will be updated later and will include significant involvement from the Contractor

at the tender stage, prior to construction and during construction. This is consistent with current practices for large NZTA capital projects and is supported from a traffic perspective.

Site Access Points and Haul Routes

There are several early construction activities relating to traffic including enabling works such as installing Site Access Points (SAP), temporary local road realignments and construction compounds.

Within the southern section, the SAP's and haul routes are shown as Kaipara Flats Road, Carran Road and Woodcocks Road. The central section shows three SAP's utilising existing Forestry Roads as haul routes, accessed off the State Highway. The northern section includes access from seven local roads to the east of the proposed alignment. The three SAP's in each of the southern, the southern and central section appear to be appropriate for construction access. The SAP's for the southern, central and northern section provides flexibility for access during construction and distributes construction traffic over a number of locations and appear to be appropriate.

The location and suitability of the SAP's can be assessed as part of the Construction Traffic Management Plan Process (CTMP).

Construction Traffic Management Plan

The procedures included within the AEE and CTA include the preparation of Construction Traffic Management Plans (CTMP) and Site Specific Traffic Management Plans (SSTMP)

The CTMP general provisions is discussed with the CTA, Section 2.2. While this is not project specific, it provides an overview of NZTA's standard processes and procedures for managing construction activities and effects. The requirements include consultation with stakeholders including NZTA and Auckland Transport as road controlling authorities. I consider that these procedures are appropriate as the CTMP review processes will be completed and reviewed by technical specialists within the field of temporary traffic management. Additionally, the CTMP will be prepared using a design and construction methodologies developed by the Contractor at tender stage, prior to construction and during construction. A CTMP has been used on the Puhoi to Warkworth (P2Wk) project.

The use of the CTMP and SSTMP is appropriate however there are specific site locations discussed later in my report that I believe require SSTMP by way of a condition.

Light Construction Traffic

The CTA includes separate assessments of light and heavy construction vehicle movements per day. The light construction vehicles such as staff and contractor personnel are anticipated to be between 3,100 to 3,580 vehicles movements per day across three construction areas. The assessment assumes that 50% of the staff reside in the Warkworth and Wellsford plus surrounding areas. Without completing a detailed assessment, I consider this assumption to be reasonable.

There is no quantitative assessment of the traffic effects specifically relating to light construction vehicles, either within the AEE or CTA. However, a qualitative assessment has been provided for within the CTA and states the following:

- The hours of construction are described differently within the CTA as *'ten hour working day'*, *'start and end of shifts (nominally 7AM to 7PM)'* or *'from sunrise to sunset'*.
- In summer, most trips from would occur before and after the existing AM and PM peak hour traffic periods, with the contractor potentially working from 7AM to 7PM.
- During winter, when daylight hours in mid-winter are between 7:30AM and 5:15PM, the work shift start time is likely to be at 7AM before the AM peak hour traffic volumes increase.
- In winter, staff are likely to leave around 5:30PM and the existing traffic data within the OTA shows the existing PM peak traffic volumes on the State highway start to reduce at around 6PM.

There is an analytical assessment relating to heavy construction traffic that shows the existing SH1 between Kaipara Flats Road and Hudson Road will be over capacity and subject to significant delays between 4PM and 6PM, midweek. To address the effects of light construction traffic, several suggestions have been offered within the CTA:

- Traffic from the south should use the P2Wk route rather than the existing SH1, thereby avoid Warkworth through traffic.
- Staff residing locally are recommended to use local roads to access the site such as Woodcocks Road and Hill Street. It should be noted that these routes pass Warkworth Primary School and Mahurangi College and the CTA proposes mitigation measures such as barrier arms at pedestrian crossing locations to aid safe pedestrian crossing.
- Preparation of Contractor Staff Travel Plan with measures such as car share, shuttle bus services from Auckland and Warkworth.

I agree with the use of the P2Wk route option and the preparation of the Contractor Staff Travel Plan and measures. The Contractor Staff Travel Plan is a common tool to manage construction related traffic used on large construction projects – the City Rail Link, as an example, has an active Travel Plan in place.

The use of the P2Wk route will provide the fastest route from Auckland, with an anticipated toll of \$2.40 for cars in each direction. With the Travel Plan supporting to use of car-pooling, the cost of the toll would be spread across the driver and passengers. Given the shared cost, along with the saving in travel time, site staff are unlikely to use the existing State highway. Again, the provision of staff shuttle bus services should help reduce the use of private passenger construction vehicles.

In my opinion, the use of Hill Street as an alternative route to site for light construction vehicle during the school drop off and pick up times increases the risk of crashes between pedestrians and vehicles and vehicle-based crashes. As identified earlier, the start and end time of the workday is estimated to be 7AM in 5:30PM in winter will be outside the school hours of 9AM to 3:00PM. I have also checked the Warkworth Primary School website, which states '*In the morning parents are asked to take their children across the SH1. A teacher oversees the SH1 crossing after school. Teachers supervise the patrolled crossing (on Hill Street) from 8:20 - 9:00am and 3:00 - 3:10pm.*' It is likely that light construction traffic and school traffic will be operating at different times of the day, with only an occasional overlap. However, I recommend that contractor's staff be directed to use Woodcocks Road between the hours of 8:00AM to 9:30AM and 2:30PM to 3:30PM instead of Hill Street. Woodcock Road is an Arterial Road, with less residential activities along the corridor. Additionally, Mahurangi College is a high school with older pupils who are more aware of the dangers of traffic.

The CTA does not assess the effects of light construction traffic north of Warkworth for the central and northern sections, as the road has less traffic and light construction vehicles will utilise the SAPs off the State highway or local road network. I agree with this for the following reasons:

- Access off the state highway for the SAPs in the central sections will be designed for heavy vehicles and will be required to meet NZTA requirements for safety and operational effects.
- Access of the local road network in the northern section will be on roads with less traffic.
- The assessment of the access routes and SAP's will be part of the CTMP process, as discussed above.
- This operation can be observed currently with the construction of the P2Wk section and the multiple SAPs along the existing SH1 between Puhoi and Warkworth operating efficiently.

Heavy Vehicle Construction Traffic

The heavy vehicle construction traffic has been assessed for imported fill and imported pavement aggregate as the CTA identifies that these will be the peak haulage periods.

I have reviewed the maximum pavement aggregate fill volumes per day of 878m³ in the southern section, 878m³ in the central section and 2,050m³ in the northern. This is a maximum 266 daily truck movements in the southern section, 266 daily truck movements in the central section and 590 daily truck movements in the northern section. The fill volume per day and maximum truck movements appear to be appropriate. As an example, in the southern section, allowing an 11m carriageway construction width (two traffic lanes plus shoulder) and 0.3m depth of material would enable approximately 260m of granular material to be laid in one day. Based on my own experience of construction activities, this would appear to be a reasonable rate of construction.

There is a possibility that the contractor may increase the productivity rate for these operations, and this should be considered within the CTMP and any subsequent revisions of the CTMP.

AEE Section 9.7 - Construction Traffic Assessment and Construction Traffic Assessment Report, July 2019.

Southern Section

The AEE states that construction is expected to start in 2030 and the 2036 transport model has been used and includes committed projects of Western Link Road, Matakana Link Road and P2Wk. To assess the construction traffic effects of the Project, the Puhoi to The Hana (P2T) traffic model has been used. The southern section on State Highway 1 near to Warkworth is subject the heaviest traffic volumes and is likely to experience traffic impact from construction vehicles. Accordingly, SIDRA traffic modelling is included within the CTA report for the following locations:

- State Highway 1 and Hudson Road Intersection; and,
- State Highway 1 and Matakana Link Road (future road intersection).

The results of the modelling identify that the existing section of State Highway 1, between Hudson Road and the P2Wk Roundabout, will be heavily congested in the PM peak hours. Additionally, the Matakana Link Road intersection will be over capacity in the PM peak period for the right-turn-out of Matakana Link Road. It should be noted that SIDRA modelling predicts this intersection to be over capacity, even without the construction traffic, and experiencing significant delay. To address this, the CTA recommends the following measures:

- Trucks from the south-eastern quarry to access the southern section of the site in an anticlockwise direction travel via Matakana Link Road, SH1, Kaipara Flats Road / P2Wk and back via Carran Road, Woodcocks Road, Falls Road and Hudson Road.
- Haulage trips should not be made during the weekday evening peak of 4pm to 6pm and ongoing monitoring should be put in place to ensure that the network continues to function during hauling.

I agree with these statements. However, I have assumed that return route would be via Woodcock Road, *Mansels Drive* (not mentioned in the CTA), Falls Road and Hudson Road. I expect this will be included as part of the CTMP, as the first section of Falls Road between Woodcock Road and Mansels Drive is not suitable for heavy vehicles. Construction traffic monitoring should be included as part of the CTMP.

Central Section

The CTA identifies that Dome Valley provides three SAP's with access at three existing Forestry Roads. The CTA states that there are no issues with capacity along this route and I agree with this statement as the theoretical link capacity along State Highway is approximately 1,600 vph in one direction.

State Highway 1 along Dome Valley has a poor safety record and NZTA are installing a wire rope median barrier as part of their Safe Roads Alliance. The project is currently at construction and should be completed late in 2021. The Dome Valley Project includes turnaround facilities at key point along the Dome Valley at the haul roads to the SAP, including a wide flush median. Heavy construction traffic will be able to use these facilities to re-join SH1, including turning right out of the Forestry Roads. This raises two concerns, one of safety and secondly, delay to existing traffic from slow moving heavy construction vehicles on the State highway.

The safety relates to heavy construction vehicles turning across two lanes of traffic travelling in northbound and southbound directions. The adverse safety effects of these movements can be mitigated to some extent through the CTMP process and SSTMP measures. An alternative would be to request trucks to turn left out of the Forestry Road and continue to the next safe turnaround facility further to the north. This would be either the turnaround bays provided as part of the Dome Valley Project, or the new roundabout that is proposed as part of the Auckland Regional Landfill project, currently at Plan Change and Resource Consent stage. Assuming that consent is achieved, the landfill is expected to be operational by 2026 to 2028. This would provide a safer outcome as trucks would negotiate a single lane of traffic in each direction at any one time. The additional two-way travel distances for heavy construction vehicles would

be 1.4km, 2.5km and 1.5km for the three Forestry Roads/SAP's (north to south).

There is a delay to other traffic as heavy construction vehicles exit and enter the traffic flow on SH1 at each SAP. A SSTMP for the three SAP's within the Dome Valley should reduce the delay to other traffic and increase safety. Based on my experience, I envisage these SSTMP would likely include a reduced temporary speed limit and localised shoulder widening. The temporary reduced speed limit would increase safety in the vicinity of SAP, while the localised shoulder widening would allow trucks to decelerate clear of the through traffic when accessing Forestry Road. When returning back to the quarry, shoulder widening on SH1 will allow trucks increase in speed within the shoulder before joining the through movement traffic. These treatments were adopted at the P2Wk SAPs and subject to internal NZTA procedures and review by the NZTA Road Safety team to ensure the treatments were safe and met with NZTA requirements.

The next available passing points will be the wide shoulder on the rise to the Dome Valley summit allowing safe passing opportunities. The CTA also states that the largest volume of hauling for the central section will be in the last two years of construction and the project alignment can accommodate the haul trucks.

In summary, the assessment of effects of construction traffic for the central section have been sufficiently addressed, providing heavy construction vehicles be required to turn left out of the SAP to minimise the safety concerns of the trucks entering the existing two-way state highway traffic flows.

Northern Section

The CTA states that SH1 north Maeneene Road and the local road network used to access the site are expected to operate at 35% of traffic capacity or less and the northern section is not expected to experience negative traffic impacts. From a traffic flow perspective, I agree with this statement.

The CTA does not provide commentary on the suitability of the local roads accessing the site to accommodate heavy construction vehicles such as one lane bridge, gravel roads, narrow roads, steep gradients or windy roads with blind corners that could have an adverse safety effect for existing road users. As identified above, seven SAP's are proposed, and I consider that the number of SAP's can be reduced to the road that are best able to safely accommodate the heavy construction vehicles. This could be reviewed as part of the CTMP and SSTMP process.

Other than this issue, the effects of construction traffic for the northern section has been sufficiently assessed and addressed in the proposed draft conditions.

AEE Section 9.14 – Operational Traffic and Operational Traffic Assessment

NZTA objectives for this Project (under RMA section 171(1)(c)) are to:

- Increase corridor access, improve route quality and safety, and improve freight movement between Warkworth and the Northland Region;
- Provide resilience in the wider State highway network;
- Improve travel time reliability between Warkworth, Wellsford and the Northland Region;
- Provide connections to and from Warkworth, Wellsford and Te Hana;
- Provide a connection at Warkworth that optimises the use of infrastructure from, and maintains the level of service provided by, the Pūhoi to Warkworth project; and
- Alleviate congestion at Wellsford by providing an alternative route for north – south through traffic.

The AEE and the supporting OTA compares of *Future Reference Case Scenario* and the *Project Scenario* for the assessment of the operational transport effects of the project. The *Future Reference Case Scenario* excludes the project but includes anticipated land use and transport changes such as P2Wk, Matakana Link Road and Western Collector. The *Project Scenario* has the same land use and transport assumptions and includes the project. The assessment compares the performance of the two scenarios in terms of the following criteria:

- Traffic volumes;
- Travel Times;
- Travel Time Reliability;
- Route Resilience;
- Safety (Crash performance);
- Route Security; and,
- Road Freight Performance.
-

I have reviewed the AEE and Operational Transport Assessment and subsequent S92 requested for further information to update the crash history, relating to the travel time saving for the project route and the travel time reliability. The criteria are further discussed below.

Traffic volumes

The traffic volumes have been addressed within the OTA and includes an assessment of

existing AADT traffic volumes and variation in daily traffic volumes by month. The OTA provides a distribution of traffic volumes over a 24-hour period for a midweek, Friday, Saturday and Sunday. The OTA also provides traffic volumes for the busier peak holiday traffic. The future traffic volumes are included within the OTA and are based on the traffic modelling completed by FLOW Transportation Specialists.

As this information is from NZTA's own data, or from traffic modelling based on the ART traffic model, I believe this has been sufficiently covered in the AEE and OTA.

Travel times.

A detailed breakdown has been provided within the OTA. A survey of existing travel times has been provided using automatic number plate recognition technology, measured over a 20.5km length of SH1 from north of Warkworth to south of Te Hana. This distance is shorter than the *Future Reference Case Scenario* length of approximately 26km. The OTA states that traffic models used *Future Reference Case Scenario* and *Project Scenario* are based on the Puhoi to Te Hana Saturn traffic model and travel times for both scenarios have been provided.

I have reviewed the travel times for 2046 for the *Future Reference Case Scenario* and *Project Scenario* and they appear appropriate for both scenarios.

Travel Time Savings

Travel time savings have been assessed within the OTA and have been clarified within the Flow Transportation Specialist Memo – Warkworth to Te Hana – Further Information Request, dated 3 July 2020.

The Flow Transportation Specialist Memo concludes that *'the results indicate that significant decreases in travel times are predicted for travellers using both the existing SH1 and the proposed new route, compared to the Future Reference Case. With the introduction of the Project, delays through Wellsford are predicted to reduce on both the main road (the existing SH1) and on the side roads, as long-distance travellers will use the Project route instead of going through Wellsford.'*

Travel times for the scenario with the Project are predicted to be consistent in both directions and during all modelled time periods, indicating that the network is predicted to operate with free-flow conditions on a neutral weekday'.

I consider this provides clarity on travel time savings resultant from the proposed project and is appropriate. This also meets the NZTA objectives of '*improved freight movement between Warkworth and the Northland Region*' due to the reduced travel time.

Travel Time Reliability

The Flow Memo concludes that *the proposed high-quality route from Warkworth to Te Hana will be operating well within capacity, with a maximum forecast flow of 950 vehicles/hour in one direction in the evening peak, on a neutral midweek day in 2046. Even if one considers a public holiday weekend, with a maximum daily flow that is, say, double that on a neutral day, the route will continue to be within capacity (with that capacity being about 3,250 vehicles/hour in each direction, given the provision of two lanes, with good geometry and gentle grades based). Clearly there could still be issues of travel time reliability in the event of serious crashes, which for example could temporarily close a carriageway, or in the event of planned roadworks. However, as noted at Section 5.5 of the Transport Assessment, the design of the Project is such that there is expected to be a significant reduction in the number of fatal or serious injury crashes. Indeed, as a comparison, we note that there have been no fatal or serious injury crashes on the Northern Gateway Toll Road over the last three years (2017 – 2019). In the event of such an unusual occurrence along the Warkworth to Te Hana route, or in the event of planned roadworks, it is likely that, in most instances, only one carriageway will be closed, and the existing SH1 will also be available to accommodate some of the displaced traffic.*

I consider travel time reliability has been sufficiently addressed and meets the objectives of '*improved freight movement between Warkworth and the Northland Region*', '*improved travel time reliability between Warkworth, Wellsford and the Northland Region*' and '*improved route quality and safety*'.

Route Resilience

The OTA provides commentary on route resilience for those travelling between Northland and Auckland. Specifically, the commentary relates to:

- The provision of an alternative route to the current SH1 that will reduce the effects of incidents such as crashes and natural events such as slips;
- The route provides an alternative route and will provide a greater level of security;
- The number and frequency of crashes along the existing State highway and the project route will reduce; and,

- With four lanes of traffic, the design of the project will allow the road to be opened sooner after a crash.

I consider the route resilience has been sufficiently covered within the OTA and meets the objectives of:

- *'increased corridor access, improve route quality and safety, and improve freight movements between Warkworth and the Northern Region';*
- *'provide resilience in the wider State highway network';* and,
- *'improve travel time reliability between Warkworth, Wellsford and the Northland Region.'*

Crash History

The Flow Memo in the S92 response concludes *the Warkworth to Te Hana section of SH1 now has a fatal/serious crash density of 0.28 per km per year, which is a "High" collective risk rating based on the Transport Agency's High Risk Rural Roads Guide (2011). This represents a significant increase in the crash density, compared with the figure of 0.17 set out in the [Operational] Transport Assessment.'*

Updated crash history indicates the necessity of providing measures to improve the safety of this section of SH1 north of Warkworth. The proposed Warkworth to Te Hana motorway will reallocate a proportion of the long-term traffic forecasted for this section of SH1 to a safer alternative route, reducing the likelihood of such frequent DSI crashes along this section of SH1.

I consider that this has been sufficiently addressed within the OTA and AEE. It also meets the objectives of *'improve route quality and safety', 'provide resilience in the wider State highway network'* and *'improve travel time reliability between Warkworth, Wellsford and the Northland Region.'*

Road Freight Performance

The OTA states *'The 2014 National Freight Demands Study (NFDS) forecasts that freight movements in the corridor are likely to grow by 68% by 2042. There may be limited potential for alternative modes to accommodate anticipated growth in freight transport demand based on the current level of investment in them. Therefore, the volumes of freight on the road are likely to continue to grow, although this report notes the intentions set out in the draft Government Policy Statement, to investigate opportunities to move more freight by rail or coastal shipping. HCVs are over represented in fatal and serious injury crashes on the corridor,*

and serious crashes may increase as a result of this growth. However, these risks may be reduced by safety improvements on existing SH 1. This relates to the Dome Valley Safety Improvements.

I agree with this assessment and conclude that Road Freight Performance has been sufficiently addressed within the OTA and AEE and meets the objective of *‘improved freight movement between Warkworth and the Northland Region’*,

5.0 RMA 171 ‘Tests’

Detailed below is the assessment for compliance under Section 171 of the RMA regarding *‘adequate consideration has been given to alternative sites, routes’* and *‘whether the work and designation are reasonably necessary for achieving the objectives’* of the project.

Assessment of Alternatives

I have reviewed the documentation within the AEE and in particular, Section 7 – Consideration of Alternatives.

Early strategic studies in 2008 identified SH1 as the preferred corridor to accommodate the predicted increase in demand on the Auckland to Whangarei strategic corridor. The alternative route option was SH16. In 2010, a list of 11 on-line and off-line routes for the Puhoi to Wellsford corridor were developed and assessed. The list of options was subsequently shortlisted to four options assessed within the Scheme Assessment Report from 2011 to 2016.

The Scheme Assessment Phase and subsequent Detailed Business Case developed the four shortlisted options and refined the routes to:

- Four alignment options south of the Hoteo River; and,
- Eight alignment options north of the Hoteo River.

Out of these, the preferred route was selected after a detailed assessment covering:

- Assessment of the options using a Multi-Criteria-Assessment; and,
- Assessment of each option for alignment with the Land Management Transport Act evaluation framework.

An analysis of the eight options for the Warkworth interchange was undertaken in November 2016. Each of the eight options were subject to the same evaluation process as the main alignment and the preferred option selected, as shown in the design. The Wellsford

Interchange was subject to the same assessment and evaluation within the Scheme Assessment Report. The Te Hana Interchange was common to all the route options and as such, no other options were developed for the Te Hana interchange.

Other options assessed were online options to improve the existing state highway to achieve an 80km/h expressway. These options provided a worse outcome than the 'do minimum' option and were not considered further.

I have read the AEE Section 7-Evaluation of Options. I have not reviewed each of the options in detail or read the Scheme Assessment Report and Detailed Business Case. In summary, for the evaluation of Section 171 of RMA, I believe that a robust assessment of the alternatives has been considered and these options have been developed in accordance with NZTA standard policies and procedures.

Project Objectives and whether the work and designation are reasonably necessary for achieving the objectives

NZTA objectives for this Project (under RMA section 171(1)(c)) are listed above, with commentary below.

'Increase corridor access, improve route quality and safety, and improve freight movement between Warkworth and the Northland Region'

The proposed route provides a continuation of the P2Wk project for the Auckland to Whangarei SH1 strategic route. The route comprises 2 lanes in each direction and will be designed to current or future design standard such as Austroads Guide to Road Design and NZTA standards and procedures. The new route will provide a safer route with reduced travel times for the movement of people and goods.

'Provide resilience in the wider State highway network;'

I have previously covered route resilience on Page 11 of my report.

'Improve travel time reliability between Warkworth, Wellsford and the Northland Region'

I have previously covered travel time reliability on Page 11 of my report.

'Provide connections to and from Warkworth, Wellsford and Te Hana'

The project route provides interchanges at Warkworth, Wellsford and Te Hana.

‘Provide a connection at Warkworth that optimises the use of infrastructure from, and maintains the level of service provided by, the Pūhoi to Warkworth project’

The project includes a connection at Warkworth and route is a continuation of the P2Wk project with a similar level of service for road users.

‘Alleviate congestion at Wellsford by providing an alternative route for north – south through traffic.’

The route bypasses Wellsford to the east and will reduce traffic through Wellsford.

In summary, I consider the route and designation are required to meet the project objectives prepared by NZTA.

6.0 SUBMISSIONS

The key themes of the submissions are addressed below in italics, with my comments in regular text. I have split this into operational and construction related effects.

Operational Effects / Issues

Warkworth Interchange Design

(Submissions Reference: JS6, NOR4, NOR7, NOR8, NOR10, NOR11, RC30)

The submissions refer to the design of the Warkworth Interchange and the amount of land required. Mr Roger Williams, on behalf of Warkworth Area Liaison Group (NOR4), has provided a comprehensive submission including the following:

‘The intersection proposed by NZTA is land-hungry and carries the motorway right through to the old State Highway north of the town effectively severing the land further to the north and east from Warkworth and preventing it from ever being part of the town’.

The Indicative Alignment is a preliminary alignment of the state highway that could be

constructed within the proposed designation boundary and has been prepared for assessment purposes. The indicative road alignment will be refined and confirmed at the detailed design stage.

The design also provides a grade separated interchanges to ensure free flowing traffic movements on the proposed State highway 1 for northbound and southbound traffic movements. The form of the interchange is considered appropriate given the hierarchy of the road network of the motorway, motorway interchange, link roads and arterial road (existing SH1). Traffic to Warkworth will be able to exit the proposed WW2W main alignment via the slip lanes, link roads and proceed to Warkworth via the new roundabout on the existing State Highway 1.

Mr Williams also offers an alternative for the east-west interchange links in the form of changing the motorway entry and exit links to an Arterial Road with four lanes of traffic for a length of approximately 1km. This also includes three new roundabouts to access the on-ramps, off-ramps and Woodcocks Road. This arterial road will likely have a posted speed limit of 50km/h.

I expect this alternative has been presented to enable the land to the north, bordered by SH1, Kaipara Flats Road and Carran Road currently zoned as Rural - Mixed Rural to be rezoned as part of the urban area of Warkworth.

This proposed alternative would require Warkworth residents and visitors to travel along 1 km of dual carriageway at 50km/h and negotiate three new roundabouts before accessing the new motorway. This will increase the travel time to and from Warkworth.

Mr Williams also provides two other alternative options the form of the interchange. Option 1 is a grade separated diamond interchange with a roundabout on Woodcocks Road for northbound off/on traffic. Option 2 is like Option 1 but removes the roundabout on Woodcock Road and increases the free flow of the movement. Both options provide a connection to Woodcock Road and reduce the land required for the interchange. I am unable to comment whether either Option 1 or Option 2 can operate safely and efficiently and provide the capacity requirements for the expected traffic. However, a motor interchange connection to Woodcocks Road would draw traffic to the west of Warkworth to access the new motorway. Woodcocks Road is an Arterial Road and is zoned as Future Urban to the west of the current developed areas. Future land use activities in the area would likely increase the traffic flows on both Option 1 and Option 2 of the alternative interchange designs.

Warkworth – Lack of Southern Interchange Design

(Submission Reference NOR4)

Mr Roger Williams, on behalf of Warkworth Area Liaison Group provided the following commentary.

'The NOR does not consider a southern connection for Warkworth. A southern intersection to Warkworth is an integral of the motorway system and must be included in the NOR application. The Designation should be modified to allow for the southern interchange.'

Mr Williams has included a southbound on-ramp to the south of Warkworth that is similar to the Supporting Growth Alliance Wider Western Link and Southern Interchange and Arterial Connection project. As this is a potential Supporting Growth Alliance Project, connecting to the Puhoi to Warkworth motorway route, I consider this to be outside the scope of the Warkworth to Te Hana project. This proposal is also outside the proposed designation boundary.

It should be noted that the Supporting Growth Alliance indicate the projects are yet to be prioritised for funding over the next 10-30 years.

Traffic Modelling

(Submission Reference NOR4)

Mr Roger Williams made the following submission.

'The Operational Transportation Assessment used for the Warkworth to Te Hana Motorway NOR has a number of serious errors in the Traffic Modelling. The Supporting Growth Alliance have acknowledged that there is a problem with the persons per household ratio that they have used for Warkworth but this has not been corrected. The growth analysis using QuickStats shows that the traffic model underestimates the resulting local traffic in the Warkworth Area by approximately 26%. The effect of the Wayby Landfill Project has not been considered. This is likely to add 260 heavy vehicle traffic movements daily each way from Auckland to the Wayby Intersection.'

I have reviewed the traffic modelling included within the OTA and conclude that it is acceptable and robust, as this includes future known land use activities. I have, in parallel to this process, considered the effect of the proposed Wayby Landfill Project (Auckland Regional Landfill) in my work as Traffic Engineer for Auckland Council for that project. The 260 heavy vehicle

movements are not anticipated to result in significant adverse effects on either the existing State highway, or this project.

Economic Analysis

(Submission Reference NOR4)

Mr Roger Williams made the following submission.

'The NOR is based on dubious economics. Both Costs and Benefits need critical appraisal. The NOR needs to be based on a viable economic case if it is to be built in the foreseeable future.'

As above, I expect that NZTA will have completed an appropriate level of assessment in accordance with NZTA standard procedures and policies. With regard to the traffic modelling, I am not an economist however my review of the traffic modelling and benefits appear to meet the requirements of Section 171 to show the work and designation are reasonably required to meet the objectives of the project.

Tolling

(Submission Reference NOR4)

Mr Roger Williams made the following submission.

'Any tolling the Warkworth to Te Hana Motorway will increase the traffic bypassing the motorway and therefore reduce the benefits of the motorway itself. The efficiency of collecting revenue by tolling is very low... For a \$1.50 toll 53% of the revenue collected is being lost in the collection process. The route should not be tolled because this is counter-productive to the case for the new route as proposed in the NOR.'

In my opinion the commercial decisions of the road operation, including tolling, are not RMA transport related effects to be considered.

(Submission Reference JS1)

Mr David Mason and Ms Dianne McCallum raised the following comments regarding the proposal for tolling the route.

'Concurrent with the notification of this proposal, the NZTA has opened public consultation on a proposal to toll both P2W and this project. The information provided with that consultation clearly expects that tolling would reduce traffic levels on this proposed road in favour of the existing SH1 and therefore increase emissions and the potential for deaths and serious injuries

overall. These are different to and therefore undermine information provided in the AEE. This AEE does not address the possibility for tolling nor its potential effects.'

I am unable to comment on the effects, or otherwise, of tolling on the AEE. I assume that the traffic modelling prepared Flow Transportation Specialist has taken this into account with the *Future Project Scenario*. Should tolling not be adopted, there would likely be an increase in traffic on the new road.

Operational Traffic Assessment – Inconsistent Predictions

(Submission Reference JS1)

'Considering these (traffic prediction growths) quotes together, a 3.5% compound growth from 14,000 over the years 2016 to 2046 results in approximately 38,000 not the 29,000 indicated. With the 14,000, 29,000 and 3.4% numbers used frequently in the AEE, there could be significant consequences. And when 2036 traffic volumes are considered, the result is 27,000 vpd. These have potential impacts upon the Operational Traffic Assessment and the Operational Noise Assessment as well as traffic assumptions and potential congestion issues during construction.'

The traffic growth predictions contained within the OTA are based on the ART traffic model and traffic modelling work by FLOW Transportation Specialists. Based on the submission I assume there has been an error in the calculation in growth percentage. A review of the capacity of the proposed project will enable the corridor to operate at 38,000 vpd.

Heavy Haulage Association

(Submission Reference RC32)

The Heavy Haulage Association support the project and have made representation with regarding to a design envelope required for the movement of oversize vehicles. Based on my experience, it is normal practice for NZTA to consult with the Heavy Haulage Association as part of the detailed design of a project and the comments raised can be addressed at that time.

Additionally, a review of the NZTA over-dimensional route maps identify that the existing SH1 in Dome Valley is an over-dimensional route and this should transfer to the new road alignment.

Construction Effects / Issues

Issues raised in submission including:

- Traffic management (JS1, JS9, JS10, JS12, NOR6, NOR9);
- Local road capacity (JS 1);
- Damage to roads (JS1, NOR9);
- Access to Site (JS10, JS9, NOR12);
- Access to and through private property (JS1);
- Road safety (JS1, JS10);
- Avoiding haulage on local roads (JS1, JS10); and,
- Road Diversions and closures (JS1)

By way of introduction, many submitters raised concerns regarding the impact of construction traffic on the local road network, particularly around Kaipara Flats Rd (incl. Phillips Rd), and Worthington Rd/ Farmers Lime Road. I have reviewed the CTA including the use of the CTMP to manage the effects of construction traffic, including traffic management, capacity and road safety. I believe this to be an appropriate overarching approach to mitigate the identified effects of construction traffic.

The submitters raised concerns around haulage on local roads. As construction materials will have to be delivered to site, the use of local road will be required and the CTA assessment identifies the SAP's and haul routes and I have assessed these above. The CTA also provides commentary that the construction traffic will likely use the project route for the movement of materials where practicable.

Construction Traffic - Location Specific Concerns

Several submitters raised the following concerns about construction effects on the local road network.

Carran Road

(Submission reference JS1 and JS10)

The NOR6 feedback stated '*Carran Road is too narrow to allow any vehicle to readily pass an oncoming a truck and trailer. These trailers (but not the towing trucks) would sometimes cross the centreline mainly on the S bends in the northern section of Carran Road (which provide very limited forward visibility)*'

I agree with the observations in this submission and believe Carran Road is not ideal for use by truck and trailer haulage construction traffic. A review of the AEE has identified that Carran

Road is proposed as a construction traffic access route travelling in an anticlockwise direction including Matakana Link Road, State Highway 1, Kaipara Flats Road, Carran Road, Woodcocks Roads, Falls Road and Hudson Road. Given that Carran Road is steep, narrow with trucks travelling downhill, I recommend a SSTMP be required by condition at Carran Road to address the safety concerns of trucks and general traffic using this narrow and steep road in a two-way direction. I would expect at construction stage to see something like single lane working with temporary traffic management such as traffic lights (or 'stop' / 'go' boards) for short-duration construction activities. For frequent construction activities, or longer durations such as the supply of pavement aggregate to the southern section, I would expect to see Carran Road locally widened to provide safe 2-way movement of existing road users and heavy construction vehicles. The local widening of Carran Road could be conditioned to address this concern.

Kaipara Flats Road and Woodcock Road – One Lane Bridge

(Submission reference JS1)

'Delays at the one-way bridge'

The one-way bridge at Kaipara Flats Road and Woodcock Road is expected to operate safely if there are low number of additional construction-related traffic, particularly light vehicles. However, based on the approximate heavy movements detailed in Section 5.3 of the CTA, I envisage that a SSTMP may be required at each one-lane bridge to ensure safe movement of traffic across the one-lane bridge. I anticipate temporary traffic management such as 'stop'/'go' boards would be provided to ensure the one lane bridge can continue to operate safely and minimise delays to both existing road users and heavy construction traffic. Traffic control with temporary 'stop'/'go' boards would allow the traffic management operatives to react to and resolve a situation if required. Temporary traffic signals would help manage the safety of traffic flows across the one lane bridge but are likely to increase delays compared to the current one lane bridge arrangement.

Kaipara Flats Road / Carran Road Intersection.

(Submission reference JS1)

'These (heavy construction) vehicles totally incapable of staying in lane at the Carran Road and Kaipara Flats Road intersection.'

The intersection has insufficient road width for the heavy construction vehicles and trucks have to cross the centreline on Carran Road to achieve a left-turn-in to Carran Road. Again, I

believe a SSTMP could be conditioned to address these concerns. At the time of construction, I would envisage temporary traffic management (e.g. 3 way stop go boards) would be provided to address short term effects. For longer term use of the intersection by heavy construction traffic, I would envisage widening the carriageway to allow truck movements to remain within the traffic lane when turning.

Kaipara Flats Road – 90 Degree Bend

(Submission reference JS1)

‘These trailers (but not the towing trucks) would sometimes cross the centreline mainly on the S bends in the northern section of Carran Road (which provide very limited forward visibility) and near the 90° bend outside 111 Kaipara Flats Road.’

The 90-degree bend at 111 Kaipara Flats Road has limited visibility and could pose a road safety hazard when heavy construction traffic utilise this section of road. As this is a specific safety concern, I believe that a SSTMP could be conditioned when heavy construction vehicles use Kaipara Flats Road as an access route at this location. I envisage at the time of construction single lane working with temporary traffic lights (or ‘stop’ / ‘go’ boards) for short-duration construction activity. For longer duration activities I would expect to see the 90-degree bend widened to accommodate the swept path of the heavy construction vehicles and for the truck and trailer to remain within the traffic lane.

Traffic Management / Work Near Road

(Submission reference JS1)

The comments on traffic management relate to the construction activities for the P2Wk project at the intersection of SH1 and Kaipara Flats Roads. This intersection is being upgraded as part of those works.

The concerns raised relate to driver visibility and height of barriers used to protect the workforce for the P2Wk project. This may also be a concern for construction works within the road reserve for this project. The height of the barriers required to protect the site staff is 1m and the driver eye is generally at 1.1m. Consequently, the driver should be able to see over the barrier. I envisage that this would be considered and address through the CTMP process and any SSTMP.

Traffic Management - Realign Carran Road

(Submission reference JS1)

'This option (closure of Woodcock Road to allow un-interrupted haulage across Woodcock Road) is untenable due to the volumes of traffic being diverted on Carran Road and the already predicted congestion in the area'

I am unable to comment on the potential traffic effects and congestion as a result of closing Woodcock Road, however the CTA states. *'Given that traffic on that part of Woodcocks Road is forecast to roughly double by 2036, the potential temporary closure of Woodcocks Road would need to be carefully managed to mitigate traffic impacts on detour routes, including Carran Road.'*

As both the submitter's concern and the statement within the CTA are subjective, without any analysis of effects, I would envisage nearer to the time of construction that the SSTMP would assess a number of traffic management options prior to construction. I envisage the options that could be assessed are:

- leaving Woodcock Road open to traffic and using temporary traffic management;
- off-peak closures with diversions, with the AM and PM remaining open to traffic;
- night time closures and diversions; or,
- or a full closure and diversion.

As for other locations in the southern area, I believe this could be addressed through a SSTMP as a condition.

Traffic Management – Realign Kaipara Flats Road

(Submission reference JS1)

The CTA states *'A detour is available (for the realignment of Kaipara Flats Road) if necessary via Carran and Woodcocks Roads and the existing SH1, but any detouring would need to be carefully managed to mitigate traffic impacts on those roads and co—ordinated with any works on these other roads so that there isn't an accumulation of effects.'*

Again, as this section within CTA is a subjective, without any analysis, I believe could be addressed through a SSTMP as a condition. The SSTMP could assess traffic management options similar to those discussed for Woodcock Road for the realignment of Carran Road.

SH1 / Kaipara Flats Road Capacity

(Submission reference JS1)

'There is no analysis of the capacity (or safety) of the SH1/ Kaipara Flats Road/Goatley Road intersection despite an analysis being done for the two intersections immediately south - Matakana Link Road and Hudson Road. During the P2W consent process this intersection was identified as an issue and a condition was put in place requiring it to be upgraded. That was when traffic levels were circa 12,000 AADT.'

The CTA (Figure 6) identifies that Kaipara Flats Road will be operating at a volume to capacity ratio of 154% in 2036 PM for the eastbound traffic flow approaching SH1. The eastbound traffic can expect significant delays due to the intersection with SH1, with some trip reassignment and diversion to Carran Road and Woodcocks Road. It should be noted that this excludes construction traffic.

The CTA does not provide any SIDRA traffic capacity analysis for SH1 and Kaipara Flats Road intersection and I agree that this is not necessary. The CTA provides haul routes for the southern section travelling in an anti-clockwise direction from Warkworth. This will mean that trucks would be turning left into Kaipara Flats Road and this configuration should not adversely affect the capacity of the intersection. I note that SH1 and Kaipara Flats Road intersection is being upgraded as part of the Puhoi to Warkworth project. In my experience, I would expect the design at the time of construction to include an auxiliary left turn lane meeting the requirement of Austroads Guide to Road Design Part 4A – Intersection at Grade. Alternatively, I would expect a wide shoulder as a minimum in which construction traffic can decelerate clear of the through traffic minimising the impact on other road users. On this basis it can be concluded that there are traffic design interventions that can be put in place through a SSTMP to appropriately manage the effect of heavy construction traffic turning left at Kaipara Flats Road.

The volume to capacity ratio for the two-way traffic flows on Kaipara Flats Road in the PM peak is at 29% and can accommodate the heavy construction vehicles completing the anti-clockwise haul route.

SH1 / Kaipara Road Visibility

(Submission reference JS1)

'Following on from the previous point, trucks turning right from SH1 into Kaipara Flats Road will queue on SH1. We believe that they will have a holding lane in which to do this (hopefully

safely). The consequence is that traffic on Kaipara Flats Road waiting to turn right onto SH1 southbound will lose visibility of oncoming southbound traffic behind the queued truck(s) meaning that they will be unable to safely turn until after the truck(s) have turned.'

The CTA does not provide any details of the number of trucks turning right into Kaipara Flats Road from State highway 1. However, the haul routes for the southern and central section imply that this right turn movement is unlikely to occur very often. To address any safety concerns associated with right turning trucks, I believe southbound heavy construction vehicles could be required to continue south to the new Puhoi to Warkworth roundabout and return in a northbound direction before turning left into Kaipara Flats Road. Again, this 1km detour to access Kaipara Flats Road for heavy construction vehicles could be conditioned to improve safety at the intersection. Light construction vehicles can continue to turn right into Kaipara Flats Road.

SH1 / Kaipara Road Safety

(Submission reference JS1)

'As discussed above we have not seen the final design for this intersection. A preliminary design showed holding bays (for traffic departing SH1) but no acceleration /deceleration lanes (for traffic entering SH1). The footprint of works currently underway suggests that there is insufficient room for acceleration and deceleration lanes in addition to holding bays.

As discussed in the AEE the lack of acceleration and deceleration lanes increases the potential for conflicts and this project will exacerbate the risk.'

As above, I have not seen the proposed design for the intersection upgrade at Kaipara Flats Road and I would expect to see a wide shoulder or auxiliary left turn lane as part of the design. If this is not included in the design a SSTMP could be conditioned to minimise the adverse effects of trucks turning left at this intersection to allow safe deceleration of heavy construction vehicles clear of SH1 northbound traffic.

Local Roads – Capacity

(Submission reference JS1)

'This map (Figure 6) shows that in the evening peak, pre-project capacity on the proposed local road haul loop is:

- *Kaipara Flats Road 157%*
- *Carran Road 69%*

- Woodcocks Road 98%
- Falls Road and Mansell Drive not stated
- Hudson Road (in two sections) 105% / 119%

where anywhere over 85% is considered congested. This is problematic - in 2036 almost the entire route is already congested without any construction traffic. And Table 4 has a quite different view in its PM columns with:

- Kaipara Flats Road 29%
- Carran Road 42%
- Woodcocks Road 33%

These percentages do not allow for the one-way bridges but regardless, it is not clear why they differ from Figure 6. Once allowing for the one-way bridges we expect that both Kaipara Flats Road and Woodcocks Roads would be congested. Clarity is required around the 2036 predicted capacities of local roads-both without the project and with the project.'

It should be noted that the flows relate to the 2036 PM peak and the recommendation within the CTA states 'Haulage trips should not be made during the weekday evening peak of 4pm to 6pm and ongoing monitoring should be put in place to ensure that the network continues to function during hauling.' This goes some way to address the concerns raised and this could be included as a condition.

With regard to the difference between Figure 6 and Table 4 within the OTA, Figure 6 are directional traffic flows – eastbound on Kaipara Flats Road (giveaway at the intersection with SH1) and westbound on Hudson Road (giveaway at the one lane bridge). The congested flows are in the opposite direction to the haul route traveling in an anticlockwise direction. Table 4 relates to two-way traffic volumes and capacities and show lower volume to capacity ratios.

It should be noted that the anticlockwise direction of the southern haul route appears to be an appropriate approach to the movement of heavy construction vehicles. At each intersection, the heavy construction vehicles will be making a left turn into or out of the side roads. At the one-lane-bridge at Kaipara Flats Road and Woodcocks Road, heavy construction vehicles will have priority over oncoming vehicles. From a traffic safety perspective, it is not unreasonable for the anti-clockwise movement on the haul route to naturally occur.

Local Road – Smoothness, Potholes and Seal Failures (Submission reference JS1)

The submitter raised concern around the smoothness of the pavement, potholes and seal

failures as a result of heavy construction traffic within the southern section haul routes. I believe a preconstruction survey and testing of the existing pavement condition should be undertaken and repeated every three months during construction to assess the pavement deterioration and maintenance requirements. I am not able to advise the extent or technical aspects of this condition survey and the work should be discussed and agreed with Auckland Transport and NZTA.

I believe that the pavement condition surveys could be conditioned, and any remedial work be at the cost of the contractor.

Project Office

(Submission reference JS1)

'The Assessment identifies that there will be many vehicle trips to and from the site office particularly at the start and end of the working day thus compounding predicted pre-project congestion in the Warkworth area (especially around Matakana Link Road/SH1 intersection) and the excess of traffic choosing to use Kaipara Flats Road and Carran Road instead.'

The OTA advises that there will be a maximum of 180 trips to the site office and approximately 1,000 trips to the southern site section. This is likely to equate to 450 to 500 one-way trips in the AM and PM peak hours, as site staff arrive and leave from work. In the summertime the arrival and departure times will likely be outside the AM and PM peak hour period. In the wintertime the arrival time will likely be at 7AM and a departure time of 5:30PM. As identified above, it is recommended that heavy construction vehicles should not operate between the hours 4PM and 6PM midweek, thereby offsetting the effects of the 5:30PM departure traffic in the wintertime. It should be noted that office-based staff are likely to work shorter hours than site-based staff and further reduce the effects of the site-based staff leaving at 5:30PM.

Construction Vehicles - Heavy and Variability in Numbers

(Submission reference JS1)

The submitter provided commentary around the variation in the number of heavy vehicles within the various reports. I have reviewed the information contained within the AEE and CTA and consider the assessment to be appropriate and the effects of sufficiently addressed as described earlier in this report.

Pedestrians and Cyclists

(Submission reference JS1)

'Section 7 identifies a number of steps suggested to provide for safety around schools and on SH1. And it assumes that because pedestrian and cycle traffic is low on the rural roads proposed to be used by the project, it doesn't consider that there is an overall increase in risk.'

- *As with most rural roads, ours have no footpath and mostly the verge is impassable.*
- *The carriage way doubles as a footpath*
- *People do walk and cycle on these roads - they always have but more so since the COVID lockdown. Occasionally people ride horses as well*
- *Their blind spots, corners and in places narrow widths leave no room for slow traffic when two vehicles approach*
- *There is no discussion around pedestrian and cyclist safety at traffic management barriers (which looking at SH1/Kaipara Flats Road and Carran Road/Woodcocks Road traffic management suggest that pedestrians and cyclists were not considered)*

I have reviewed the haul route in the southern section and there is either a narrow shoulder or no shoulder, with the berm being of poor quality for pedestrians. To assess this concern prior to construction a pedestrian, equestrian and cyclist survey could be undertaken during the summer months to ascertain the number of users along the haul route. This should include a safety assessment of the haul route and identify any safety concerns and mitigation measures to be implemented prior to use of the haul route. A SSTMP could be requested as a condition to assess and mitigate the effect on these road users.

Conditions and Changes Sought

The submitter raised several conditions sought based on their submission. I have advised where conditions could be applied at site specific locations to address the concerns raised by the submitter.

The submitter seeks that the SSTMP be submitted to the resident that are affected. I do not support this, as a lay-person would see the SSTMP which will be a technical document and I believe it would be counter productive for the project as the conditions identified above should address the safety concerns raised. The SSTMP will also be reviewed by technical specialists in this area and be reviewed by NZTA, Auckland Council and Auckland Transport. I believe that the proposals within the SSTMP should be provided as part of the ongoing project communication to the residents, such that they will be advised of construction activities

in advance of them occurring.

A condition is sought to ensure the haul route in the southern section operates in an anti-clockwise direction – I consider this condition to be appropriate.

Road Diversions and Closures

The submitter provided commentary around the road diversions and closures and requested several conditions relating to the duration of the traffic management and diversion. I consider that this should not be conditioned as the SSTMP process will evaluate these requirements on a case-by-case basis. Any application for closures and diversions will be submitted to Auckland Transport Corridor Access Team and be assessed for compliance at that time.

7.0 CONDITIONS

I have reviewed the proposed conditions and have the following additional recommended conditions based on my evaluation of the assessment of effects and issues raised in submitters' feedback:

- To minimise light construction vehicles passing Warkworth Primary school, site staff should be advised to use either SH1 northbound or southbound, or Woodcock Road to travel eastbound or westbound between the 8:00AM to 9:30AM and 2:30PM to 3:30PM. The Contractor should also consult with Mahurangi College and Warkworth Primary prior to construction and monthly for the first three months on and every two months thereafter.
- To ensure that the heavy construction traffic haul routes are clear, the southern haul route should be defined as Matakana Link Road, SH1 Northbound, Kaipara Flats Road, Carran Road, Woodcock Road, Mansels Drive, Falls Road, Hobson Road and SH1, with heavy construction vehicles travelling in a an anticlockwise direction.
- To minimise the effects on the congested SH1 section from Hudson Road and Kaipara Flats Road, heavy construction trucks should not be permitted to operate on the public road network identified as the southern haul route between the hours of 4PM and 6PM Monday to Friday.
- To minimise the adverse effects of safety on SH1 from heavy construction traffic, trucks are required to turn left out of the three Forestry Roads onto SH1 and continue northbound to the next safe turnaround facility, either the turnaround facility as part of the Dome Valley Safety Improvements, or the proposed roundabout as part of the Auckland Regional Landfill (if consented).

- To address the safety effects of heavy construction traffic travelling southbound on narrow and steep sections of Carran Road, a SSTMP should be prepared. This could include single lane working including temporary traffic management for any short duration construction activities. Prior to any long-term construction activities, Carran Road should be widened to provide safe movement of existing traffic and heavy construction vehicles.
- To address the safety effects of heavy construction traffic on the existing one lane bridges at Kaipara Flats Roads and Woodcocks Road, a SSTMP should be prepared to ensure safe movement across each one lane bridge and to minimise the delays to existing road users and heavy construction traffic.
- To address the safety effects of heavy construction traffic turning left from Kaipara Flats Road into Carran Road, a SSTMP should be prepared including the use of temporary traffic management to ensure safe movement of traffic for any short duration activities. Prior to any long-term construction activities, Carran Road should be widened at the intersection to ensure safe movement of existing traffic and ensure heavy construction vehicles remain within the turning traffic lane.
- To address the safety effects of heavy construction traffic turning and encroaching in the opposing traffic lane at the 90-degree corner near to 111 Kaipara Flats Road, a SSTMP should be prepared including the use of temporary traffic management adopted for any short duration construction activities. Prior to any long-term construction activities, Carran Road should be widened at this 90 degree corner to provide safe movement of existing traffic and heavy construction vehicles.
- To minimise the disruption to existing road users, any closure of Woodcock Road should be limited night time working only.
- To minimise the disruption to existing road users, any closure of Kaipara Flats Road should be limited night time working only.
- To reduce the adverse effects on safety of southbound heavy construction vehicles on SH1 waiting to turn right into Kaipara Flats Road, southbound heavy construction vehicles should be required to continue south the new Puhoi to Warkworth roundabout, make a U-turn and return northbound before turning left into Kaipara Flats Road.
- To minimise the delay of heavy construction traffic slowing to turn left into Kaipara Flats Road, a SSTMP should be provided. This should include options to allow safe deceleration of trucks clear of the SH1 northbound traffic.
- To ensure the continued assessment and maintenance of the haul routes, pre-construction pavement assessment should be completed one month before construction and every three months thereafter. This should include for remedial works and repairs to be completed by the Contractor. This should be completed in consultation with NZTA and Auckland Transport as road controlling authorities.

- To assess the adverse effects of heavy construction traffic on pedestrians, equestrians and cyclists, a survey of the number of users of the southern haul route should be completed during February prior to the year of construction. This should also include a safety assessment of the haul route and identify any safety concerns and mitigation measures. The mitigation measures should be implemented prior to the use of the haul route.

These recommended conditions are further explained in Section 3.0 of this report, above.

Furthermore, we recommend the following amendments to the Construction Traffic Management conditions proposed by the applicant:

- *116. A draft CTMP shall be provided to Auckland Council and Auckland Transport for comment at least 40 working days prior to start of Construction Works. If the Requiring Authority has not received any comment from either within 20 working days of providing the CTMP, the Requiring Authority may consider that Auckland Transport has no comments.*
- *120. A draft SSTMP shall be provided to Auckland Council and Auckland Transport for comment at least 20 working days prior to start of the particular construction activity requiring a SSTMP. If the Requiring Authority has not received any comment from Auckland Transport within 10 working days of providing the SSTMP, the Requiring Authority may consider that Auckland Transport has no comments.*

8.0 RECOMMENDATION

The assessment in this memo does not identify any reasons to withhold consent, and the aspect of the proposal considered by this memo could be granted consent, subject to recommended additional conditions outlined in Section 5.0 above

9.0 REVIEW

Memo reviewed by:

Date:

Historic Heritage Technical Memo – Cultural Heritage Implementation Team, Heritage Unit

To:	Wayne Siu: Planner – Plans and Places, Auckland Council
CC:	Blair Masefield: Technical Director – Planning (Lands and Survey Ltd.)
From:	Rebecca Ramsay: Specialist: Archaeology, Cultural Heritage Implementation, Heritage Unit.
Date:	12/08/2020

1.0 APPLICATION DESCRIPTION

Application and property details

Applicant's Name:	Waka Kotahi – New Zealand Transport Agency
Application purpose description:	Notice of Requirement to amend the Unitary Plan and associated Regional Resource Consents to enable the construction, operation and maintenance for a new four lane state highway from Warkworth to Wellsford (Te Hana).
Relevant application numbers:	BUN60354951. The individual resource consent application numbers are: LUC60354952, LUS60354955, WAT60354953, WAT60355184, WAT60356979, DIS60354954, LUC60355185, DIS60355186
Site address:	Multiple sites located between Warkworth and Te Hana.

2.0 ADEQUACY OF INFORMATION

2.1 The assessment below is based on the information submitted as part of the Notice of Requirement (NoR) application. In particular, I have reviewed the following documents:

- Form 18 Notice of Requirement for designation of land under s181 of the Resource Management Act 1991. From Waka Kotahi New Zealand Transport Agency to Auckland Council. 20 March 2020.

Volume 1 - Assessment of Effects on the Environment

- Assessment of Environmental Effects (AEE). *Assessment of Effects on the Environment: Warkworth to Wellsford Project*. Prepared by Waka Kotahi New Zealand Transport Agency. March 2020.

Volume 2 - Assessment Reports

- Ara Tūhono Project, Warkworth to Wellsford Section; Historic Heritage

Assessment. Prepared by Clough and Associates Limited for Waka Kotahi New Zealand Transport Agency. July 2019.

- Sections relevant to my area of expertise within the Urban and Landscaping Design Framework Planning Version. Prepared by Boffa Miskell. June 2019.

Volume 3 – Drawing Set

- Drawing set
 - General
 - Proposed Designation Boundary
 - Engineering Design Drawings
 - Road Alignment
 - Bridge Structures
 - Operational Water
 - Road Lighting
 - Environmental Specialist Drawings
 - Construction Water
 - Groundwater
 - Marine Ecology
 - Operational Noise
 - Landscape Visual Simulations
 - Ecology Sites
 - Priority Ecology Sites
 - Ecological Mitigation
 - Urban and Landscape Design Framework
- Proposed Draft Designation Conditions. Received 12 May 2020.
- S92 Response 'Part 2': *Subject: Notice of Requirement and Resource Consent Applications – response to Auckland Council's request for further information.* 3 August 2020.

2.2 It is considered that the information submitted is sufficiently comprehensive to enable the consideration of the effects of the application on an informed basis:

- a. The level of information provides a reasonable understanding of the nature and scope of the proposed activity as it relates to the Auckland Unitary Plan Operative in Part (AUP: OiP).
- b. The extent and scale of any adverse effects on the environment are able to be assessed.

2.3 I have assessed the information in these documents against the Auckland Unitary Plan Operative in Part (AUP: OiP) (updated 10 July 2020) and whether the application can be appropriately mitigated to give effect to s6(f) of the RMA.

2.4 In making its assessment, I have also considered:

- a. Auckland Council Cultural Heritage Inventory (CHI) <https://chi.net.nz/>
- b. New Zealand Archaeological Association (NZAA) ArchSite Database <http://www.archsite.org.nz/>
- c. Heritage New Zealand Pouhere Taonga Rārangī Kōrero/The List <https://www.heritage.org.nz/the-list>
- d. ICOMOS New Zealand Charter <https://icomos.org.nz/charters/>
- e. New Zealand Transport Agency Waka Kotahi, “Historic heritage impact assessment guide for state highway projects”, March 2015
- f. Other relevant sources containing historical and archaeological information.

Definitions used with this memo

- 2.5 Chapter J in the Auckland Unitary Plan Operative in part (AUP OiP) (updated 10 July 2020) defines an archaeological site as having the same meaning as in the in Heritage New Zealand Pouhere Taonga Act 2014. No interpretation of archaeological site is provided within the Resource Management Act 1991; rather historic heritage is interpreted in Part 1, Section 2¹. The interpretation of historic heritage is substantially broader than just an archaeological site and is not limited by inclusion of a *terminus ante quem* date.
- 2.6 As such, when the term ‘archaeological’ is used within this memo, it specifically refers to a site that would meet the definition of an archaeological site as provided in Chapter J in the AUP OiP (updated 10 July 2020). All other sites would fall under the Resource Management Act 1991 definition of historic heritage.
- 2.7 AUP OiP schedule IDs and Auckland Council Cultural Heritage Inventory (CHI) numbers have been used within this memo to identify historic heritage / archaeological sites in the first instance and for consistency. Where other identifiers, such as the New Zealand Archaeological Association site reference number have been used, for example within a direct quote, either AUP OiP schedule IDs or CHI numbers have been inserted in italics.

Limitations

- 2.8 This technical memo does not include an assessment of the effects of the application on built heritage. I defer to the Built Heritage Implementation (BHI) Team subject matter experts in this regard. This memo should be read in conjunction with the BHI Team assessment to gain a complete understanding of the effects of the application on totality of historic heritage.

Exclusions

- 2.9 This memo does not include an assessment of the cultural significance of the application area to mana whenua. The cultural and other values that mana whenua place on the area may differ from its historic heritage values and are determined by

¹ historic heritage— (a) means those natural and physical resources that contribute to an understanding and appreciation of New Zealand's history and cultures, deriving from any of the following qualities: (i) archaeological: (ii) architectural: (iii) cultural: (iv) historic: (v) scientific: (vi) technological; and (b) includes— (i) historic sites, structures, places, and areas; and (ii) archaeological sites; and (iii) sites of significance to Māori, including wāhi tapu; and (iv) surroundings associated with the natural and physical resources.

mana whenua. It is the applicant's responsibility to liaise with mana whenua to determine mana whenua values.

Site Visit

- 2.10 A site visit was undertaken to the project area on Tuesday 7th July and Thursday 27th July 2020.

3.0 ASSESSMENT OF EFFECTS

- 3.1 Details of the project background are provided in the AEE and supporting application material and will not be repeated here, unless when describing direct and indirect, actual and potential adverse effects on historic heritage.

Historic heritage within the application boundaries

- 3.2 This section summarises the historic heritage of the area within the Notice of Requirement application's boundaries and includes any specific sites that have been identified. The information derives from the NoR application and supporting documentation, (in particular Section 9.10 of the AEE² and Historic Heritage Assessment (HAA)) and other relevant sources listed in Section 2.
- 3.3 The HHA has identified and assessed historic heritage sites within the proposed designation boundary, including a 200m buffer to highlight additional areas of heritage potential or sensitivity³. Sites were identified primarily through background historical and archaeological research, with some supporting field survey (limited due to landowner access permissions, project scale and dense vegetation cover through the Dome Valley)⁴.
- 3.4 These sites are listed below in Table 1⁵, where those within the proposed designation boundary are highlighted in green. Since the finalisation of the HHA and through additional research by council officers, a number of additional sites have been identified; these are listed in Table 2⁶. Information on these sites were sourced from the NZAA, CHI and historic heritage assessments including HNZPT Warkworth WWII Camps Heritage Inventory Reports (June 2018), Auckland Council Historic Heritage Topic Report: Warkworth Structure Plan (December 2018) and C. Phillips Assessment of Old Cottage (R09/2063) on Phillips Road, Warkworth (2010).
- 3.5 Maps provided in Appendix 1 show the location and estimated extents (where determined) of 19 identified historic heritage sites within the proposed designation alignment and/or the wider project area.
- 3.6 The recorded sites largely represent 19th century European settlement and activity surrounding Warkworth in Streamlands and Kaipara Flats and Wayby Valley. 20th century WWII camps, built by the New Zealand Defence Force and later utilised by the American military are also clustered around Warkworth with many camps falling

² AEE 2020 p. 275-284.

³ HHA 2019 p.8-9.

⁴ HHA 2019 p. 13-16.

⁵ See also HHA 2019 p.36-37 Table 1.

⁶ Note: this is not exhaustive and additional field survey and research is required.

with the proposed designation boundary.

- 3.7 Few pre-European Māori sites are recorded within the project area. However, the HHA identifies some areas of potential which require further survey, based on topographic elements and traditional knowledge⁷. Figures 77 and 78 of the HHA highlight these areas as being to the west of Warkworth along the tributaries of the Mahurangi River, ridge lines and prominent viewpoints north of the Dome Valley surrounding Wayby, Wayby Valley, Te Hana and Maeneene, and watercourses along the Hōteo and Maeneene Rivers connecting to the Kaipara Harbour⁸. The wider distribution of recorded archaeological sites, recent discoveries of wooden artefacts immediately north of Woodcocks Road on a tributary of the Mahurangi River (CHI 22816, R09/2247) (within the Project Area) and a 1855 historic plan (SO 1150K) illustrating a Māori pathway connecting the Mahurangi and Kaipara Harbours are indicators which support the potential for the presence of currently unrecorded pre-European Māori heritage sites⁹.

Table 1: Historic Heritage Sites identified in the HHA – for location information see maps in Appendix 1.

CHI	NZAA	Site Type	Name	Accessed/ Surveyed
<i>Warkworth and Surrounding Environment</i>				
16996	-	Historic Heritage – WWII Military Camp	Dome Valley Camp M6	No
17005	-	Historic Heritage – WWII Military Camp	Carrans Road Camp H2	Yes
17006	-	Historic Heritage – WWII Military Camp	Wylies Road Camp D1, D2 and E	Yes
17007	-	Historic Heritage – WWII Military Camp	Wylies Road Camp F and G	No
19027	R09/2063	Historic Heritage – Archaeological Site	Site of Phillips Cottage	Yes
22114	R09/2064	Historic Heritage – Built and Archaeological Site	Woodthorpe Cottage	Yes
22117	R09/2224	Historic Heritage – Archaeological Site	Whitson's House and Stockyard	No
22118	R09/2225	Historic Heritage – Archaeological Site	Dome Valley School	No
22119	R09/2226	Historic Heritage – Archaeological Site	Dome Valley School Teacher Residence	No
<i>Dome Valley, Hōteo River, Wellsford and Te Hana</i>				
22116	-	Historic Heritage – Built	Armitage Woolshed	Yes

⁷ HHA 2019 p. 85-86, 90-91.

⁸ HHA 2019 p. 101-102 Figures 77 and 78.

⁹ See also Auckland Council (Brassey, R. and Walker, M). 2018. Historic Heritage Topic Report: Warkworth Structure Plan.

		and Archaeological Site		
22115	Q09/1216	Historic Heritage – Archaeological Site	Armitage House and Farm	Yes
3034	Q08/591	Historic Heritage – Built and Archaeological Site	Underwood House/The Retreat	No <i>AUP Scheduled Historic Heritage Place ID 428 (Category B, Values A, B, D, F, H)</i>

Table 2: Additional Historic Heritage Sites identified by council officers.

CHI	NZAA	Site Type	Name	Accessed/ Surveyed
16190	-	Historic Heritage – Cemetery	Wayby Cemetery	No
22113	-	Historic Heritage – Built Heritage	Phillips Cottage – Relocated Position	No
22786				
22816	R09/2247	Historic Heritage – Archaeological Site	Findspot – Wooden Artefacts	Yes (under NX2 section)
-	-	Historic Heritage – Archaeological Site	Old Coach Road/Old New North Road	No
-	-	Historic Heritage – Archaeological Site	Streamland's Residence	No

Summary of applicant's assessment of historic heritage values and effects of the proposed designation

Historic Heritage Values and Significance

- 3.8 Section 6 of the HHA provides an evaluation of historic heritage values and associated assessment of effects of the proposed designation¹⁰. Table 3¹¹ of the HHA and additional S92 information¹² sets out the assigned historic heritage values against the AUP: OiP criteria as set out in the Regional Policy Statement B5.2.2. for those identified historic heritage sites (Table 1¹³ and one additional site listed in Table 2, CHI 22113).
- 3.9 Additionally, this material is summarised in Section 9.10 of the AEE¹⁴.
- 3.10 Table 3 below summarises the applicants assigning of values.
- 3.11 However, the determination of heritage values presented in the application material

¹⁰ HHA 2019 p. 93-104 and Table 3 p. 96-98.

¹¹ HHA 2019 p. 96-98.

¹² S92 response. 3 August 2020. Attachment 5: Additional Heritage site plans for Te Hana, Wayby, Warkworth.

¹³ See also HHA 2019 p.36-37 Table 1.

¹⁴ AEE 2020 p. 275-284.

and summarised in Table 3 are predominantly based on historical background research and limited field survey (Table 1¹⁵). As a result, identified historic heritage sites and places within the proposed designation alignment may still meet the threshold for scheduling under the AUP: OiP or require further values assessments.

Table 3: Summary of Historic Heritage Values and Overall Significance from HHA, S92¹⁶ response and AEE¹⁷ documentation.

CHI	NZAA	Name	HHA ¹⁸ / S92 Summary	AEE Summary
<i>Warkworth and Surrounding Environment</i>				
16996	-	Dome Valley Camp M6	High/moderate	Low/Moderate
17005	-	Carrans Road Camp H2	High/moderate	Low/Moderate
17006	-	Wylies Road Camp D1, D2 and E	High/moderate	Low/Moderate
17007	-	Wylies Road Camp F and G	High/moderate	Low/Moderate
19027	R09/2063	Site of Phillips Cottage	Low/Moderate	Low/Moderate
22113 (19027 in S92 response)	-	Phillips Cottage – Relocated Position	Low/Moderate	-
22114	R09/2064	Woodthorpe Cottage	Moderate	Moderate
22117	R09/2224	Whitson's House and Stockyard	Low/Moderate	Low/Moderate
22118	R09/2225	Dome Valley School	Moderate	Moderate
22119	R09/2226	Dome Valley School Teacher Residence	Moderate	Moderate
<i>Dome Valley, Hōteu River, Wellsford and Te Hana</i>				
22116	-	Woolshed	Low	-
22115	Q09/1216	Armitage House and Farm	Low/moderate	-
3034	Q08/591	Underwood House/The Retreat	<i>AUP Scheduled Historic Heritage Place ID 428 (Category B, Values A, B, D, F, H)</i>	-

¹⁵ See also HHA 2019 p.36-37 Table

¹⁶ S92 Response 3 August 2020: Attachment 5.

¹⁷ AEE 2020 p.278 (Table 9-22) and p. 281.

¹⁸ HHA 2019 p. 93-98.

Historic Heritage Effects

- 3.12 Of the 12 historic heritage sites identified in the HHA, nine fall within the proposed designation boundary of which seven are within the indicative alignment¹⁹ (See Appendix 1).
- 3.13 The HHA states the below historic heritage sites²⁰ have the potential to be affected as follows²¹:

Directly affected by the indicative alignment

- a. Woodthorpe House and Surrounds - CHI 22114, R09/2064 – house and surrounding (including potential subsurface remains) destroyed.
- b. Whitson's House and Stockyards – CHI 22117, R09/2224 – any surviving subsurface remains destroyed.
- c. Dome Valley Teacher's Residence - CHI 22119, R09/2226 — any above ground structural remains and subsurface remains will be modified/destroyed
- d. Dome Valley Army Camp M6 - CHI16996 — will be modified
- e. Carran Road Army Camp H2 - CHI 17005 — will be modified
- f. Wylies Road Camp E - CHI 17006 — will be modified
- g. Wylies Rd Camp F and G - CHI 17007 — will be modified

Indirectly affected i.e. outside the indicative alignment and within the designation boundary

- h. Dome Valley School – CHI 22118, R09/2225 - possible adverse effects on any building/structural remains.
 - i. Site of Phillip's House – CHI 19027, R09/2063 - possible adverse effects through any changes to landuse.
- 3.14 The remaining identified historic heritage sites²², CHI 22116, CHI 22115 (Q09/1216) and CHI 3034 (Q08/591) are outside of the indicative alignment, but still within the proposed designation boundary. Additional activities to provide for the construction, maintenance and use of the proposed motorway may still have adverse effects on these heritage places.
- 3.15 At present, the full extent of modification on historic heritage sites cannot be confirmed until the detailed design phase.
- 3.16 There are also numerous areas for potential currently unrecorded historic heritage

¹⁹ HHA 2019 p. 91-92 (Table 2) and AEE 2020 p. 278 (Table 9-22).

²⁰ See Table 1 for HHA identified sites.

²¹ HHA 2019 p. 99.

²² See Table 1 for HHA identified sites

sites to be present within the proposed designation boundary and inductive alignment (see paragraph 3.6.).

- 3.17 The HHA also identifies the project may also have positive effects on historic heritage²³. These are associated to a raised awareness of the wider heritage landscape by the local communities in the project vicinity, which may lead to the identification and recording of additional historic heritage places.
- 3.18 Overall, the AEE concludes that the adverse effects of the proposed designation on historic heritage values will be minor²⁴.

Summary of applicant's proposed designation conditions and advice notes

- 3.19 To manage historic heritage effects NZTA have proposed the following designation conditions²⁵. *Note: in reference to paragraph 2.9 (above) conditions relating to Mana Whenua have not been included in this assessment, unless where they specifically mention historic heritage (archaeological) sites.*

Urban and Landscape Design

Urban and Landscape Design Framework

46. The Requiring Authority shall prepare the ULDF in collaboration with Mana Whenua and in consultation with:
- a. Auckland Council;
 - b. Rodney Local Board;
 - c. Auckland Transport for areas within and adjoining local roads; and
 - d. HNZPT for areas next to identified heritage sites.
49. The ULDMP(s) shall be prepared by a Suitably Qualified and Experienced Person and shall include the following details for the sector to which the plan applies:
- b. Detailed design drawings of the landscape and urban design features, including the following:
 - x. Features (such as interpretive signage) for identifying and interpreting cultural heritage, built heritage, archaeology, geological heritage and ecology.

Heritage and Archaeology

78. The Requiring Authority shall design and implement the Project Works to achieve the following Heritage Outcomes:
- a. Avoid adverse effects on heritage and archaeological sites as far as practicable;
 - b. Where avoidance of adverse effects is not practicable, minimise adverse effects on heritage and archaeological sites as far as

²³ HHA 2019 p.99.

²⁴ AEE 2020 p.284.

²⁵ Draft designation conditions – 12 May 2020.

- practicable;
- c. Record all pre-1900 heritage and archaeological sites within the Designation; and
- d. Record all post-1900 heritage sites within the Designation.

Heritage and Archaeology Management Plan

79. The Requiring Authority shall prepare a Heritage and Archaeology Management Plan (HAMP) prior to the start of Project Works, in consultation with HNZPT, Auckland Council and Mana Whenua. The purpose of the HAMP is to identify methods to be adopted to achieve the Heritage Outcomes.
80. The HAMP shall be consistent with the requirements of any Archaeological Authority granted by HNZPT for the Project and where there is any inconsistency the terms of the Authority shall prevail.
81. The HAMP shall be prepared by a Suitably Qualified and Experienced Person and shall identify:
 - a. Methods for the identification and assessment of potential heritage place and archaeological sites within the Designation to inform detailed design;
 - b. Known heritage places and archaeological sites and potential archaeological sites within the Designation;
 - c. Any pre-1900 archaeological sites for which an Archaeological Authority under the HNZPTA will be sought or has been granted;
 - d. Any post-1900 heritage sites within the Designation to be documented and recorded;
 - e. Roles, responsibilities and contact details of Project personnel, Mana Whenua representatives, and relevant agencies involved with heritage and archaeological matters including surveys, monitoring of Project Works, Accidental Discovery Protocols, and monitoring of conditions;
 - f. Specific areas to be investigated, monitored and recorded to the extent these are directly affected by Project Works;
 - g. The proposed methodology for investigating and recording post-1900 heritage sites (including buildings) that need to be demolished or relocated, including details of their condition, measures to mitigate any adverse effects and timeframe for implementing the preferred methodology, in accordance with the HNZPT guideline AGS 1A: Investigation and Recording of Buildings and Standing Structures (4 July 2014), or any subsequent version;
 - h. Methods to acknowledge cultural values identified through condition 16(f) where archaeological sites also involve Ngā Taonga Tuku Iho (treasures handed down by our ancestors) and where feasible and practicable to do so;
 - i. Methods for protecting or minimising adverse effects on heritage and archaeological sites within the Designation during Project

Works as far as practicable, (for example fencing around heritage and archaeological sites to protect them from damage during construction); and

- j. Training requirements for contractors and subcontractors on heritage and archaeological sites within the Designation, legal requirements relating to accidental discoveries, and implementing the Accidental Discovery Protocol. The training shall be undertaken under the guidance of a Suitably Qualified and Experienced Person and Mana Whenua representatives (to the extent the training relates to cultural values identified under condition 16(f) and shall include a pre-construction briefing to contractors.

Accidental discovery during construction

- 82. Prior to the start of Project Works, the Requiring Authority shall prepare an Accidental Discovery Protocol for any accidental archaeological discoveries which occur during Project Works.
- 83. The Accidental Discovery Protocol shall be consistent with the NZ Transport Agency Minimum Standard P45 Accidental Archaeological Discovery Specification, or any subsequent version.
- 84. The Accidental Discovery Protocol shall be prepared in collaboration with Mana Whenua and consultation with HNZPT and modified as necessary to reflect the site-specific Project detail. Collaboration and consultation shall be undertaken with best endeavours by all parties and concluded within 30 Days.
- 85. The Accidental Discovery Protocol shall be implemented throughout the Project Works except in circumstances where an Archaeological Authority has been granted by HNZPT for the Project in which case the accidental discovery requirements of the Archaeological Authority shall prevail.

3.20 The HHA also provides the below additional recommendations to avoid, remedy or mitigate actual or potential adverse effects on historic heritage sites and values²⁶.

- a. If the remains of Woodthorpe house (R09/2064) cannot be avoided in the final design, they must be investigated under an Authority from the HNZPT prior to construction, and the building should be recorded following the methodology provided in Appendix A.
- b. Prior to construction, the Dome Valley Teacher's residence site (R09/2226), the Dome Valley School site (R09/2225), the site of Phillips Cottage (R09/2063) and Whitson's House and Stockyard site (R09/2224) should be assessed through field survey to establish whether any built heritage remains are present above ground and identify mitigation measures that are required to be implemented to mitigate adverse effects, in accordance with the methodology outlined in the HAMP.

²⁶ HHA 2019 p. 107-108.

- c. The United States Army Camps affected by the Project should be monitored during works and any remains recorded following standard archaeological recording techniques.
 - d. Due to the presence of a number of archaeological sites or potential archaeological sites in the Warkworth area and the Te Hana hills, earthworks in these areas (including Maeneene Stream) should be monitored by an archaeologist and any remains investigated and recorded.
- 3.21 The AEE²⁷ also states that “if required an application will be made under the HNZPTA for an archaeological authority to cover the construction works prior to commencement.

4.0 SUBMISSIONS

- 4.1 Three submissions have been received on this Application which refer to historic heritage. These submissions in relation to the Notice of Requirement are summarised below.

David Mason and Dianne McCallum; 211 Kaipara Flats Road (Joint Submission 1) oppose the Notice of Requirement.

- 4.2 In relation to historic heritage David Mason and Dianne McCallum reference the “Old Coach Road” that traversed the south east boundary of 211 Kaipara Flats Road and intersects with the proposed designation²⁸. They highlight that remains of the previous road alignment are still visible along their property boundary and there is a potential that remains (artefacts) associated to the road may be present within the designation boundary. The submission states that the heritage feature and potential is not recognised in the Historic Heritage Assessment²⁹.
- 4.3 JS1 does not recommend any relief or amendments to the proposed designation conditions in relation to historic heritage matters.
- 4.4 In response to this submission, I note that the HHA does identify sections of the Old Coach Road/Old North Road through field survey and historical research³⁰. A section of Old North Road near the Hōteu River has also been mapped in the HHA³¹.
- 4.5 Sections of the Old Coach Road/Old North Road are also shown in maps in Appendix 1.
- 4.6 Any appropriate investigation and recording of the Old Coach Road/Old North Road can be managed through the proposed designation conditions as provided below in Appendix 2.

²⁷ AEE 2020 p.113.

²⁸ JS1 p. 21.

²⁹ JS1 p. 21.

³⁰ HHA 2019 p.44-48, 73-83.

³¹ HHA 2019 p. 78 Figure 59. See also Appendix 1.

Heritage New Zealand Pouhere Taonga (Notice of Requirement Submission 14) supports the Notice of Requirement with amendments.

- 4.7 The main reasons for Heritage New Zealand Pouhere Taonga (HNZPT) position are summarised below³²:
- That minor amendments to the proposed draft designation conditions are made to provide clarity, successful implementation, and compliance between archaeological matters pursuant to the HNZPT Act (2014) and historic heritage matters pursuant to the RMA (1991).
 - That additional research and recently recorded archaeological and historic heritage sites are taken into consideration in an updated Historic Heritage Assessment.
 - That provision is made for historic heritage matters to be addressed within the proposed draft designation conditions to ensure the proposed heritage outcomes are achieved.
 - That broader mitigation is considered for historic heritage sites and places to enable increased public awareness and amenity, through site interpretation, donation of artefacts as appropriate to a suitable repository, and collation and publication of heritage stories.
 - That conditions allowing mana whenua to exercise kaitiaki are supported.
- 4.8 Heritage New Zealand Pouhere Taonga seeks relief regarding historic heritage through the amendment and insertion of two designation conditions in Appendix A of their submission³³.
- 4.9 I generally concur with the proposed condition amendments and intent of new condition 81(k) and note that these suggested changes have been reflected in the recommended conditions proposed by myself and Ms Caddigan (Auckland Council, Built Heritage Specialist) in Section 6 and Appendix 2 below.

Gena Moses-Te Kani (Hōkai Nuku) (Resource Consent Submission 29) supports the Notice of Requirement in whole or part.

- 4.10 Gena Moses-Te Kani on behalf of Hōkai Nuku provides a Cultural Effects Assessment (CEA) and associated submission on the NOR and RC applications³⁴.
- 4.11 While this memo does not address cultural values, elements of the submission directly relate to historic heritage, specifically archaeological matters, and proposed heritage conditions. These matters and associated recommendations are summarised below.
- 4.12 The CEA outlines the Hōkai Nuku cultural footprint³⁵, of which historic heritage

³² NORS 14 p.2-3.

³³ NORS 14 Appendix A p. 4-6.

³⁴ RCS 29.

³⁵ CEA 16 March 2020,p,18-28.

- (archaeological) sites and places are one element which contribute to the wider footprint.
- 4.13 The CEA references recorded historic heritage sites and areas of additional heritage potential within and surrounding the proposed designation boundaries. However, the CEA notes that there is a lack of research and field work assessment currently completed to fully assess effects and give regard to the cultural footprint³⁶.
- 4.14 To address this concern:
- Hōkai Nuku requests a proactive approach to the identification of unrecorded sites... through the completion of an appropriate predictive modelling project, followed by field investigations prior to work commencing in any area with a medium to high likelihood of pre-European Māori occupation.*³⁷
- 4.15 In addition, Hōkai Nuku requests that they are actively engaged with and participants in the planning and implementation of future field work within the project area and collaborators in the development of management plans that give effect to their kaitiakitanga aspirations, obligations and statutory rights³⁸. This also includes that the relevant management plans (i.e. Heritage and Archaeology Management Plan (HAMP)³⁹) consider the Cultural Indicators Report.
- 4.16 The RCS 29 lists the following recommendations to seeks relief regarding matters raised in their submission⁴⁰:
- 5.7 Add to Designation Condition 16 and Resource Consent Condition 9 to require the stipulated plans to take into account the whole Cultural Indicators Report when being prepared.
 - 6.10 Amend Designation Condition 79 Heritage and Archaeological Management Plan (HAMP) to include Hōkai Nuku Iwi and Hapū as collaborators.
 - 9.2 Support Designation Conditions 82-84 [Accidental Discovery Protocols].
 - 12.2 Hōkai Nuku and Waka Kotahi to continue to work together to gather information about potential unrecorded burial sites. This information will be used to help decide the final alignment.
- 4.17 The CEA includes the additional recommendations in relation to further identification and management of historic heritage (archaeological) sites and places⁴¹.
- 4.18 In addressing the submitters comments, I agree that a precautionary approach should be taken in regard to the historic heritage (including archaeological) potential within the proposed designation until further assessment and field work is undertaken. I also support the further engagement of Hōkai Nuku and consideration of the Cultural Indicators Report in the development of the proposed Heritage and

³⁶ CEA 16 March 2020,p,18-28 and RCS 29 page. 4-5

³⁷ CEA 16 March 2020 p.34 (Section 4.1).

³⁸ CEA 16 March 2020 p.34.

³⁹ Draft designation conditions – 12 May 2020. Condition #79-81.

⁴⁰ CEA 16 March 2020 and RCS 29 p. 5-13.

⁴¹ 41 CEA 16 March 2020,p,18-28 and 37-41.

Archaeology Management Plan (HAMP).

- 4.19 I concur with the proposed amendments and additions to the proposed draft designation conditions (paragraph 4.16) and note that the proposed Heritage and Archaeology Management Plan (HAMP) conditions⁴² will give regard to the additional recommendations provided in the CEA referenced in paragraph 4.17.

5.0 CULTURAL HERITAGE IMPLEMENTATION TEAM'S ASSESSMENT

- 5.1 This section sets out Auckland Council's Cultural Heritage Implementation Team's assessment of the impact of the proposed designation, as described in the submitted documents, against the provisions in the Auckland Unitary Plan Operative in Part (updated 10 July 2020) and whether the application can be appropriately mitigated to give effect to s6(f) of the RMA.
- 5.2 While I generally concur with the conclusions and recommendations proposed in the HHA; a final determination of effects on historic heritage is still reliant on detailed design, additional research and field work.
- 5.3 As such, it is important that the proposed designation conditions are developed considering the constraints of the Historic Heritage Assessment and work carried out so far. Around this, I have four points where my opinion differs from the applicants, requiring further clarification or amendment to the proposed designation conditions. These are outlined below:

Definitions

- 5.4 The RMA provides a statutory definition of historic heritage and it is this definition that needs to be used when determining the effects of a proposal for consenting/NOR purposes. The NZTA, through the HHA has not subscribed to this statutory definition of historic heritage; rather providing their own definition as "a site that is not identified as an archaeological site, but which has heritage significance". Further, the definition used for this project is inconsistent with NZTA's own guidance for historic heritage impact assessments⁴³.
- 5.5 This deviation from statutory definitions may omit the identification and assessment of historic heritage sites and places within the proposed designation boundary. For example, built heritage elements which are being addressed by Ms Caddigan (Auckland Council, Built Heritage Specialist).
- 5.6 Additionally, disagree with the S92 response that states this definition is a result of negotiations between Auckland Council Heritage Unit and Heritage New Zealand Pouhere Taonga. It is common practice to refer only to the statutory definitions for both historic heritage and pre-1900 archaeology, and I have clarified these matters in paragraphs 2.5-2.7 above. For consistency, many of the condition amendments reflect this position.

⁴² Draft designation conditions – 12 May 2020. Condition #79-81.

⁴³ NZTA March 2015 p.8-11.

Further field survey and assessment

- 5.7 As highlighted in paragraphs 3.3 and 3.10 (above), the assessment of historic heritage within and surrounding the proposed designation boundaries is based on historical and archaeological research with limited field survey. As a result, most of the project area was not able to be systematically surveyed due to the lack of landowner approvals, project scale and dense vegetation cover through the Dome Valley)⁴⁴.
- 5.8 This current lack of field survey and assessment is also raised in Resource Consent Submission 29 from Gena Moses-Te Kani on behalf of Hōkai Nuku
- 5.9 I understand that additional field survey and assessment will be completed once further land is acquired by the NZTA and closer to the time of detailed design. While the draft proposed designation conditions reference identification and assessment of historic heritage sites in the preparation of the HAMP and detailed design, further provisions regarding timeframes and any subsequent reporting should be included. These recommendations are to provide certainty around deliverables and ensure that the most up to date and complete information is relied upon for the preparation of management plans.
- 5.10 Additionally, it is understood that further heritage sites identified by council officers (see Table 2) not covered in the S92 response⁴⁵, will be subsequently addressed in future assessment to inform detailed design and the preparation of the HAMP.
- 5.11 These additional sites also speak to further heritage potential and wider settlement within the proposed designation boundaries.
- 5.12 Recommended amendments to the draft proposed designation conditions to give effect to this matter are provided in Appendix 2.

Significance and values

- 5.13 The HHA and S92 response assesses the identified heritage sites within the designation boundary against the RPS Section B5.2.2 of the AUP: OiP. These values have been summarised in Table 3.
- 5.14 However, the determination of heritage values at this stage is predominantly based on historical background research and limited field survey (Table 1⁴⁶). As a result, identified historic heritage sites and places within the proposed designation alignment may still meet the threshold for scheduling under the AUP: OiP or require further values assessments.
- 5.15 In addition, further research undertaken by HNZPT and Auckland Council⁴⁷ into the WWII camps in the Warkworth and wider area, indicate they may have higher values than presently evaluated in the application material and meet the threshold for scheduling as a group/collective of sites.
- 5.16 Therefore, it is expected that values and associated assessment of effects is refined

⁴⁴ HHA 2019 p. 13-16.

⁴⁵ S92 Response 3 August 2020

⁴⁶ See also HHA 2019 p.36-37 Table

⁴⁷ HNZPT Warkworth WWII Camps Heritage Inventory Reports (June 2018) and Auckland Council Historic Heritage Topic Report: Warkworth Structure Plan (December 2018).

following additional field work and assessment, which includes additional research completed between present and detailed design. Further, terminology with the RPS Section B5.2.2 of the AUP: OiP (e.g. outstanding and considerable) should be used when classifying historic heritage places.

- 5.17 Recommended amendments to the draft proposed designation conditions to give effect to this matter are provided in Appendix 2.

Effects and mitigation

- 5.18 While further survey and evaluation is required to evaluate historic heritage values and detailed design to determine overall effects of the project on historic heritage, this is most appropriately managed through the development and implementation of a Historic Heritage Management Plan.
- 5.19 A Historic Heritage Management Plan (HHMP) is an effects-based document. The HHMP identifies direct and indirect effects of the development on historic heritage sites and how these are appropriately managed through avoidance, remediation and/or mitigation.
- 5.20 The management plan approach has been proposed by NZTA and as per comments in paragraphs 5.4-5.6, terminology has been updated to reflect statutory definitions.
- 5.21 Further recommended amendments and inclusion of conditions to the proposed draft designation conditions are provided to ensure:
- The document is comprehensive in the identification and assessment of effects of the proposal on historic heritage sites and values. This includes additional field survey, assessment and review of heritage reports and databases.
 - That definitions and terminology are consistent with RMA Part 1, Section 2.
 - That where relevant conditions and management plans cross reference and support each other. i.e. through the identification and interpretation of heritage features through the Urban and Landscape Design Framework and Historic Heritage Management Plan.
 - That the Historic Heritage Management Plan identifies indirect and direct adverse effects on historic heritage sites and appropriate methods to avoid, remedy and mitigate them.
 - That additional reporting requirements are included, particularly around notification of finds or other relevant heritage matters through enabling, construction and post construction works.
 - That positive heritage outcomes are achieved.
- 5.22 Finally, while I support HNZPT's position to provide and ensure clarity, successful implementation, and compliance of conditions in regards to archaeological matters pursuant to the HNZPT Act (2014) and historic heritage matters pursuant to the RMA (1991), I do not support the proposed draft designation condition 80.
- 5.23 The rationale behind a Historic Heritage Management Plan (HHMP) is to ensure that any management plan is complementary to the requirements of the HNZPT Act

(2014) and authority requirements, and one should not prevail over the other.

- 5.24 In addition, the documents requested by HNZPT through an Authority process relate, primarily, to the controlled intrusive archaeological investigations (modification / destruction) of archaeological sites as defined under the HNZPT Act (2014), compared to the effects-based management plan as requested by Auckland Council. As such, it is the Auckland Council Heritage Unit's opinion that the documents requested by both organisations are not repetitive and serve separate, although complimentary purposes under different statutory processes.
- 5.25 This approach is undertaken across similar infrastructure projects and operate effectively from a compliance perspective under both a HHMP and HNZPT Archaeological Authority.
- 5.26 Recommended amendments to the draft proposed designation conditions to give effect to these matters are provided in Appendix 2.

6.0 CONDITIONS

- 6.1 I have reviewed the proposed designation conditions and have provided recommended amendments and reasoning in Appendix 2. The reasoning for suggested changes is also to be read with the Cultural Heritage Implementation Team's Assessment in Section 5.

7.0 RECOMMENDATION

- 7.1 The assessment in this memo does not identify any reasons to withhold consent, and the aspect of the proposal considered by this memo could be granted consent, subject to recommended conditions, for the following reasons:
- Subject to the imposition of consent conditions, it is considered that the adverse effects on historic heritage to be minor.

8.0 REVIEW

Memo prepared by:



Rebecca Ramsay

Specialist: Archaeology, Cultural Heritage Implementation Team, Heritage Unit

Date: 12/08/2020

Memo and technical review by:

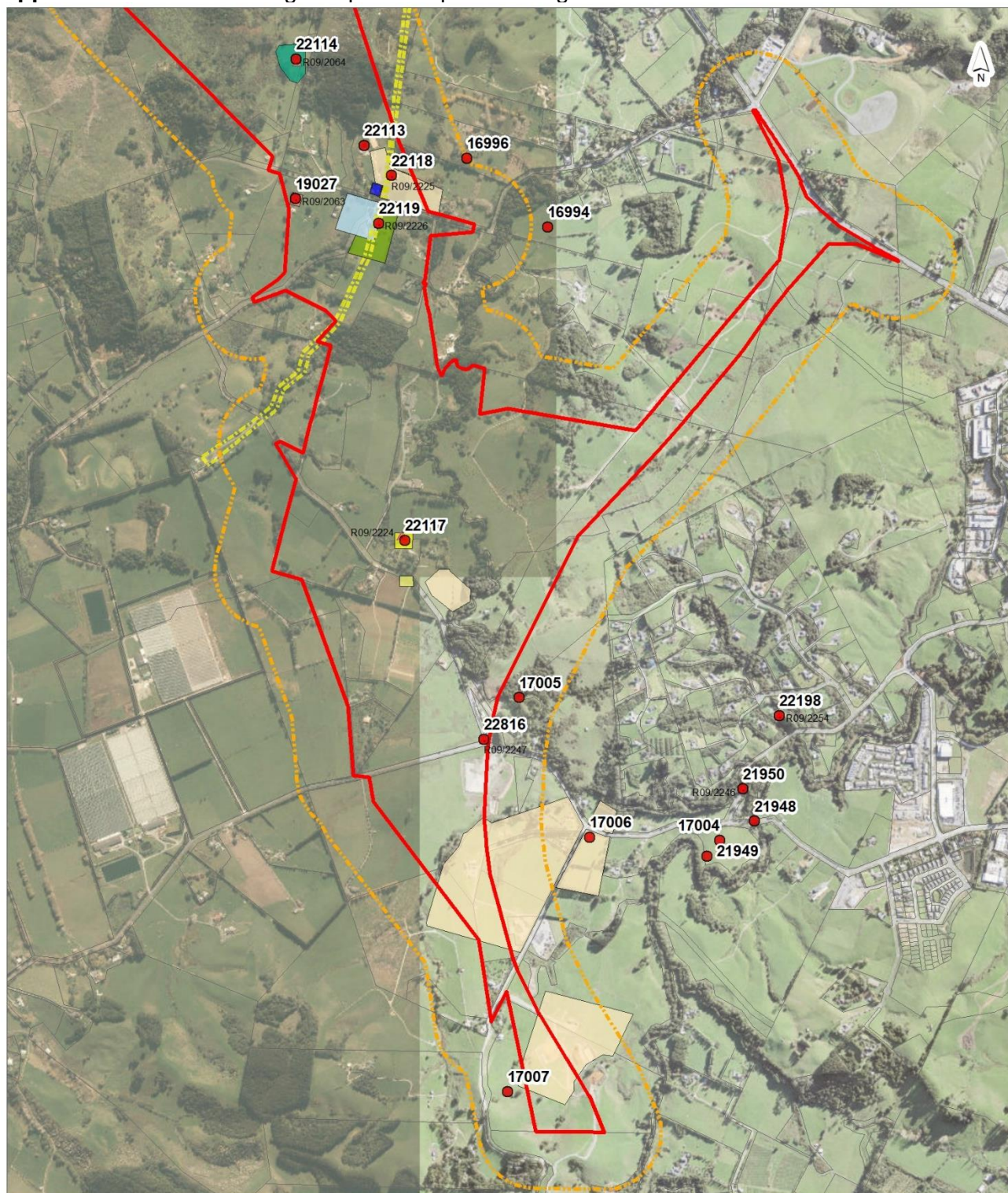


Chris Mallows

Team Leader, Cultural Heritage Implementation, Heritage Unit

Date: 12/08/2020

Appendix 1: Historic Heritage Maps of Proposed Designation and 200m Buffer Area.

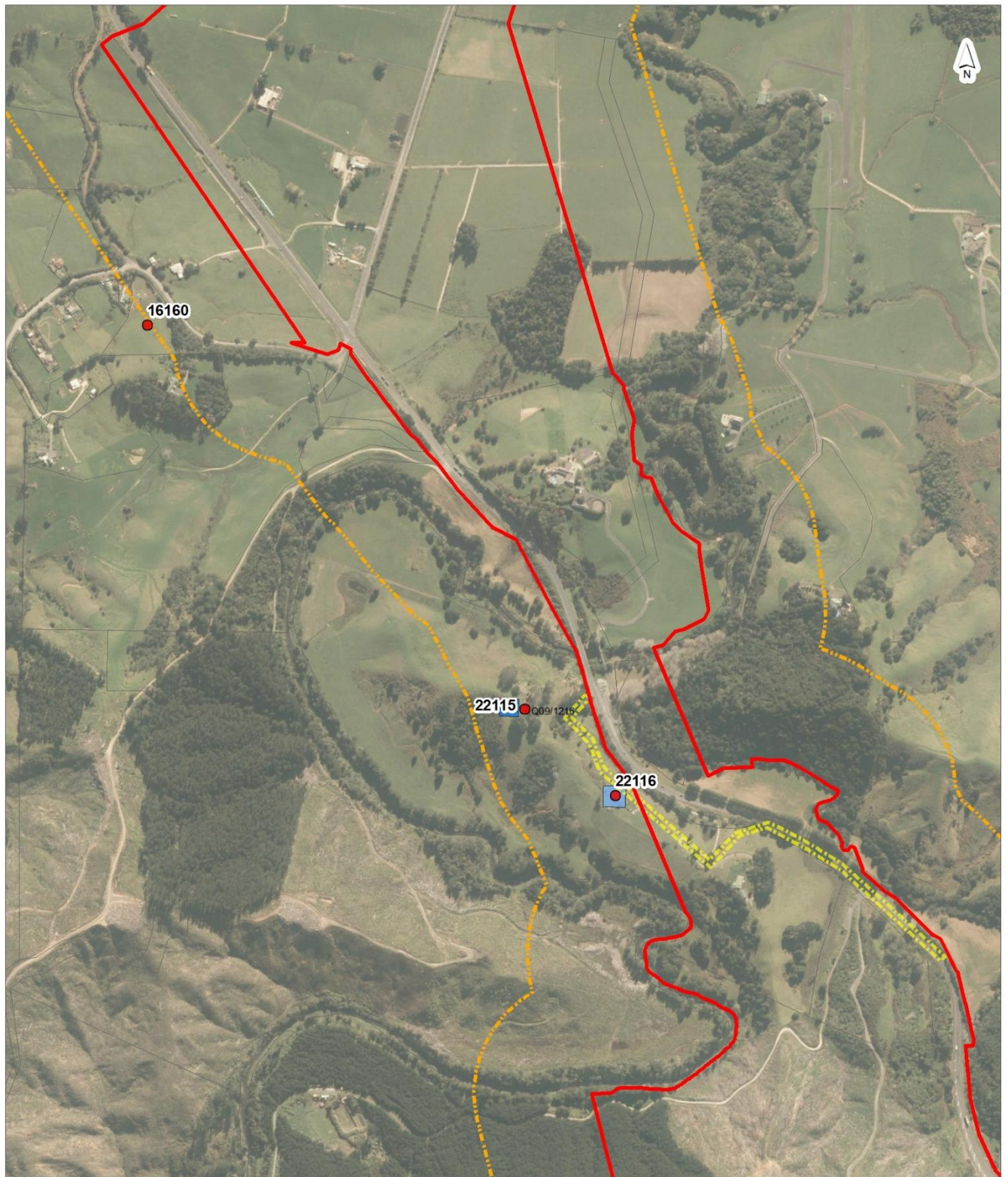


- | | |
|--|---------------------------------|
| ● CHI Site | ■ Dome Valley Teacher Residence |
| ■ W2W_Proposed_Designation_Boundary_20200310 | ■ Old Coach Road |
| ■ WW2W_200mbuffer | ■ Phillips Cottage (Relocated) |
| ■ WWII Camp | ■ Site of Phillips Cottage |
| ■ Abandoned School Site | ■ Streamlands |
| ■ Armitage House | ■ Whitson's House |
| ■ Armitage Woolshed | ■ Whitson's Stockyard |
| ■ Dome Valley School | ■ Woodthorpe |
| | ■ Parcel Boundaries |

**WW2W
Historic Heritage Sites
Warkworth Area**

0 110 220 330
Meters
Scale @ A3
= 1:12,618
Date Printed:
7/08/2020





- | | |
|---|---|
| ● CHI Site | Dome Valley Teacher Residence |
| W2W_Proposed_Designation_Boundary_20200310 | Old Coach Road |
| WW2W_200mbuffer | Phillips Cottage (Relocated) |
| WWII Camp | Site of Phillips Cottage |
| Abandoned School Site | Streamlands |
| Armitage House | Whitson's House |
| Armitage Woolshed | Whitson's Stockyard |
| Dome Valley School | Woodthorpe |
| | Parcel Boundaries |

WW2W Historic Heritage Sites Hōteu River Area

0 50 100 150
Meters

Scale @ A3

= 1:6,036

Date Printed:
7/08/2020



Appendix 2: Recommended Changes to Proposed Designation Conditions

Definitions				
Acronym / Term		Definition / Meaning		
HHMP		Historic Heritage Management Plan		
Management and outline plan process				
Table 1: Management Plan Tables				
Management Plan	Decision Pathway	When to submit	Response time from Manager	Duration for implementation
Historic Heritage	To Manager for information	At least 20 days prior to start of Project Works	N/A	Duration of Project Works
Mana Whenua				
16. The Cultural Indicators Report should:				
a. Identify cultural sites, landscapes and values that have the potential to be affected by Construction Works;				
b. Set out the desired outcomes and recommended methods for management of potential effects on cultural sites, landscapes and values;				
c. Identify cultural indicators of traditional association, mahinga kai and cultural stream health as relevant to the Construction Works;				
d. Set out recommended methods to measure the effects on identified cultural indicators during Construction Works;				
e. Identify opportunities for restoration and enhancement of Mauri and mahinga kai within the Project area; and				
f. Identify cultural values that should be acknowledged in the development of the ULDF, the EMP, the HHMP and the Cultural Monitoring Plan for the Construction Works.				
Urban Design and Landscape				
49. The ULDFMP(s) shall be prepared by a Suitably Qualified and Experienced Person and shall include the following details for the sector to which the plan applies:				
...				
x. Features (such as interpretive signage), locations, deliverables, and timeframes for identifying and interpreting cultural heritage, built heritage, archaeology, geological heritage and ecology in collaboration with Auckland Council Heritage Unit, HNZPT, Mana Whenua and local museums/historical societies.				

<p>Historic Heritage</p> <p>78. The Requiring Authority shall design and implement the Project Works to achieve the following Heritage Outcomes:</p> <ul style="list-style-type: none"> a. Avoid adverse effects on historic heritage sites and places; b. Where avoidance of adverse effects is not practicable, minimise adverse effects on historic heritage sites and places; c. Investigate and record all historic heritage sites and places (pre and post 1900) within the Designation, where avoidance is not possible; and d. Positive heritage outcomes 	<p>Historic Heritage Management Plan</p> <p>79. The Requiring Authority shall prepare a Historic Heritage Management Plan (HHMP) prior to the start of Project Works, in consultation with HNZPT, Auckland Council and Mana Whenua. The objective of the HHMP is to identify indirect and direct adverse effects on historic heritage sites and appropriate methods to avoid, remedy and mitigate them. The HHMP shall set out the methods to achieve the Heritage Outcomes</p> <p>81. The HHMP shall be prepared by a Suitably Qualified and Experienced Person(s) and shall identify and include:</p> <ul style="list-style-type: none"> a. Any adverse direct and indirect effects on historic heritage sites and measures to appropriately avoid, remedy or mitigate. b. Methods and areas for further identification and assessment of potential historic heritage within the Designation to inform detailed design; c. Known historic heritage sites and places and areas of historic heritage potential within the Designation; d. Any pre-1900 archaeological sites for which an Archaeological Authority under the HNZPTA will be sought or has been granted; e. Any historic heritage site within the Designation to be avoided, relocated, documented and recorded; f. Roles, responsibilities and contact details of Project personnel, Mana Whenua representatives, and relevant agencies involved with historic heritage and archaeological matters including surveys, documentation and recording, monitoring of Project Works, Accidental Discovery Protocols, and monitoring of conditions; g. Specific areas to be investigated, monitored and recorded to the extent these are directly affected by Project Works; h. The proposed methodology for investigating and recording post-1900 historic heritage sites (including buildings) that need to be demolished or relocated, including details of their condition, salvage and reuse strategy, measures to mitigate any adverse effects and timeframe for implementing the preferred methodology, in accordance with the HNZPT guideline AGS 1A: Investigation and Recording of Buildings and Standing Structures (November 2018), or any subsequent version and the International Council on Monuments and Sites (ICOMOS) New Zealand Charter 2010 or any subsequent versions; i. Proposed methodology for documentation of historic heritage exposed during construction and the recording of these sites in the Auckland Council Cultural Heritage Inventory (www.chi.net/Home.aspx). j. Methods to acknowledge cultural values identified through condition 16(f) where archaeological sites also involve Ngā Taonga Tuku Iho (treasures handed down by our ancestors) and where feasible and practicable to do so;
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<p>k. Methods for protecting or minimising adverse effects on historic heritage and archaeological sites within the Designation during Project Works as far as practicable in line with the ICOMOS NZ Charter and including construction methods that minimise vibration (for example fencing around historic heritage and archaeological sites to protect them from damage during construction); and</p> <p>l. Training requirements for contractors and subcontractors on historic heritage and archaeological sites within the Designation, legal requirements relating to accidental discoveries, and implementing the Accidental Discovery Protocol. The training shall be undertaken under the guidance of a Suitably Qualified and Experienced Person and Mana Whenua representatives (to the extent the training relates to cultural values identified under condition 16(f)) and shall include a pre-construction briefing to contractors.</p> <p>m. Specific recommendations from the Historic Heritage Assessment regarding:</p> <ul style="list-style-type: none"> i. Woodthorpe House (CHI 22114, R09/2064); ii. Dome Valley teacher's residence (CHI 22119, R09/2226); iii. Dome Valley school site (CHI 22118, R09/2225); iv. Phillips' Cottage (CHI 19027, R09/2063); v. Whitson's House and Stockyard (CHI 22117, R09/2224); and vi. World War II military camps (various) in the Warkworth area. <p>n. Construction and post-construction reporting requirements.</p> <p>Measures to mitigate adverse effects on historic heritage that achieve positive heritage outcomes. Measures may include, but not be limited to: increased public awareness and amenity of historic heritage sites and places, interpretation, repatriation and donation of historic heritage material to suitable repositories and publication of heritage stories.</p>	
Accidental discovery during construction	
82. Prior to the start of Project Works, the Requiring Authority shall prepare an Accidental Discovery Protocol for any accidental historic heritage discoveries which occur during Project Works.	
83. The Accidental Discovery Protocol shall be consistent with the NZ Transport Agency Minimum Standard P45 Accidental Archaeological Discovery Specification, or any subsequent version and the Auckland Unitary Plan Accidental Discovery Rule (E11 Land disturbance Regional – E11.6.1)	
84. The Accidental Discovery Protocol shall be prepared in collaboration with Mana Whenua and consultation with Auckland Council and HNZPT modified as necessary to reflect the site-specific Project detail. Collaboration and consultation shall be undertaken with best endeavours by all parties and concluded within 30 Days	
85. The Accidental Discovery Protocol shall be implemented throughout the Project Works except in circumstances where an Archaeological Authority has been granted by HNZPT for the Project in which case the requirements of the Archaeological Authority shall apply.	

Additional conditions:

HH1. Electronic copies of all historic heritage reports relating to historic heritage investigations (evaluation, excavation and monitoring etc.), including interim reports, shall be submitted to the Manager as soon as they are produced.

HH2. The nominated heritage specialist shall record and log any heritage discovery and on-going compliance with the conditions of this consent. This log shall be provided to the Council (Team Leader Compliance Monitoring North West in consultation with Manager: Heritage Unit) at monthly intervals, or upon request.

HH3. In the event that any unrecorded historic heritage sites are exposed as a result of the work, these shall be recorded and documented by a Suitably Qualified and Experienced Person for inclusion within the Auckland Council Cultural Heritage Inventory (CHI). The information and documentation shall be forwarded to the Team Manager: Heritage Unit (heritageconsents@aucklandcouncil.govt.nz) within one month of the works being completed on site.

HH4 (to be included with condition 79). The Requiring Authority shall submit the HHMP to the Team Leader, Monitoring (in consultation with the Manager: Heritage Unit) for certification at least 20 working days prior to Project Works commencing.

HH5 (to be included with condition 79). The HHMP shall be prepared with up to date information. This additional information shall be provided to council prior to the lodgement of the HHMP to streamline the certification process.

- a. This additional information may include archaeological assessments, heritage impact assessments, granted authorities, final archaeological reports and updated site record forms (CHI and NZAA ArchSite) prepared/submitted since time of the granting of any designation.
- b. Cultural Indicators Report
- c. Additional areas of survey and investigation undertaken as part of the WW2W project. For example, survey and predictive modelling recommended by Hōkai Nuku

Technical Memo –Specialist Unit

To:	Wayne Siu: Planner – Plans and Places, Auckland Council
CC:	Blair Masefield: Technical Director – Planning (Lands and Survey Ltd.)
From:	Elise Caddigan, Built Heritage Specialist, Built Heritage Implementation, Heritage Unit, Auckland Council
Date:	11 August 2020

1.0 APPLICATION DESCRIPTION

Application and property details

Applicant's Name:	Waka Kotahi – New Zealand Transport Agency
Application description:	purpose Notice of Requirement to amend the Unitary Plan and associated Regional Resource Consents to enable the construction, operation and maintenance for a new four lane state highway from Warkworth to Wellsford (Te Hana).
Relevant numbers:	application BUN60354951. The individual resource consent application numbers are: LUC60354952, LUS60354955, WAT60354953, WAT60355184, WAT 60356979, DIS60354954, LUC60355185, DIS60355186
Site address:	Multiple sites located between Warkworth and Te Hana.

2.0 ADEQUACY OF INFORMATION

2.1 The assessment below is based on the information submitted as part of the application. In particular, I have reviewed the following documents:

- Form 18 Notice of Requirement for designation of land under s181 of the Resource Management Act 1991. From Waka Kotahi New Zealand Transport Agency to Auckland Council. March 2020.
 - Volume 1 - Assessment of Effects on the Environment
- Assessment of Environmental Effects. *Assessment of Effects on the Environment: Warkworth to Wellsford Project*. Prepared by Waka Kotahi New Zealand Transport Agency. March 2020.
 - Volume 2 - Assessment Reports
- Ara Tūhono Project, Warkworth to Wellsford Section; *Historic Heritage Assessment*. Prepared by Clough and Associates Limited for Waka Kotahi New Zealand Transport Agency. July 2019.

- Proposed Designation and Indicative Alignment Plan. Prepared by Jacobs GHD Joint Venture. July 2019.
- Sections relevant to my area of expertise of the Urban and Landscaping Design Framework Planning Version. Prepared by Boffa Miskell. June 2019.
- Proposed draft designation conditions, 12 May 2020.
- S92 Response 'Part 2': *Subject: Notice of Requirement and Resource Consent Applications – response to Auckland Council's request for further information.* 3 August 2020.

2.2 It is considered that the information submitted is sufficiently comprehensive to enable the consideration of the effects of the application on an informed basis:

- The level of information provides a reasonable understanding of the nature and scope of the proposed activity as it relates to the Auckland Unitary Plan Operative in part (AUPOIP) (updated 10 July 2020).
- The extent and scale of any adverse effects on the environment are able to be assessed.

2.3 I have assessed the information in these documents against the AUPOIP and whether the application can be appropriately mitigated to give effect to s6(f) of the RMA.

In making this assessment, I have also taken into account:

- Auckland Council Cultural Heritage Inventory (CHI): <https://chi.net.nz/>
- Heritage New Zealand Pouhere Taonga Rārangī Kōrero/The List: <https://www.heritage.org.nz/the-list>
- International Council on Monuments and Sites (ICOMOS) New Zealand Charter: <https://icomos.org.nz/charters/>
- Waka Kotahi - New Zealand Transport Agency. "Historic heritage impact assessment guide for state highway projects". March 2015.
- Other relevant sources containing historical information.

Other Teams Involved

2.4 This application has been referred to Auckland Council's Cultural Heritage Implementation Team because the proposed works will also have an effect on historic heritage (including archaeology) within the application's boundaries.

Site Visit

- 2.5 A site visit was undertaken to the project area on Tuesday 7th July and Thursday 27th July.

3 ASSESSMENT OF EFFECTS

- 3.1 Detail of the project background is provided in the Assessment of Environmental Effects (AEE) and supporting application material and will not be repeated here, unless when describing direct and indirect, actual and potential adverse effects on built heritage.
- 3.2 Through the Historic Heritage Assessment (HHA) the Waka Kotahi – New Zealand Transport Agency (WK-NZTA) have provided their own definition of a historic heritage site, being: “a site that is not identified as an Archaeological site, but which has heritage significance”.¹ This definition is inconsistent with the Resource Management Act 1991 (RMA) definition of historic heritage² and standard heritage practice. WK-NZTA’s own guidance for assessing historic heritage³ references the RMA definition of historic heritage and describes a range of place-based heritage including historic buildings and structures, archaeological sites and the surroundings of buildings, sites and places.⁴
- 3.3 I do not accept the S92 response that states this is a result of negotiations between Auckland Council Heritage and Heritage New Zealand Pouhere Taonga (HNZPT).⁵ It is common practice to refer to only the statutory definitions for both historic heritage and pre-1900 archaeology, and I have only applied the RMA definition of historic heritage as it relates to built heritage in my assessment. I note that no definition of built heritage has been provided in the HHA. For consistency, many condition amendments reflect this position.

Built heritage within the application boundaries

- 3.4 This section summarises the built heritage of the area within the Notice of Requirement (NOR) application’s boundaries and includes other specific built heritage sites that have been identified. The information derives from the NOR application and supporting documentation (in particular Section 9.10 of the AEE⁶ and the HHA) and other relevant sources listed in Section 2.
- 3.5 The HHA has identified and assessed historic heritage sites within the proposed designation boundary, including a 200m buffer to highlight additional areas of heritage

¹ Clough and Associates Ltd. “Historic Heritage Assessment”. July 2019 p. 3

² historic heritage— (a) means those natural and physical resources that contribute to an understanding and appreciation of New Zealand’s history and cultures, deriving from any of the following qualities:

(i) archaeological: (ii) architectural: (iii) cultural: (iv) historic: (v) scientific: (vi) technological; and (b) includes— (i) historic sites, structures, places, and areas; and (ii) archaeological sites; and (iii) sites of significance to Māori, including wāhi tapu; and (iv) surroundings associated with the natural and physical resources.

³ Waka Kotahi – New Zealand Transport Agency. “Historic heritage impact assessment guide for state highway projects”. March 2015 p. 8-11

⁴ Ibid

⁵ Waka Kotahi – New Zealand Transport Agency. “S92 response”. 3 August 2020 p. 53

⁶ Waka Kotahi – New Zealand Transport Agency. “Assessment of Environmental Effects”. March 2020 p. 275-284

potential or sensitivity.⁷ However, sites that are identified in this buffer area have not been assessed for historic heritage value. Sites were identified primarily through background historical and archaeological research, with some supporting field survey (limited due to landowner access permissions, project scale and dense vegetation cover through the Dome Valley).⁸ Background research was followed by field surveys to examine “sections of the Project area considered to have archaeological potential”.⁹

- 3.6 I have limited my assessment to historic heritage sites of potential built heritage value where there is outstanding disagreement between myself and the applicant. In my view the current HHA and conditions are not robust enough to ensure a detailed future review of built heritage within the designation boundary to inform the detailed design of the Project, nor to mitigate adverse effects to an appropriate level. The following paragraphs explain this position and condition amendments.
- 3.7 In my view built heritage has not been adequately assessed in the HHA. Archaeology and built heritage are two different disciplines under the broader historic heritage umbrella, and while there is overlap they must each be addressed properly. I agree with the S92 response that some places are difficult to assess from a lack of public visibility; however, there is a very strong focus on archaeology and archaeological sites, including the assessment of built heritage places generally for their archaeological potential. Where built heritage is assessed I disagree with the threshold of historic heritage value attributed under some criteria. Some landscapes have been referred to, however the early settlement area of Dome Valley / Streamlands has been undervalued in my opinion.
- 3.8 In particular, this is demonstrated by the assessment of Woodthorpe House and Phillips Cottage. Woodthorpe House (Allot 59 SO 89D, Phillips Road, Dome Valley) is identified as both a historic structure and archaeological site.¹⁰ I have relied upon the HHA and Appendix C for historical research and images as the site was not visible from the public realm. I generally concur with the description of the structure, its condition and modifications. Woodthorpe House has been assessed as having moderate historic heritage significance¹¹, and the assessment of effects concludes that the building is in poor repair. Woodthorpe House is also concluded to have moderate archaeological values, and it is on this basis that it is recommended for recording.¹² I note that the dwelling is recommended for Level III recording based on its archaeological value.¹³ I disagree that this is an appropriate level of recording and propose that this is updated to reflect the latest (2018) HNZPT guidance.
- 3.9 Whilst I agree that the building appears dilapidated, historic heritage values are intrinsic

⁷ Clough and Associates Ltd. “HHA”. 2019 p.8-9. Note that the “wider project area” is not defined within the HHA glossary

⁸ Clough and Associates Ltd. “HHA” 2019 p. 13-16

⁹ Clough and Associates Ltd. “HHA” 2019 p. 13

¹⁰ Clough and Associates Ltd. “HHA” 2019 p. 36, 103

¹¹ Clough and Associates Ltd. “HHA” 2019 p. 94, 96-98, 103

¹² Ibid

¹³ Clough and Associates Ltd. “HHA” 2019 p. 151

and still exist even when a place is in poor condition. The heritage significance section of the HHA focuses on the archaeological value and attributes value and mitigation to Woodthorpe House as an archaeological site rather than as a built heritage site (or both as per Table 1). I agree that the recommendations of the HHA (included in amended condition 81(m)(i) in Appendix 1) are generally appropriate if Woodthorpe House cannot be avoided in the final Project design; however it is important to highlight the discrepancy between the two moderate value levels assigned and the recommendations.

- 3.10 Phillips Cottage (156 Kaipara Flats Road, Dome Valley) is an extant c.1888 building located within the designation boundary and within the same Dome Valley / Streamlands historic landscape as Woodthorpe House. It was relocated approximately 300m across the road in c.2011. This place also demonstrates the predominant archaeological focus of the HHA as only the original site of the cottage has been assessed for potential archaeological remains.¹⁴ Section 5.2.4 of the HHA states that “although its [Phillips Cottage] relocated position is still within the proposed designation boundary, the building no longer has status as a historic building”. This is repeated in the assessment of effects summary: “the house was relocated in 2011 so no longer has any significance”.¹⁵ I have been clear and consistent throughout my discussions with WK-NZTA that relocation within the area of significance does not diminish the historic heritage values of the place and that a built heritage assessment of the place is justified. Research indicates that this early cottage has been sympathetically renovated and as viewed from the public realm this appears correct. I note that WK-NZTA are the current property owners of the subject site, however to my knowledge no additional research or site visit has been undertaken. I informally requested access with no firm response.
- 3.11 Following extended consultation with the applicant, recognition of the cottage as a built heritage place (and not just the original site remains) and a very brief assessment of values table was provided on 3 August 2020. I disagree with the attribution of overall moderate heritage values given, which appear to discount the history of the local area, and the comments lack alignment with both the AUPOIP’s criterion and threshold descriptions, and the methodology and guidance for evaluating Auckland’s historic heritage document. The assessment provided also appears to differ from WK-NZTA’s own document for assessing effects on historic heritage which states that “historic heritage places should be understood in terms of their setting or context, which includes the wider heritage landscape. The relationship of a place with other historic heritage places in the environment and the wider historical context should be appropriately considered in any heritage assessment.”¹⁶ In my opinion the extant Phillips Cottage has potential to meet the considerable threshold for some historic heritage values, and it would not be appropriate to allow its demolition without further attempts to avoid effects. Therefore, I have proposed condition BH2 to reflect this level of significance. I note that this is also aligned with WK-NZTA’s own approach to mitigation which

¹⁴ Clough and Associates Ltd. “HHA” 2019 p. 56

¹⁵ Clough and Associates Ltd. “HHA” 2019 p. 93

¹⁶ WK-NZTA “Assessing historic heritage” 2015 p. 11

supports relocation before demolition.¹⁷

- 3.12 I understand that the indicative alignment has been designed to avoid adverse effects on scheduled historic heritage (The Retreat / Underwood House (469 State Highway 1, Te Hana) AUPOIP Schedule 14.1 ID 00428), and that assessment of places of potential historic heritage value within a 200m buffer of the designation boundary have been deferred. This is a conservative approach to identifying adverse effects; for example, whilst The Retreat / Underwood House is not directly affected, it is within the 200m buffer and there will be a change in its setting which has not been acknowledged. Condition 49 has been amended to ensure that the significance of The Retreat / Underwood House to the area is recognised in the urban design in this area.
- 3.13 Four of the 12 historic heritage sites identified within the proposed designation boundary and the wider Project area are US Military Camps. These have been categorised as historic structures; I understand that there is little to no above-ground fabric remaining of these sites¹⁸ and I defer to Ms Ramsay (Auckland Council, Specialist: Archaeology) for her expert opinion on these places.
- 3.14 The HHA states that “the Indicative Alignment has been assessed to establish any effects on archaeological and historic heritage values. In addition, the whole proposed designation has also been assessed in order to identify any recorded, new, and potential archaeological and historic heritage sites that need to be considered prior to the final detailed design.”¹⁹ I have undertaken desktop research and site visits in conjunction with the maps produced by Ms Ramsay and have identified that Phillips Cottage is extant in its relocated position, and multiple other places of built heritage potential within the designation boundary that have not been considered in the HHA. To avoid adverse effects on unscheduled built heritage, I have included these places in proposed condition BH1. Inclusion of this condition will ensure that to the best of my current knowledge, built heritage places within the designation will be subject to a proper built heritage assessment and avoided where practicable in the detailed design.
- 3.15 My concern that the current HHA and conditions are insufficient to address effects on built heritage has not been alleviated by the S92 response and communication with the applicant. I have identified a number of places that have potential built heritage value, or would likely meet the threshold for scheduling as a historic heritage place which are yet to be fully acknowledged by the applicant. However, I believe that with a revised set of conditions the adverse effects of the Project on built heritage can be mitigated to an acceptable level.

¹⁷ WK-NZTA “Assessing historic heritage” 2015 p. 26

¹⁸ Clough and Associates Ltd. “HHA” 2019 p. 40-44

¹⁹ Clough and Associates Ltd. “HHA” 2019 p. 35

4 SUBMISSIONS

4.1 One submission was received that is directly relevant to built heritage. This is:

- Heritage New Zealand Pouhere Taonga (HNZPT) (NOR Submission 21).

4.2 HNZPT supports the NOR with amendments.

4.3 The main reasons for HNZPT's position are summarised below²⁰:

- That minor amendments to the proposed draft designation conditions are made to provide clarity, successful implementation, and compliance between archaeological matters pursuant to the HNZPT Act (2014) and historic heritage matters pursuant to the RMA (1991).
- That additional research and recently recorded archaeological and historic heritage sites are taken into consideration in an updated Historic Heritage Assessment.
- That provision is made for historic heritage matters to be addressed within the proposed draft designation conditions to ensure the proposed heritage outcomes are achieved.
- That broader mitigation is considered for historic heritage sites and places to enable increased public awareness and amenity, through site interpretation, donation of artefacts as appropriate to a suitable repository, and collation and publication of heritage stories.
- That conditions allowing mana whenua to exercise kaitiaki are supported.

4.4 HNZPT seeks relief regarding built heritage through the amendment and insertion of two designation conditions:

- Amend condition 81(g) to include reference to the updated HNZPT guideline AGS-1: Investigation and Recording of Buildings and Standing Structures (November 2018), and take into account the International Council on Monuments and Sites New Zealand Charter 2010.
- Insertion of new condition 81(k) to include measures to mitigate adverse effects on historic heritage (both pre and post 1900) that enable increased public awareness and amenity of the historic heritage of the area, including interpretation, donation of found items (as appropriate), and publication of heritage stories.

4.5 I concur with the proposed amendment to condition 81(g). I also concur with the intent of condition 81(k) and note that it has been included in the amended conditions (81 (o))

²⁰ Heritage New Zealand Pouhere Taonga. "Notice of Requirement – Submission 21". 29 June 2020 p.2-3

proposed by myself and Ms Ramsay.

5 CONDITIONS

- 5.1 I have reviewed the proposed NOR conditions (dated 12 May 2020) and have the following recommendations (to be read in conjunction with Appendix 1 for the full amended version of NOR conditions):
- Multiple amendments to reflect terminology changes.
 - Inclusion of consultation with Auckland Council's Heritage Unit for part of the Urban and Landscape Design Management Plan.
 - Addition of sub-conditions as per HNZPT submission (including amendment to condition 78 to reflect the potential positive outcomes as recommended by the HHA²¹).
 - Inclusion of an updated list of built heritage places identified within the designation boundary.
 - Separate condition to reflect the significance of Phillips Cottage, including local relocation (if required) in the first instance.

6 RECOMMENDATION

- 6.1 The assessment in this memo does not identify any reasons to withhold consent, and the aspect of the proposal considered by this memo could be granted consent, subject to recommended conditions, for the following reasons:
- Subject to the imposition of consent conditions, it is considered that the adverse effects on built heritage can be appropriately avoided, remedied and mitigated.

²¹ Clough and Associates Ltd. "HHA" 2019 p.99, 107

7 REVIEW

Memo prepared by:



Elise Caddigan

Built Heritage Specialist, Built Heritage Implementation, Heritage Unit

Date: 11/08/2020

Reviewed by:



Rebecca Fogel

Team Leader, Built Heritage Implementation, Heritage Unit

Date: 17/08/2020

Appendix 1: Recommended Changes to Proposed Designation Conditions

Definitions				
Acronym / Term		Definition / Meaning		
HHMP		Historic Heritage Management Plan		
Management and outline plan process				
Table 1: Management Plan Tables				
Management Plan	Decision Pathway	When to submit	Response time from Manager	Duration for implementation
Historic Heritage	To Manager for information	Prior to start of Project Works		Duration of Project Works
Mana Whenua				
16. The Cultural Indicators Report should:				
<div><div>a.</div><div>b.</div><div>c.</div><div>d.</div><div>e.</div><div>f.</div></div> Identify cultural sites, landscapes and values that have the potential to be affected by Construction Works; Set out the desired outcomes and recommended methods for management of potential effects on cultural sites, landscapes and values; Identify cultural indicators of traditional association, mahinga kai and cultural stream health as relevant to the Construction Works; Set out recommended methods to measure the effects on identified cultural indicators during Construction Works; Identify opportunities for restoration and enhancement of Mauri and mahinga kai within the Project area; and Identify cultural values that should be acknowledged in the development of the ULDF, the EMP, the HHMP and the Cultural Monitoring Plan for the Construction Works.				
Urban Design and Landscape				
49. The ULDMP(s) shall be prepared by a Suitably Qualified and Experienced Person and shall include the following details for the sector to which the plan applies:				
<div><div>x.</div></div> Features (such as interpretive signage), locations, deliverables, and timeframes for identifying and interpreting cultural heritage, built heritage, archaeology, geological heritage and ecology in consultation with Auckland Council Heritage Unit, HNZPT, Mana Whenua and local museums/historical societies.				

<p>Historic Heritage</p> <p>78. The Requiring Authority shall design and implement the Project Works to achieve the following Heritage Outcomes:</p> <ul style="list-style-type: none"> a. Avoid adverse effects on historic heritage sites and places; b. Where avoidance of adverse effects is not practicable, minimise adverse effects on historic heritage sites and places; c. Where minimising effects are not practicable, investigate and record all historic heritage sites and places (pre and post 1900) within the designation; and d. Positive historic heritage outcomes. 	<p>Historic Heritage Management Plan</p> <p>79. The Requiring Authority shall prepare a Historic Heritage Management Plan (HHMP) prior to the start of Project Works, in collaboration with Mana Whenua, and in consultation with HNZPT, Auckland Council. The purpose of the HHMP is to identify indirect and direct adverse effects on historic heritage sites and appropriate methods to avoid, remedy and mitigate them. The HHMP shall set out the methods to achieve the Heritage Outcomes. The HHMP shall be provided to the Manager (in consultation with the Manager – Heritage Unit) for certification.</p> <p>81. The HHMP shall be prepared by a Suitably Qualified and Experienced Person(s) and shall identify and include:</p> <ul style="list-style-type: none"> a. Any adverse direct and indirect effects on historic heritage sites and measures to appropriately avoid, remedy or mitigate; b. Methods and areas for further identification and assessment of potential historic heritage within the Designation to inform detailed design; c. Known historic heritage sites and places and areas of historic heritage potential within the Designation; d. Any pre-1900 archaeological sites for which an Archaeological Authority under the HNZPTA will be sought or has been granted; e. Any historic heritage site within the Designation to be avoided, relocated, documented and recorded; f. Roles, responsibilities and contact details of Project personnel, Mana Whenua representatives, and relevant agencies involved with historic heritage and archaeological matters including surveys, documentation and recording, monitoring of Project Works, Accidental Discovery Protocols, and monitoring of conditions; g. Specific areas to be investigated, monitored and recorded to the extent these are directly affected by Project Works; h. The proposed methodology for investigating and recording post-1900 historic heritage sites (including buildings) that need to be demolished or relocated, including details of their condition, salvage and reuse strategy, measures to mitigate any adverse effects and timeframe for implementing the preferred methodology, in accordance with the HNZPT guideline AGS 1A: Investigation and Recording of Buildings and Standing Structures (November 2018), or any subsequent version and the International Council on Monuments and Sites (ICOMOS) New Zealand Charter 2010 or any subsequent versions;
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<ul style="list-style-type: none"> i. Proposed methodology for documentation of historic heritage exposed during construction and the recording of these sites in the Auckland Council Cultural Heritage Inventory (www.chi.net/Home.aspx); j. Methods to acknowledge cultural values identified through condition 16(f) where archaeological sites also involve Ngā Taonga Tuku Iho (treasures handed down by our ancestors) and where feasible and practicable to do so; k. Methods for protecting or minimising adverse effects on historic heritage and archaeological sites within the Designation during Project Works as far as practicable in line with the ICOMOS NZ Charter and including construction methods that minimise vibration (for example fencing around historic heritage and archaeological sites to protect them from damage during construction); l. Training requirements for contractors and subcontractors on historic heritage and archaeological sites within the Designation, legal requirements relating to accidental discoveries, and implementing the Accidental Discovery Protocol. The training shall be undertaken under the guidance of a Suitably Qualified and Experienced Person and Mana Whenua representatives (to the extent the training relates to cultural values identified under condition 16(f)) and shall include a pre-construction briefing to contractors; m. Specific recommendations from the Historic Heritage Assessment regarding: <ul style="list-style-type: none"> i. Woodthorpe House (CHI 22114, R09/2064); ii. Dome Valley teacher's residence (CHI 22119, R09/2226); iii. Dome Valley school site (CHI 22118, R09/2225); iv. Phillips' Cottage (CHI 19027, R09/2063); v. Whitson's House and Stockyard (CHI 22117, R09/2224); and vi. World War II military camps (various) in the Warkworth area. n. Construction and post-construction reporting requirements; o. Measures to mitigate adverse effects on historic heritage that achieve positive heritage outcomes. Measures may include, but not be limited to: increased public awareness and amenity of historic heritage sites and places, interpretation, repatriation and donation of historic heritage material to suitable repositories and publication of heritage stories. 	<p>Additional conditions:</p> <p>HH1. Electronic copies of all historic heritage reports relating to historic heritage investigations (evaluation, excavation and monitoring etc.), including interim reports, shall be submitted to the Manager as soon as they are produced.</p> <p>HH2. The nominated heritage specialist shall record and log any heritage discovery and on-going compliance with the conditions of this consent. This log shall be provided to the Council (Team Leader: Compliance Monitoring North West in consultation with Manager: Heritage Unit) at monthly intervals, or upon request.</p> <p>HH3. In the event that any unrecorded historic heritage sites are exposed as a result of the work, these shall be recorded and documented by a Suitably Qualified and Experienced Person for inclusion within the Auckland Council Cultural Heritage Inventory (CHI). The information and documentation shall be</p>
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<p>forwarded to the Team Manager: Heritage Unit (heritageconsents@aucklandcouncil.govt.nz) within one month of the works being completed on site.</p> <p>HH4 (to be included with condition 79). The Requiring Authority shall submit the HHMP to the Team Leader, Monitoring (in consultation with the Manager: Heritage Unit) for certification at least 20 working days prior to Project Works commencing.</p> <p>HH5 (to be included with condition 79). The HHMP shall be prepared with up to date information. This additional information shall be provided to council prior to the lodgement of the HHMP to streamline the certification process.</p> <ul style="list-style-type: none"> a. This additional information may include archaeological assessments, heritage impact assessments, granted authorities, final archaeological reports and updated site record forms (CHI and NZAA ArchSite) prepared/submitted since time of the granting of any designation. b. Cultural Indicators Report c. Additional areas of survey and investigation undertaken as part of the WW2W project. For example, survey and predictive modelling recommended by Hōkai Nuku 	<p>Additional conditions specifically related to built heritage:</p> <p>BH1. Further assessment of built heritage shall include (but not be limited to):</p> <ul style="list-style-type: none"> a. 156 Kaipara Flats Road, Dome Valley b. 35 Borrowes Road, Waiteitei c. 30 Robertson Road, Wayby Valley d. 159 Whangaripo Valley Road, Wellsford e. 199 Rustybrook Road, Wayby Valley f. 200 Rustybrook Road, Wayby Valley <p>BH2. If Phillips Cottage (156 Kaipara Flats Road, Dome Valley) cannot be avoided at the detailed design stage, then:</p> <ul style="list-style-type: none"> a. In the first instance the cottage structure must be relocated within its local area of significance. b. If this can be demonstrated not to be practicable then the structure must be relocated within the wider area of significance, including offering the place to the Warkworth Museum. c. If all relocation options can be shown to have been exhausted, only then should the building be demolished and recorded to Level 1 of HNZPT guideline AGS 1A: Investigation and Recording of Buildings and Standing Structures (November 2018) or any subsequent version. d. Auckland Council shall be advised in writing at least 10 days prior to the cottage's relocation or demolition, with accompanying records demonstrating compliance with a-c above and 81.
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Advice note:

Compliance with BH2 (a-d) can be demonstrated by (including, but not limited to) condition of the building being suitable (or otherwise) to move, a list of receiver sites considered, and evidence that it has been offered for sale/gift and responses received.

Appendix 2: Statement of Qualifications and Experience

Elise Caddigan, Built Heritage Specialist

My full name is Elise Natalie Caddigan. I am currently employed by Auckland Council as a Built Heritage Specialist, Built Heritage Implementation Team. I have been in this role since January 2016. In my role I provide specialist advice through the resource consent process to promote the protection and conservation management of Auckland's built heritage resources. I prepare and review historic heritage evaluations, using established policy, guidelines, and methodology for evaluating historic heritage under the Unitary Plan and I prepare reports for best practice guidance documents, plan changes, resource consent hearings, disputes and Environment Court appeals in the area of built heritage.

I hold a Masters degree in Museum and Heritage Studies, a Postgraduate Diploma in History, and a Bachelor of Arts in History and Anthropology. I have worked in several museum and heritage organisations over the past ten years and have experience in all areas of collection management and the identification, research, and values assessment for heritage places.

I joined Auckland Council's Heritage Unit in 2014 as a Specialist Advisor in the Pre-1944 Survey Team. My role included conducting field work and assessing each property for building style, integrity and changes as outlined in the specific team methodology. I also recorded and evaluated sub-area heritage values and streetscapes for input into the expert heritage evidence before the Auckland Unitary Plan Independent Hearings Panel.

I am a member of ICOMOS New Zealand and the Professional Historian's Association of New Zealand.

Technical Assessment –Ecology Advice Team

To:	Wayne Siu – Planner, Planning - North/West Plans and Places
CC:	Blair Masefield - Consultant Project Manager to Premium Consents Team
From:	Andrew Rossaak – Consultant (Morphum) to Auckland Council Planning
Date:	25 August 2020

1.0 APPLICATION DESCRIPTION

Application and property details

Applicant's Name:	Waka Kotahi – New Zealand Transport Agency
Application purpose description:	Notice of Requirement to amend the Unitary Plan to enable the construction, operation and maintenance for a new four lane state highway from Warkworth to Wellsford (Te Hana). The associated designation and activity will impact areas of ecological value.
Relevant application numbers:	BUN60354951.
Site address:	Multiple sites located between Warkworth and Te Hana.

2.0 PROPOSAL, SITE AND LOCALITY DESCRIPTION

2.1 Scope of Technical Assessment

1. This Technical Assessment considers the application with regards to actual and potential effects on terrestrial ecology resulting from the proposed Notice of Requirement and development of a 4 lane highway, with reference to chapter E15 and E26 of the Auckland Unitary Plan: Operative in Part (AUP:OP). The Technical Assessment also considers the proposed 'effects management package' including measures to avoid, mitigate, offset and compensate residual adverse effects.
2. The applicant proposes a designation that is sufficient to construct, operate and maintain a 4-lane highway and includes land for access to construction sites, soil disposal and the management of effects. This is based on an indicative alignment.
3. In assessing the information for the proposed Notice of Requirement (NOR) and resulting designation, I have approached this from a perspective that designation assessments and conditions are required to provide a robust and high assurance of achieving the desired and reported ecological outcomes. This is for two reasons; firstly, as once the designation is confirmed, any changes required by Council will be required to be approached through an appeal process, and secondly, the

development and impacts could be 15 years away, under environmental conditions and biodiversity understandings that are different to those currently held¹.

4. This technical Assessment focusses on aspects that are considered deficient or require discussion in the Notice of Requirement for designation.
5. I undertook a site visit on the 8th of July 2020 to view the proposed designation extent and indicative alignment from key accessible points. This site visit was primarily to see the proposed route from key vantage points. It did not include the visiting any value ecological sites. The site visit was undertaken with other council specialists and no applicant specialists were present. It was therefore high level and without applicant discussion or detail.
6. I have undertaken a brief review of the National Environmental Standards for Freshwater published on 3 August, which become effective (in part) on 3 September 2020. The wetland provisions do not alter my comments within this Technical Assessment, however, they may have a bearing on discussions and decisions at the hearing.
7. The assessment below is based on the information submitted as part of the application. In particular, I have reviewed the following documents:
 - Assessment of Effects on the Environment: Warkworth to Wellsford Project. Prepared by Karyn Sinclair. Dated March 2020 (herein referred to as the AEE).
 - Ara Tūhono Project, Warkworth to Wellsford Section; Ecology Assessment. Prepared by Boffa Miskell. Dated July 2019 (herein referred to as the EcIA).
 - Ecological Assessment Terrestrial Values Map Series. Drawings EV-001 – EV-006. Dated July 2019.
 - Ecological Assessment Avifauna Sampling Locations Map Series. Drawings ES-030 – EV-034. Dated July 2019
 - Ecological Assessment Bat Sampling Locations Map Series. Drawings ES-040 – EV-044. Dated July 2019
 - Priority Ecological Sites Map Series. Drawings PES-010 – PES-043. Dated July 2019.
 - Landscape and Ecological Mitigation Map Series. Drawings EM-010 – EM-015. Dated July 2019.
 - Draft of Proposed Designation Conditions, Dated 12 May 2020
 - Draft Designation conditions map series (Mitigation Sites; Fauna Habitat and Flyway mitigation area; Bridge Structures in Watercourses; Crossing of the Kourawhero

¹ Acknowledging also that funding and political decisions may alter this timeframe to being sooner or much further away.

Stream and associated wetland complex; Ecological Sites)

- S92 Response Part 2 - Notice of Requirement and Resource Consent Applications – response to Auckland Council’s request for further information dated 3 August 2020 and received 4 August 2020.

Site description

8. The site descriptions provided in the AEE and EclA have been crossed-referenced with a high level site visit with viewing from vantage points and are considered adequate to make an informed assessment of the effects of the proposed activities on the terrestrial ecology.

Reasons for Notice of Requirement and conditions

9. The AEE identifies adverse effects the proposed designation will have on the environment and the ways in which identified adverse effects will be addressed.
10. This Technical Assessment considers the identified ecological effects against the Objectives (B7; D9) and those in Chapters E15 and E26 of the AUP:OP.
11. Section 6 and others of the RMA are also considered.
12. The designation is to have conditions that will meet the objectives of the AUP:OP in terms of the management of ecological values.

Streamworks enhancement

13. Offset enhancement actions for streamworks will likely require pest animal and pest plant control. Plant removal in a riparian margin may require consent, it is therefore anticipated that the application for vegetation removal in riparian margins includes pest plant control in offset and restoration areas and will be undertaken in an appropriate manner.

3.0 ASSESSMENT OF EFFECTS

14. This Technical Assessment largely agrees with the applicants reporting of existing ecological values for those sites that were able to be accessed for field survey.
15. The following discussion will focus on the following:
 - Matters of technical concern which should be noted, however, are not of sufficient scale to fundamentally change the opinion and conclusions of this Technical Assessment (**Matters to Note**).

- Matters of technical concern that remain outstanding following the s92 responses and are required to be resolved for this Technical Assessment to be able to support the proposed designation (**Outstanding Matters**).

Matters to Note

Effects management

16. The management of adverse effects can be represented as a continuum of responses: avoidance, mitigation and remediation, offsetting, environmental compensation, and lastly other forms of compensation. This hierarchical approach to managing effects is supported by the AUP:OP policies and objectives.
17. The continuum reflects that offsetting should be considered after all avenues to avoid, remedy, or mitigate have been exhausted; and environmental compensation only considered thereafter.
18. The EclA has collectively referred to all aspects of the effect's management hierarchy as 'mitigation' (EclA; pg. 136).
19. This approach makes it difficult to ascertain what measures the applicant considers to be avoidance, remediation, mitigation, offset or compensation. This approach of providing a "mitigation package" is not standard practice and is not consistent with the requirements of the AUP:OP.
20. It is the opinion of this Technical Assessment that many of the proposed actions are not 'mitigation' as they do not alleviate, nor abate, nor moderate the severity of the impacts; nor are they located at the point of impact. It is considered more appropriate to refer to these actions as offset (or environmental compensation if no measurable justification of the ratios used is provided).
21. The applicant provides in S92 response - Part 2 that for ecological outcomes, no compensation is sought, and all adverse effects are collectively referred to as "mitigation package" and are either mitigation or offset. This is in contrast to other references in the same response to "'environmental compensation' ratios" and "Streamworks Ecological Compensation Plan".

Avoidance

22. Avoidance effort has been indicated through the AEE and EclA and include efforts

to minimise impacts to SEA areas through indicative alignment.

23. Efforts of avoidance of adverse effects are accepted as reasonable.

Mitigation

24. The application has bundled all effects management actions and termed these mitigations. This makes it difficult to unravel all aspects that are true mitigation actions from those of offset or compensation.
25. The Fauna habitat and flyway mitigation provided in the EclA is largely located in existing native vegetation and is reported to be pest management and enrichment planting and as such may be considered mitigation in reducing the severity of fragmentation effects and impacts on species movement caused by the highway.
26. The mitigation of effects on some fauna is proposed to be achieved through translocations; however, ratios have been applied to offset habitat loss. It is noted that whilst some fauna may be able to be translocated, the significant adverse effect is the loss of habitat (through vegetation clearance and fragmentation).
27. In absence of further clarity from the applicant as to which adverse effects are to be mitigated and what are to be offset or compensated, the management of adverse effects is further discussed under offset below.

Offset

28. The applicant has classified the ecological aspects into four values, based on the EIANZ guidelines². This uses criteria such as representativeness, rarity, diversity and ecological context. Ecological values of: very high, high, moderate and low are applied using the criteria, or in the case of particular species, to their conservation status.
29. The EIANZ values are then lumped into two offset ratios, being 1:3 for moderate and low values and 1:6. For high and very high ecological values. This has the

² Roper-Lindsay, J., Fuller S., Hooson, S., Sanders, M., Ussher, G. (2018). Ecological impact assessment. EIANZ guidelines for use in New Zealand: terrestrial and freshwater ecosystems. 2nd edition.

function of nullifying some of the ecological values assigned.

30. The two ratios offered (1:3 and 1:6) do not meet the standards of Appendix 8 of the AUP:OP or the 10 principles of the Guidance³. This is discussed further below.
31. The ecological assessment provides no information or assurance on the ratios offered achieving no net loss of ecological value.
32. The transparent determination of offsets is a critical component to offsetting.
33. The applicant S92 response – Part 2 states that “*“No Net Loss” of biodiversity requires that impacts on biodiversity are balanced or outweighed by actions taken to avoid and minimise the impacts, to restore affected areas, and finally to offset residual impacts. Demonstrating “No Net Loss” requires explicit measurement and prediction of project-related biodiversity losses and gains.*” This review concurs with this, however, there remains concern that the explicit measurements required to demonstrate this outcome are not anticipated to be undertaken. It is, however, possible to address this through the proposed Management Plans.
34. The applicant S92 response – part 2 states that “*We note that ‘like for like’ as with offsetting generally, emerges from a desire for a high level of precision (i.e., exact trades) without acknowledging that these features are formed as a result of various successional and spatial factors. We interpret ‘like for like’ as a focus on restoring systems and processes, rather than specific plant assemblages.*” This review does not support this assertion and finds it a problematic approach. Furthermore, this approach is contrary to standard and best practice. To compound this applicant’s approach, ecosystem function and processing have not been assessed in any detail in the application documents, rather assessments are based on species and plant communities either found or reported to be in the areas, which is what is presented in the Ecological Assessment. If the applicant is to pursue the approach to achieve ‘like for like’ based on ecological systems and processes, this would require a sound evaluation and understanding of these. This has not been provided in the EclA.
35. No attempt has been made to demonstrate that ratios will achieve the ecological outcomes that are anticipated and there is a reliance on past acceptance of ratios for other projects with different ecological impacts, site specific factors and

³ MfE (2014) Guidance on Good Practice Biodiversity Offsetting in New Zealand.

enhancement values.

36. Additional conservation outcomes are possible but are not able to be demonstrated with the current ratio based offset and lack of ecological accounting.
37. Based on the lack of transparency in the offset accounting, it is difficult to assess this as offset. Offsets require a transparent, explicit and robust measurement and balancing of biodiversity predicted to be lost and gained, resulting in a no net loss (or net gain) of ecological value outcome^{4,5}. In the absence of any ecological accounting in the offset offered, it could be rather considered as compensation.
38. It is noted that similar NZTA applications are progressing with transparent ecological accounting with maximum impact areas, such as Te Ahu a Turanga: Manawatū Tararua Highway – Designation Condition 18⁶. In this case, Environmental Compensation Ratios range from 1.5:1 up to 12:1 as well as additional species-specific compensations (at ratios of 100:1) for effects.

Management plans

39. The applicant proposes that the determination of ecological outcomes is to be undertaken as part of the conditions through Management Plans. This in itself limits stakeholder participation and demonstration of equity through transparent ecological offset accounting (principles of the guidance).

Fauna

40. The specific habitat requirements of fauna displaced through the proposed activity (habitat loss) are not considered in the offset proposed or in the mitigations (translocation of fauna). The required 'like for like' habitat may not be available within the proposed designation for successful translocation and offsets plantings are unlikely to be sufficiently mature to receive translocated species.
41. Translocations of fauna (eg lizards) have little data to indicate the past success and as such need to be considered as along with habitat loss as a last resort.

⁴ MfE (2014) Guidance on Good Practice Biodiversity Offsetting in New Zealand.

⁵ Maseyk, F., Usser, G., Kessels, G., Christensen, M., Brown, M. (2018). Biodiversity Offsetting under the Resource Management Act: A guidance document.

⁶ <https://www.nzta.govt.nz/assets/projects/sh3-manawatu/nzta-nor-decision-conditions.pdf>

42. Fauna, such as bats, are sensitive to lighting. The Ecological Assessment indicated the mitigation of light impact spill at bridges (above and below) and particularly through the dome valley section would be important. Further it states that “luminaires should be designed to direct light only where it is required to minimise light spillage into the surrounds”. This is supported and a recommendation made for it to be included in a condition.
43. Fauna are also susceptible to dust and noise. Noise and dust are recognised as an effect on fauna in the Ecological Assessment. To provide effect to mitigation of these in relation to fauna, a recommendation is made.

Planting

44. The Ecological assessment recognises the impact of edge effects and fragmentation of the activity and proposes mitigation planting. It is important that these mitigation plantings are of sufficient size that that are not themselves undermined by edge effects. A recommendation has been made to achieve this.

Limits of assessment

45. Due to access limitations, only 7 of the 21 sites of ecological significance were able to be surveyed. There is, therefore, a requirement to re-assess the proposed ecological values provided to the un-surveyed sites through additional surveys once access to the areas become available.

Flyway mitigation

46. Flyway mitigation⁷ is through enhancement of existing native forest and only intersects the western part of the flyway for a small area. Most of the flyway mitigation is fragmented by the proposed road, although the road is to be in a cutting at this point.
47. The flyway concept is good practice; however, the realisation of the benefit is limited due to the extensive open sloped pasture on the east facing slope of the flyway. This limits the ecological connectivity to the large SEA to the east.
48. The S92 response – Part 2 outlines integration considerations (Q1) of the mitigation providing connectivity in landscape, but this is not achieved at the flyway, where the

⁷ Map 8 “Mitigation Sites” of Consent Conditions

mitigation is limited to existing native vegetation in the southern extent.

49. Additional planting on the east slope over the tunnel would improve connectivity and improve the integration of the mitigation actions.

Covenanted areas within the proposed designation

50. The S92 response – Part 2 states in response to a question on impacted covenants that “*Covenants on the other hand often do have management plans, and it is noted that the covenants highlighted in this question are for a subdivision and not an offset.*” It is noted that the covenants created for subdivision were to offset the adverse effects of the subdivision itself and are therefore entirely an offset.

Biosecurity

51. Kauri die back and Myrtle rust biosecurity measures are proposed in the conditions, however these do not include Argentine ants. This has been addressed through a proposed condition amendment.

Lapse date

52. The application is proposing a consent lapse date of 15 years for the activities resulting in the impacts to native vegetation and fauna.
53. Due to the indicative nature of the alignment there is a corresponding level of uncertainty regarding the actual quantum of residual adverse effects on the ecology within the proposed designation following detailed design.
54. The Requiring Authority is proposing to address the residual adverse effects through the use of predetermined offset ratios.
55. This requires the applicant to survey the actual impact sites, following detailed design, at a time reasonably prior to the physical impact. This allows the proposed process to address any positive or negative change in ecological value that may occur between designation and the adverse effect occurring.
56. Given the lapse date sought, it. The use of best practice and the re-survey of ecological values closer to the time of impact will address this.

57. The implementation of the activity is expected to be 10 to 15 years from designation. During this time, it is possible that best practice and accepted industry offsetting standards may change as well as scientific understanding of the ecology may improve, and standards of practice and mitigation may alter with newer understanding. This is recognised through the use of “best practice” and “any subsequent revision” terms in the recommended conditions.

Areas of impact

58. The extent of the impacts on native vegetation are limited to the indicative alignment, however, there appear to be minor discrepancies in the area measurements between that reported in Appendix H of the Ecological Assessment and those on the Construction Water plans provided. The S92 response - Part 2 indicates that soil disposal areas were not included in the assessment and that the scalability proposed through the conditions will be able to increase the quantum of the mitigation package if required. Recommendations to the conditions have included an upper threshold on the impact of ecological value areas.
59. The S92 response Part 2 and the associated updated Appendix H table indicate a total area of vegetation reclamation (excluding wetlands) as 11.03 ha, comprising 2.75 ha of ‘high’ – ‘very high’ value vegetation and 8.27 ha of ‘low’ – ‘moderate’ value vegetation (excluding wetlands). However, despite the S92 response for freshwater question 5d indicating the applicant considers the HN_T_Hoteo_03a to be a wetland with an area of 0.579 ha; this is not reflected in the revised Appendix H (of the EclA). Therefore, the areas of terrestrial vegetation removal should be reported as 2.17 ha of ‘high’ – ‘very high’ value terrestrial area (excluding wetlands) and 10.45 ha total terrestrial vegetation (excluding wetlands).

Outstanding matters:

Outcomes

60. The setting and determination of ecological outcomes is largely reliant on the conditions offered and whilst principles are proposed for the ecological outcomes, the outcomes are still to be determined. These outcomes are to be determined through Ecological Management Plans. To ensure these are acceptable, conditions are recommended requiring the certification of management plans by council.

61. Whilst there is reasonable speculation around the certainty of the “mitigation package” (discussed above) there is nothing to address the event that the effects management outcome does not work out as expected or as proposed. To this end, the management plans need to provide a framework to ensure that the management of effects through compensation, offsets and mitigation is achieved in full.
62. In the event that an adverse effect is not adequately addressed through the management plans, the remaining adverse effect(s) will still need to be managed. The management plans therefore need to contain sufficient detail and a framework to manage the uncertainty of the adverse effects management offered to ensure that appropriate offset and mitigation will occur.

Offset

63. The principles of the mitigation package [offset] for the project do not incorporate all the principles of the national guidance to offsetting. The management of effects provided as a “mitigation package” is not standard practice and does not provide any clarity that the effects will be managed to a level of no net loss or net gain.
64. There remains uncertainty as to the assessment of the offset for the adverse effects on ecology and there is no transparent ecological accounting indicating that the recognised adverse effects are addressed to a level of ‘no net loss’ in the offset.
65. Without transparent ecological accounting and uncertainty in the ecological outcomes, it remains uncertain that the offsets offered will achieve the outcomes intended in the principles offered.
66. The proposed ratio base for the offsets does not account for existing habitat and biodiversity at the offset site. Thus, there is no measure of overall gain in ecological biodiversity, habitat or functionality provided.
67. The offset achieving ‘like to like’ is expected to have similar species compositions and provide very similar habitats to those lost. The focus, indicated in S92 Response Part 2, on ecological function is not anticipated to achieve this.
68. Management required for offsets should, at a minimum, be continued for the duration of the impact of the development, which may be longer than the life of the

consent and, in the case of biodiversity loss for a highway, will be required in perpetuity⁸. This is not provided for in the Ecological Assessment.

69. For the reasons above, it is considered necessary to recommend conditions of consent that provide for a robust and transparent assessment and calculation of appropriate offset ratios following detailed design and prior to the adverse effects occurring. Furthermore, it is appropriate to recommend conditions allowing for the protection in perpetuity of the biodiversity/ecological offsets.

Monitoring

70. To achieve or sustain gains long-term requires a well-designed monitoring and reporting programme and an adaptive management approach to adjust maintenance and management actions as necessary.
71. It is considered necessary to recommend additional conditions to ensure a robust monitoring and adaptive management framework is implemented to ensure the proposed offsetting is implemented and established. Monitoring and reporting to Council is recommended in line with the maintenance period. This monitoring should include: performance targets and adaptive management measures should these not be met.

Hochstetters Frog

72. Hochstetters frogs remain classed as “At Risk – Declining” despite the grouping of all 11 populations into one taxon. These long lived, slow reproducing frogs are vulnerable to habitat loss, sedimentation, habitat fragmentation and introduced pest animals. The success of a translocation remains in doubt, with translocations of other New Zealand frog species known to have failed.
73. No suitable habitat has been identified to receive any Hochstetters frog translocations, and there is uncertainty if there is such habitat in the proposed designation. Any identified receiving site for translocations must be protected.
74. The population size and age class of frogs is critical to the long term viability of the population in any location and, as such, assurance must be provided that the receiving sites will have viable populations. Due to the longevity of the frogs and

⁸ Maseyk, F., Usser, G., Kessels, G., Christensen, M., Brown, M. (2018). Biodiversity Offsetting under the Resource Management Act: A guidance document.

low fecundity, failure of a translocation (population demographics) may not be apparent for a number of years.

75. It is reported that Matariki Forest has set aside a small area (1.5 ha) of remnant pines as a frog reserve that is protected from harvesting (DVF_T_Hōteo _01) although this site has no legal status as a reserve.
76. This site was not surveyed, although it is understood access was provided.
77. Hochstetters frog, being semi-aquatic, is not necessarily confined to stream bank environments. In the application material, map ES-021 “Herpetofauna Records” indicates 9 locations of Hochstetters frog and only three of these appear on or close to a stream. Hochstetters frog may be found some distance from or between streams in damp understory growth, rocky areas or leaf litter. For this reason, searches should not be confined to stream banks.
78. The road alignment through the Matariki and Dome Valley forest intersects at least four known sites of Hochstetters frog (Map ES-021), including the Matariki forest reserve. There are no other known sites within the proposed designation.
79. The loss of these known habitats (all being close to watercourses) and the lack of an identified translocation site provides uncertainty of the mitigation effectiveness. Consideration should be given to the retainment and protection of the Matariki Forest reserve during final design.
80. There is no certainty of the ability to translocate at risk frogs, and no translocation site is assessed or proposed. In addition, there is currently no known evidence that translocation of Hochstetters frogs has been successfully achieved. It is recommended that translocation and receiving habitat concerns are addressed or avoided during final design.

Realignment of forest tracks

81. The realignment of forest tracks due to the proposed development appears to impact identified ecological areas, however, these have not been included in the calculated impact area. Whilst it is indicated (S92 response Part 2) that they will be carried out in accordance with the NES-PF and AUP(OP), it is suggested that as the realignment is due to the proposed development and indicative alignment, that this should be included in this application.

Bridge impacts

82. The construction of an 8-pier split carriageway bridge over very high value ecological area is reported to not have “any loss of vegetation or any residual effects” (S92 response – Part 2). This appears to disregard the potential of vegetation clearing to access and build the bridge piers. Further, the assertion that there will only be minor rain shadow and shading effects is not supported with evidence. The Ecological Assessment considers the bridges will have an effect on aquatic life, but not terrestrial ecology.

Ability to offset potentially impacted ecology

83. The application material provides a sensitivity analysis on the level of effects, but not on the ability to offset these within the proposed designation, further, no assessment of what a ‘worst case scenario’ may entail or ability to offset this is provided.
84. The assessment provides for the activity to commence following the harvesting of the forest in the Dome Valley. Ecological impacts will be different if harvesting is not undertaken prior to the start of the activity. Further, the forest provides habitat prior to harvesting and subsequently following regrowth. The highway will permanently remove a portion of this habitat.

Conditions

85. The level of uncertainty regarding the actual quantum of residual adverse effects is exacerbated by terms such as ‘where practicable’ used throughout the application material, including the proposed conditions, particularly when coupled with measures to avoid adverse effects.
86. The uncertainty of the final alignment, as well as the use of imprecise wording in the proposed conditions undermines the ability to undertake an informed assessment of the actual and potential effects of the proposed activity. This has the potential to lead to unanticipated outcomes. Council require confidence that the actual effects will be in line with that presented in the application material.
87. It is the opinion of this Technical Assessment that it is appropriate to recommend conditions that provide more certainty on the limits of residual adverse effects; particularly in relation to the moderate, high, very high value, or otherwise sensitive locations, where avoidance of further adverse effects is recommended as part of

the application. Imposing such conditions would provide a further level of certainty and clarity in quantifying the positive effects and appropriately quantifying, managing the adverse ecological effects.

4.0 SUBMISSIONS

88. Twenty three submissions were received on the NoR of which nine have relate to matters covered by this Technical Assessment.
89. There appears to be a few broad ‘themes’ emanating from the submissions:
 - General comments relating to the inadequate assessment of effects on the ecology, with some suggesting it is insufficient or that sites have been missed.
 - General unease with a Management Plan approach and that this approach excludes further interaction with potentially affected parties and stakeholders.
 - Concern around specific threatened species and the ability to avoid or mitigate impacts on these.
 - The implementation of kauri dieback protocols
 - The adequacy of proposed conditions to manage effects, and that some effects are not addressed, such as dust on plants and fauna.
90. Some site-specific concerns were raised, however, these are likely to be accommodated through the implementation of the Management Plans following detailed design. None were considered by this assessment to require specific conditions.
91. Many of the concerns raised were similar to that already held by the reviewer and recommendations to the proposed conditions have been made that address these.
92. Comments and responses to particular submissions points are made in Appendix 1, where relevant.

5.0 CONDITIONS

93. The application material provides proposed conditions for the designation. Should designation be approved on the balance of outcomes, recommended amendments and additions to the proposed draft conditions have been suggested below. The recommendations are made to:
 - Provide consistency and corrections to errors.
 - Ensure that the avoidance, mitigation and offset offered by the applicant is implemented in full, as anticipated, and following best practice.

- Provide for outcomes recommended in this Technical Assessment.
 - Enable Council to certify Management Plans and outcomes were appropriate.
 - Provide clarity and certainty on measures against which Council can certify and monitor against.
94. These suggested amendments are summarised below with proposed additional text shown as underlined and proposed deletions shown ~~struck through~~.
95. Numbering from the draft conditions supplied as part of the application material has been used.
96. The designation conditions include matters that are authorised by resource consents. These conditions need to be transferred or duplicated in the consent conditions as they are not subject to a section 128 review.

Table 1: Management Plan Table

Management Plan	Decision Pathway	When to submit	Response time from Manager	Duration for implementation
Ecology	Outline Plan of Works	Prior to start of Project Works	Within statutory timeframes	As specified in the EMP
Biosecurity Plan	Outline Plan of Works	Prior to start of Construction <u>Project</u> Works	Within statutory timeframes	Duration of Project Works

Ecology

Ecological Outcomes

54. In designing and managing the construction, operation and maintenance of the Project, the Requiring Authority shall achieve the following:
- a. Limit encroachment of Project Works into all identified Ecological Sites where practicable to do so, and otherwise minimise impacts on such areas;
 - b. Protect Fauna and Avifauna from harm or mortality resulting from the Project, as far as practicable through:
 - i. adopting best practice capture and relocation protocols; and
 - ii. adopting best practice for lighting, dust and noise management
 - c. Restore, maintain or enhance ecology affected by the Project by designing and implementing restoration planting and habitat rehabilitation to:
 - i. Connect and enhance existing natural ecosystems;
 - ii. Establish ecological connectivity between the Mahurangi River (left branch) catchment and the Upper Kourawhero Stream catchment; ~~and~~
 - iii. Enhance Fauna and Avifauna habitat within the Mitigation Sites, the Fauna habitat and flyway mitigation area and other planting areas;

- iv. Provide restoration and protected habitats within the designation that are resilient through, minimising edge effects and other factors causing degradation; and
- v. Provide habitats that are protected and managed in perpetuity to maintain the ecological outcomes.

collectively referred to as the “Ecological Outcomes”.

55. At least 6 months prior to start project works, the Requiring Authority shall prepare an Ecology Management Plan to identify how the Ecological Outcomes will be met prior to the start of Project Works. The Plan shall be prepared by a Suitably Qualified and Experienced Person, shall be provided to Council for certification and shall include the following topic sections:

Ecological Outcomes

- a. ~~A general statement~~ Provide detail as to how the Project design and management of the construction of the Project will achieve the Ecological Outcomes. This shall include, but not be limited to:
- i. Defined ecological outcomes and performance measures and standards
 - ii. Provide ecological performance monitoring against standards
 - iii. Provide measures to address any shortfalls on expected ecological performance
 - iv. Revised areas of impact of ecological areas based on final design alignment
 - v. Revised ecological values of all sites within the designation
 - vi. Confirm the ecological areas that will be directly affected by the Project Works;
 - vii. Calculate the quantum and location of offset to be provided using best practice transparent and quantified offset accounting methods, ensuring that:
 - 1. The potential value of the impacted ecology (fauna and flora) is accounted for;
 - 2. The relative ecological gain at the proposed offset site is accounted for;
 - 3. An appropriate suite of ecological attributes are included in the offset accounting method; and
 - 4. Time lag is accounted for.
 - viii. Demonstrate that the proposed offset is like for like in regard to ecosystem type;
 - ix. Provide details of the ecological offset sites, the existing ecology of these and the enhancement values
 - x. Provide details of pest plant and animal management
 - xi. Provide for the implementation of best ecological practice
 - xii. Provide ongoing legal protection
 - xiii. Provide details of the maintenance of plantings for at least 5 years

Ecological Sites

- b. Recommended measures to be adopted to limit encroachment of Project Works into Ecological Sites including:
 - i. The steps taken to reduce the footprint of Project Works in such areas and documenting the reasons where it is not practicable to do so; and
 - ii. Measures to fence off or otherwise clearly demarcate such areas during Project Works to protect those sites from accidental damage during Project Works.
 - iii. Limiting impacts to 2.17 ha of high and vey high value ecological areas (excluding wetlands) and 8.27 ha of moderate and low value ecological areas (excluding wetlands).

Fauna habitat and flyway mitigation area

- c. The location and measures for the Fauna habitat and flyway mitigation area under conditions 58-61.

Restoration planting and habitat rehabilitation

- d. The locations and measures for restoration planting and habitat rehabilitation under conditions 62-65.

Fauna relocation protocols and sites

- e. The locations and measures for Fauna and Avifanua relocation under conditions 66-75.

- ~~56. The Suitably Qualified and Experienced Person shall prepare the Ecology Management Plan having regard to the following documents (or subsequent versions):~~
- ~~a. NZ Transport Agency Research report 224: Environmental protection measures on NZ state highway roading projects Volume 1: Reference guide to past practice; and~~
 - ~~b. NZ Transport Agency Research report 225: Environmental protection measures on NZ state highway roading projects Volume 2: Key issues & observations from the study.~~

57. In preparing the EMP and the relevant topic sections, the Requiring Authority shall consult with:
- a. Mana Whenua;
 - b. Auckland Council;
 - c. Department of Conservation; and
 - d. The owner of the commercial plantation forest (Mahurangi Forest) located west of SH1, with respect to ecological management activities which directly interface with forestry operations.
- ~~If the Requiring Authority has not received any comment from such parties within 20 Days of providing the EMP to them, the Requiring Authority may consider the relevant party has no comment.~~

Fauna habitat and flyway mitigation area

- 58. At least 6 months prior to the start of Construction Project Works the Requiring Authority shall provide a Fauna habitat and flyway mitigation area at the area identified on Map 13 if, ~~in the opinion of a Suitably Qualified and Experienced Person, the area is able to achieve the following outcomes:~~

- a. Provides a suitable ~~location~~ habitat for the relocation of some or all Fauna captured and relocated under conditions 66-75;
 - b. Maintains an east-west link across the Designation to allow for the movement of Fauna and dispersal of seeds;
 - c. Maintains a flyway for Avifauna and long-tailed bats to move across and along the Designation; and
 - d. Contains mature vegetation suitable for long-tailed bat roosts and bat and Avifauna breeding sites;
 - e. Provides maintenance plan that includes, but is not limited to, pest plant and animal control and enrichment planting
- referred to as the “Fauna habitat and flyway mitigation area outcomes”.

59. If, in the opinion of a Suitably Qualified and Experienced Person, the area identified on Map 13 will not achieve all the Fauna habitat and flyway mitigation area outcomes additional ~~an~~ alternative area(s) for mitigation shall be identified by a Suitably Qualified and Experienced Person within the Designation that will achieve those outcomes.

60. The Requiring Authority shall fence off (or otherwise clearly demarcated) the Fauna habitat and flyway mitigation area during Project Works from accidental damage during adjacent construction activities, apart from access for pest animal and pest plant management and restoration planting and habitat rehabilitation works.

61. The Requiring Authority shall include the location and measures for the Fauna habitat and flyway mitigation area in a topic section in the EMP.

Restoration planting and habitat rehabilitation

62. The Requiring Authority shall undertake restoration planting and habitat rehabilitation to mitigate, offset and compensate the effects of Project Works on areas of Ecological Value. using the following The quantum of mitigation, offset and/or compensation and its design and location shall be set out in the EMP and shall:

- a. Integrate the offset planting with the wetland restoration planting and habitat rehabilitation required under Consent Conditions where practicable; and
- b. Provide site specific enhancement plans for the proposed offset sites that:
 - i. Details how the anticipated outcomes used in the offset calculations will be achieved;
 - ii. Details the planting to be carried out, including a list of species, numbers to be planted, their common and botanical names, method of planting, planting locations, plant grades, planting densities and local sourcing of plants;
 - iii. Details the timing of works and techniques of weed and plant management measures for a period of no less than 5 years or until canopy closure is achieved;
 - iv. Details the works and techniques animal pest control for a period of no less than 5 years or until canopy closure is achieved;
 - v. Details of monitoring methods and frequency, including at a minimum annual reporting to Council for a period of no less than 5 years or until canopy closure is achieved; and

- vi. Is in accordance with AUP:OP Appendix 16: Guideline for native revegetation plantings.
- c. ~~replanting ratios as calculated by a Suitably Qualified and Experienced Person;~~
- d. ~~Ecological Site including Wetlands, mitigation shall be provided at a ratio of 6:1 of the area of impact;~~
- e. ~~Other sites of High to Very High Ecological Value, mitigation shall be provided at a ratio of 6:1 of the area of impact; and~~
- f. ~~For other areas of Ecological Value, mitigation shall be provided at a ratio of 3:1 of the area of impact.~~

63. The Requiring Authority shall provide the restoration planting and habitat rehabilitation at:

- a. Mitigation Sites;
- b. The Fauna habitat and flyway mitigation area;
- c. Fauna or Avifauna relocation sites established under conditions 67, 69, 71 and 73; and
- d. Other sites recommended by a Suitably Qualified and Experienced Person where there is insufficient area in areas (a)-(c) for the required restoration planting and habitat rehabilitation.

64. The Requiring Authority shall instruct a Suitably Qualified and Experienced Person to prepare a topic section to be included in the EMP describing and illustrating the proposed restoration planting and habitat restoration, that includes:

- a. ~~The calculations and related evidence for the replanting ratios area from condition 62;~~
- b. The locations for the restoration planting and habitat restoration;
- c. ~~A statement as to how the restoration planting and habitat restoration will achieve the Ecological Outcome at condition 54(c);~~
- d. ~~A planting schedule containing a mix of native plants including genetic sourcing of native plants from the Rodney Ecological District;~~
- e. Methods to ensure restoration planting and habitat rehabilitation is resilient and self-sustaining, including but not limited to monitoring, monitoring frequency, expected targets and a response plan should expected targets in the rehabilitation process not be met; and
- f. Proposed pest animal and pest plant management of restoration planting and habitat rehabilitation areas, including:
 - i. Timing and implementation;
 - ii. Methods for survey and monitoring to establish presence and abundance of pest animals and pest plants;
 - iii. Pest control methods;
 - iv. Performance monitoring;
 - v. Maintenance periods;
 - vi. Alignment with Pest Free 2050 programme.
- g. ~~A statement~~ Detail as to how any landscape planting to be established through a ULDMP or other Project planting has been integrated; and

- h. A statement as to how cultural values relating to restoration planting and habitat restoration identified through condition 16(f), have been acknowledged where feasible and practicable to do so.

65. The Requiring Authority shall:

- a. Complete the restoration planting and habitat rehabilitation in accordance with the EMP ULDMP's by no later than 5 2 years from the date of the Project becoming operational or as otherwise specified in these conditions.
- b. Commence restoration planting and habitat development for the translocation of species as soon as areas become available.
- c. Within 2 years of the Project becoming operational, apply a protection mechanism or covenant to all mitigation, offset or compensation enhancement works on the land.
 - i. The covenant shall:
 - 1. Secure the protection in perpetuity of mitigation, offsets and compensation.
 - 2. Protect the native vegetation within the covenant boundaries
 - 3. Require ongoing pest plant and pest animal control within the covenant boundaries
 - 4. Require ongoing maintenance and proper functioning of any fencing
 - 5. Ensure stock are excluded from within the covenant boundaries.
- d. Evidence of the in effect protection mechanism or covenant applied to all mitigation areas shall be provided to Council to secure compliance with this condition.

Long-tailed bats

- 66. The Requiring Authority shall engage a Suitably Qualified and Experienced Person to update the ecological assessment and to conduct long-tailed bat habitat and presence surveys within the Designation in the period of September-October immediately before construction of Project Works in areas where long-tailed bat may be impacted by Project Works.
- 67. In the event that the surveys confirm long-tailed bat habitat or presence, the Requiring Authoring shall:
 - a. Assess the impacts to, and avoidance of effects at a population level.
 - b. Instruct a Suitably Qualified and Experienced Person to undertake surveys of the relevant areas prior to Project Works to identify Active Roost Sites that may be affected

- by Project Works and to recommend vegetation clearance methods that will avoid injury or mortality of bats associated with Project Works around Active Roost Sites;
- c. Instruct a Suitably Qualified and Experienced Person to recommend methods to mitigate Project effects on long-tailed bat habitat through maintaining or enhancing long-tailed bat roost habitat and flyways in the Designation, having regard to Appendix D: Bat management framework for linear transport infrastructure projects of the Transport Agency research report 623 (Smith et al., 2017) ~~or~~ and any other best practice guide; and
- d. Provide a report on the surveys undertaken and the results and the Suitably Qualified and Experienced Person's recommendations in the relevant topic section of the EMP (to be certified by council).

Advice Note: capture and relocation of Avifauna will be carried out in accordance with a Wildlife Act Authority.

Avifauna

- 68. The Requiring Authority shall engage a Suitably Qualified and Experienced Person to update the ecological assessment and to conduct Avifauna habitat and presence surveys within the Designation prior to the start of Project Works in areas that may be impacted by Project Works. The Suitably Qualified and Experienced Person shall, in particular, survey wetland bird species (including banded rail, fernbird, Australasian bittern, marsh crake and spotless crake) in Wetlands WN_W_Koura_02 and WN_W_Koura_05 (refer Map 18) at the beginning of the bird breeding season prior to Project Works commencing in those locations.
- 69. In the event that the surveys confirm Avifauna habitat or presence, the Requiring Authoring shall;
 - a. Not undertake vegetation clearance of the relevant areas (excluding clearance of pasture) during breeding season, September to December inclusive of any year, unless a Suitably Qualified and Experienced Person confirms there are no nesting Avifauna likely to be impacted by Project Works;
 - b. In relation to wetland bird species (including banded rail, fernbird, Australasian bittern, marsh crake and spotless crake) in all impacted wetlands including WN_W_Koura_02 and WN_W_Koura_05 (refer Map 18) instruct a Suitably Qualified and Experienced Person to identify and implement best practice methods to capture and relocate these species prior to commencement of Project Works; and
 - c. provide a report on the surveys undertaken and the results and the Suitably Qualified and Experienced Person's recommendations in the relevant topic section of the EMP (to be certified by council).

Advice Note: capture and relocation of Avifauna will be carried out in accordance with a Wildlife Act Authority.

Land snails, copper skinks, forest geckos

- 70. The Requiring Authority shall engage a Suitably Qualified and Experienced Person to conduct habitat and presence surveys within the Designation prior to the start of

Project Works in areas that may be impacted by Project Works for the following species:

- a. All endemic macro land snails (*Amborhytida spp*, *Paryphanta spp* ~~etc. *dunni*~~);
- ~~b. other land snails [lan to confirm]~~
- c. all native skinks (eg. copper skink); and
- d. all native geckos (eg. forest gecko).

71. In the event that the surveys confirm the presence of any such species, the Requiring Authority shall:
- a. instruct a Suitably Qualified and Experienced Person to recommend best practice methods to capture and relocate the species to the Fauna habitat and flyway mitigation area or other suitable site with the required habitat, provided the site has been subject to predator control measures for at least six (6) months prior to the first transfer and will receive ongoing predator control ~~for three years after the last transfer~~;
 - b. undertake capture and relocation under the supervision of a Suitably Qualified and Experienced Person;
 - c. where practicable, relocate endemic macro land snails (~~*Amborhytida dunni*~~) along with their leaf-litter habitat;
 - d. Not relocate land snails captured within 30 metres of any kauri to a site within 30 metres of another kauri; and
 - e. Provide a report on the surveys undertaken and the results and the Suitably Qualified and Experienced Person's recommendations in the relevant topic section of the EMP.

Advice Note: land snail, copper skink and forest gecko capture and relocation will be carried out in accordance with a Wildlife Act Authority.

Hochstetter's frogs

72. The Requiring Authority shall engage a Suitably Qualified and Experienced Person to update the ecological assessment and conduct habitat and presence surveys within the Designation prior to the start of Project Works in all waterways and areas where suitable Hochstetter's frog (*Leiopelma* aff. *Hochstetteri*) habitat exists and may be impacted by Project Works.
73. In the event that the surveys confirm the presence of Hochstetter's frogs, the Requiring Authority shall:
- a. instruct a Suitably Qualified and Experienced Person to recommend best practice methods to capture and relocate frogs to a suitable site, including by:
 - i. applying the Department of Conservation document "Native frog hygiene and handling protocols" (DOCDM-214757) or any subsequent revision to reduce the potential for pathogen transmission and infection;
 - ii. using destructive searches during frog capture; and
 - iii. setting out post-release monitoring protocols to evaluate the success of the relocations and any further steps required to maintain and enhance the relocated populations.;~~and~~

- b. consult with the ~~Local Area~~ Operations Manager, Department of Conservation and any other recognised experts regarding the Suitably Qualified and Experienced Person's recommendations for capture and relocation of frogs;
- c. undertake capture and relocation under the supervision of a Suitably Qualified and Experienced Person;
- d. instruct a Suitably Qualified and Experienced Person to recommend methods to maintain or enhance Hochstetter's frog habitats within the Designation and any other relocation sites, including but not limited to measures to reduce stream sedimentation and pest animal control; and
- e. Provide a report on the surveys undertaken and the results and the Suitably Qualified and Experienced Person's recommendations in the relevant topic section of the EMP.

Advice Note: Hochstetter's frog capture and relocation will be carried out in accordance with a Wildlife Act Authority.

Reporting on salvage and relocation

74. The Requiring Authority shall report the results of capture and relocation programmes for Fauna and Avifauna to the ~~Manager~~ Council following implementation, including:
 - a. Location of any species salvaged;
 - b. Species types and numbers salvaged;
 - c. Where salvaged species have been relocated to;
 - d. Timing of salvage and relocations; and
 - e. Pest animal and pest plant management implemented, ~~if any~~.

At Risk or Threatened flora and fauna discovery protocol

75. In the event that a Suitably Qualified and Experienced Person discovers any At Risk or Threatened flora and fauna (as defined in the current version of the New Zealand Threat Classification System) within the Designation that is not covered by conditions 62-73, the Requiring Authority shall immediately notify the Local Area Manager, Department of Conservation and Council. The Requiring Authority shall have regard to any advice provided by the Department of Conservation in determining the appropriate course of action to be undertaken with respect to the discovered flora or fauna (e.g. further surveys, avoidance and/or capture and relocation).

Advice Note: The Requiring Authority will comply with all relevant provisions of the Wildlife Act 1953.

Biosecurity Plan

76. Prior to ~~Construction~~ Project Works commencing, the Requiring Authority shall prepare, in consultation with the ~~Local Area~~ Operations Manager, Department of Conservation a Biosecurity Plan. The kauri management aspects of the plan shall apply to all areas in the Designation within 3 times the radius of the canopy drip line of any New Zealand kauri. The purpose of the Biosecurity Plan is to set out the procedures to be used to prevent the introduction and/or spread of kauri dieback disease, and other biosecurity hazards such as Myrtle rust, Argentine ants and plague skink.

77. The Biosecurity Plan shall be prepared by a Suitably Qualified and Experienced Person to meet the purpose in Condition 76 and, as a minimum, shall:
- a. be consistent with “Hygiene Procedures for Kauri Dieback”, “Land disturbance activities (including earthworks) around kauri”, “Vehicle and Heavy Machinery Hygiene”, “Landfill Disposal of Contaminated Material” and “Procedures for Tree Removal and Pruning” and any other relevant guidelines published by the Ministry for Primary Industries Kauri Dieback Management Programme, or any subsequent revision which can be found at www.kauridieback.co.nz or copies can be obtained from Auckland Council;
 - b. contain measures that address the removal of any material (including soil) from within the “kauri contamination zone” and safe disposal thereof;
 - c. contain best practice biosecurity protocols to respond to any other identified biosecurity risk (e.g. Myrtle Rust) where required to do so by legislation; and
 - d. contain methods for updating the Biosecurity Plan in the event of significant changes in scientific knowledge relating to the effective management of kauri dieback or other biosecurity risks that occur after the plan is approved.

Infrastructure

The avoidance of adverse effects on ecological value through bridges and tunnels is to be maintained in the final design, including, but not limited to the extents of:

- a. the twin bore tunnel and associated flyway
- b. bridges 11 and 22

6.0 RECOMMENDATION

97. The above assessment is based on the information submitted as part of the application. Aspects of the application provide insufficient information to understand the scale of effect and the appropriateness of the proposed ‘effects management package’, including:
- a. A lack of transparent quantitative assessment to justify the proposed offset ratios. However, it may be possible to address this concern through the recommended condition requiring the quantum of offset to be calculated using best practice methods.
 - b. The ability to manage the adverse effects on fauna through translocation as successful translocation evidence supporting data is lacking.
 - c. The availability of suitable habitat for translocated fauna, particularly within the proposed designation.
 - d. Uncertainty as to whether the proposed ‘effects management package’ can be implemented within the proposed designation.
 - e. The uncertainty that the management of effects offered will be able to address the effects and ensure that appropriate and adequate mitigation and offset is achieved.

- f. Whilst there is reasonable identification of the ecological value of areas likely to be impacted, the overall approach to the assessment of the adverse effects and management thereof is fundamentally different from best practice and industry standards.
98. Should designation be approved on the balance of outcomes, recommended amendments and additions to the proposed draft conditions for the designation have been suggested to ensure that the mitigation and offset offered by the applicant is implemented in full and as anticipated.
99. Despite the above concerns, the level of assessment is considered to be sufficient to understand, at a board scale, the ecological values and likely adverse effects across the project with the compounding issue of only being presented with an indicative alignment. However, it does place additional importance on robust assessment following detailed design, the clear understanding of the level of adverse effects and the required quantum of offset prior to the adverse effects occurring.

7.0 REVIEW

Memo reviewed by:

Date:

Appendix 1.

Submission Point	Technical Assessment Response (with consideration of matters addressed by this Technical Assessment)
#4 Royal Forest and Bird (joint submission with consents) Opposes the NoR in whole or in part	
<p>4.1 Hochstetter's frogs; Survey work has not been done on every waterway for Hochstetter's presence. The Ecology Report says that management of Hochstetter's will need to apply to every waterway that is suitable Hochstetter's habitat.</p> <p>4.2 Threat status of 'At risk - Declining' would suggest that any disturbance, including the proposed relocation, would add further risk to the survival of these frogs.</p> <p>4.3 submitter requests applicant to work together with the forestry block owner to mitigate any losses of the frogs through harvesting. Presumably if the forests were replanted then the frogs may return to their pre-harvest numbers. This may not be the case with a highway.</p>	<p>Support submission</p> <p>Concerns are similar to that of Council and conditions are proposed to address loss of frog habitat and translocation concerns.</p>
<p>5.1 Avoidance alone does not achieve objective B7.2.1 Objective (2) which sets out to maintain indigenous biodiversity through protection, restoration and enhancement in areas where ecological values are degraded, or where development is occurring.</p>	Neutral on submission
<p>6.1 Forest & Bird has serious concerns about any mitigation hierarchy measure being set out in the NOR conditions rather than through the resource consent conditions. This is because in order to change an Outline Plan of Works if the requiring authority is unwilling to do so the Council must lodge an appeal.</p>	<p>Support submission</p> <p>Provided comments and conditions in this regard</p>

7.2 The proposal has split the conditions between the Notice of Requirement and the resource consent application.	
6.2 NOR conditions are vague in terms of the mitigation for threatened species.	Support submission Provided comments and conditions in this regard
6.3 More work is required to establish a baseline of understanding as to what biodiversity exists and how best to protect significant indigenous biodiversity. 7.8 The ongoing ecological monitoring proposed by the applicant are not adequate to ensure that the benefits of the offset and compensation package will be achieved and sustained.	Support submission Provided comments and conditions in this regard
7.4 The management plan approach taken is particularly fraught. Specific conditions need to be included which management plans can implement and be measures against for compliance purposes. 7.5 Draft management plans should be incorporated into the general condition 1 7.7 Amend conditions for amendment and certification of management plans.	Support submission Provided comments and conditions in this regard
# 6 David Mason and Dianne McCallum Opposes the NoR in whole or in part	
There is significant concern that the future Designation and Outline Plan of Works will rely on Management Plans that have not had adequate assessment of effects within the application process.	Support submission: Recommendations have been made to the proposed conditions to provide council the ability to certify Management Plans along with providing more clarity on the matters to be included in Management Plans.

<p>7. Incorrect Site Assessment WN_T_Mahu_02</p> <p>Assessment is incorrect at least with regard the western portion of this block. It contains a mix of kauri, rimu, kahikatea, totora trees maybe 20-25m tall with DBH mostly in the range 40-100cm.</p> <p>Over the last couple of years, we have frequently heard and sometimes sighted kaka in the morning and evening in this block and the tall trees immediately west.</p>	<p>Support submission</p> <p>Full ecological survey has not been able to be undertaken on all sites of native vegetation and the conditions proposed include an update of existing ecological data. It is understood the main limitation leading to the limited representative ecological survey was land access. Following land acquisition, a more thorough assessment should be possible.</p> <p>Recommendations have been made to the proposed conditions to have the assessment of impacted watercourses and wetlands certified by Council.</p>
<p>Incorrect Site Assessment WN_T_Mahu_03</p>	<p>Neutral on submission</p> <p>It is understood the main limitation leading to the limited representative ecological survey was land access. Following land acquisition, a more thorough assessment should be possible.</p> <p>Recommendations have been made to the proposed conditions to have the assessment of impacted watercourses and wetlands certified by Council..</p>
<p>There is an unidentified wetland located in the northern portion of the "Jackson" property at 83 Carran Road. This wetland adjoins WN_T_Mahu_02.</p>	<p>Neutral on submission:</p> <p>It is possible some wetlands have been missed in the applicants limited representative ecological assessment, however, conditions are recommended to ensure a full survey prior to construction after detailed design.</p>
<p>....it is incorrect to state that the project has had proper regard for significant indigenous vegetation.</p>	<p>Neutral on submission:</p> <p>A review of the applicants identified indigenous vegetation areas corresponds closely with other databases.</p>

<p>The bird count at WN_T_Mahu_02 (column ARD15) identifies five species of which only three are native. This falls vastly short of what we experience. On a daily basis we see (or hear) amongst others fantails, moreporks, pukeko, harriers, paradise shelducks, tui, kereru, kaka, silver eye, grey warblers, swallows and kingfishers along with a wide range of introduced species.</p>	<p>Neutral on submission:</p> <p>The bird survey techniques do not capture all species, or seasonal species.</p>
<p>We are concerned about the absence of detail around the recommended pre-construction ecological surveys and assessments for two reasons: the potential for flaws similar to those identified in the initial survey and the extent to which assessment results would be used to inform the final design (especially the alignment).</p>	<p>Neutral on submission:</p> <p>It is understood the main limitation leading to the limited representative ecological survey was land access. Following land acquisition, a more thorough assessment should be possible.</p> <p>Recommendations have been made to the proposed conditions to have the assessment of impacted watercourses and wetlands certified by Council.</p>
<p>Mitigation planting is the predominant mechanism to make good the projects adverse ecological effects. We have several concerns with this approach:</p> <ul style="list-style-type: none"> • By setting a 3:1 or 6:1 replanting ratio, instead of making an RMA based decision the contractor simply establishes the costs and benefits of replanting vs the alternative. • It does not make any sense to equate mature bush with new plantings. 	<p>Support submission:</p> <p>The applicant has not provided a transparent and quantified assessment to justify the proposed offset ratios or demonstrate a no-net-loss of ecological value outcome. Whilst the offset ratios may be similar to other developments, the locations are different. Recommendations have been made in this regard.</p>
<p>It is inappropriate to have a weed and pest control program solely to assist the establishment of plantings and then walk away. Doing so merely creates an environment in which the pests can thrive once control ceases. And it does nothing to address the long-term threat caused by the road becoming a pest highway. These programs should be in perpetuity and cover existing bush and wetlands and both</p>	<p>Support submission:</p> <p>Recommendations have been made to the proposed conditions to ensure offset sites are protected in perpetuity with a requirement for ongoing pest plant and animal control.</p>

mitigation and landscape planting.	
<p>Disturbance from light and noise during operational phase has no discussion of this, and no mitigation sought (despite some options being available).</p> <p>Require Conditions are required that</p> <ul style="list-style-type: none"> • Require street lighting (or whatever its called on motorways) to follow the Dark Sky standards for street lighting including minimising light-spill • Require that all road side and gantry lighting be not more than 3,000oK and 2,700oK where practicable. (i.e. the LED “warm” white or cooler). 	<p>Support submission:</p> <p>Recommendations have been made to the proposed conditions to ensure this is minimised, however this should be a component of the overall design.</p>
<p>The proposed weed and pest control is only for five years after plantings and then only for mitigation (and not landscape) plantings.</p> <p>Neither the AEE nor the Assessment has referenced the Government’s Pest Free 2050 program. By not considering that program the result is that different parts of Government are pulling in different directions with regard pest control</p>	<p>Neutral on submission</p> <p>Recommendations have been made to the proposed conditions to improve pest management on offset sites.</p>
<p>This submission identifies a range of such qualified conditions (using “where practicable”, “if practicable”, “Best Practicable Option” etc) and where considered appropriate asks for them to be removed.</p>	<p>Support submission</p> <p>Use of such language is noted in this Technical Assessment and recommendations have been made to the proposed conditions to remove this language where appropriate. It is also noted that <i>Best Practicable Option</i> is a term used in the RMA.</p>
<p>There is kauri die-back in the Mahurangi River area,To facilitate proactive management of infestations, the kauri dieback protocols need to include accurate mapping and monitoring of all nearby kauri (to the extent allowed by private landowners)</p>	<p>Support submission</p> <p>Recommendations have been made to the proposed conditions to ensure this outcome, with the wording proposed by the kauri dieback team.</p>

Proposes that the same condition is used as was in the Matakana Link Road conditions.	
Air Quality Assessment briefly identifies on page 36 some effects of dust deposition on flora and fauna and states that dust effects are discussed in the Ecology report. But cannot find any reference in that report beyond the effect of dust in streams	Support submission Recommendations have been made to the proposed conditions to ensure this outcome
<i>Removal of indigenous vegetation that impacts on fauna (bats, snails, lizards, birds) from loss of habitat, construction activities and creation of edge effects Scale of Effect with mitigation: Minor</i> This is misleading. 13ha native vegetation is planned to be removed, the impact of dust and noise (construction and operational) on fauna is not assessed and edge effects are not assessed	Support submission Recommendations have been made to the proposed conditions to ensure this outcome
Add a condition(s) requiring pre-construction ecological surveys that: Include a walk-over of the entire Designation to identify all native bush and wetlands Identify any nationally or regionally threatened species of flora and fauna. Establish the current ecological value of all native bush and wetlands in accordance with the EIANZ Guidelines	Support submission Recommendations have been made to the proposed conditions to ensure this outcome
Add a condition that requires the results of the bush and wetland survey to be considered in the final Project design [...]	Support submission This adheres to the effects management hierarchy whereby priority should be given to avoiding adverse effects
Replace Condition 54.a with a condition that requires that Project (both temporary and permanent) avoids encroachment into any areas of native bush and wetlands unless	Neutral on submission: It is expected that linear activities will impact native vegetation at some point.

<p>no feasible alternative solution exists.</p> <p>Where encroachment is unavoidable, add conditions that require that</p> <ul style="list-style-type: none"> • encroachment is minimised to the extent feasible, • walls must be used as the first line of defence in minimising the encroachment • the construction of any walls be done in a manner that avoids any need to temporarily encroach (Note: This means building the wall exclusively from the alignment side) 	<p>Complete avoidance is not always possible. The conditions provide for this to be minimal and offset where it cannot be avoided or mitigated.</p>
<p>Condition 55.b.</p> <ul style="list-style-type: none"> • Replace the concept of recommended measures with mandatory measures • Add requirement to use walls instead of batters where batters would have an adverse ecological effect. 	<p>Neutral on submission:</p> <p>The conditions provide some limitation and a recommendation is provided to have an overall limit.</p>
<p>Condition 64</p> <p><i>f. Proposed pest animal and pest plant management of restoration planting and habitat rehabilitation areas, including:</i></p> <p><i>i. Timing and implementation;</i></p> <p>...</p> <p><i>v. Maintenance periods</i></p> <ul style="list-style-type: none"> • Change point 64.f.i to establish that timing starts 3 months after the time that access is provided to each site. 	<p>Support some of submission</p> <p>Timing of restoration/offset planting and protection of offset sites are part of the recommended conditions</p>

<ul style="list-style-type: none"> Change 64.f.v to require maintenance in perpetuity 	
<p><i>Condition 70</i></p> <p><i>The Requiring Authority shall engage a Suitably Qualified and Experienced Person to conduct habitat and presence surveys within the Designation prior to the start of Project Works in areas that may be impacted by Project Works for the following species:</i></p> <ul style="list-style-type: none"> <i>a. land snail (Ambothyrida dunniae);</i> <i>b. other land snails [lan to confirm]</i> <i>c. copper skink; and</i> <i>d. forest gecko</i> <p>This does not appear to protect kauri snails. And the kauri snail should be referred to by its common name (as this condition does for the skink and gecko).</p>	<p>Oppose submission:</p> <p>The conditions provide for other snails.</p>
<p>Add a condition whereby the Requiring Authority is required to design the project in a manner that minimises the amount of the bush block identified as WN_T_Mahu_02 requiring removal - especially the mature bush in the western portion. The Requiring Authority is to document the proposed impact and its reasoning (including all options considered) and submit to a Commissioner for approval. No work may proceed until approval is given.</p>	<p>Oppose submission:</p> <p>The extent of clearance is addressed by conditions</p>
<p>Add a condition requiring the all of the bush block identified as WN_T_MAHU_03 is to be protected.</p>	<p>Neutral on submission:</p> <p>The extent of clearance is addressed by conditions</p>

<p>Add a condition requiring that corridor planting be provided between the western remnant of block WN_T_Mahu_02 and block WN_T_Mahu_03.</p>	<p>Neutral on submission:</p> <p>Some replanting in that area is already proposed.</p>
<p>Add a condition that requires the results of the bush and wetland survey to be considered in the final Project design and -</p> <ul style="list-style-type: none"> • That the final design avoids to the extent feasible any losses of native bush and wetlands, and where not feasible minimises the ecological value of the losses (Note: This is intended to recognise that a smaller amount of high value bush can exceed the value of a larger amount of low value bush) • That a report be provided that discusses all factors that form part of the final design including the analysis of all alternative bush and/or wetland options considered in the previous sub-condition. • The report submitted to a commissioner for approval before any Project works start. 	<p>Neutral on submission:</p> <p>The conditions address this through Management Plans</p>
<p>#8 Amanda and Erdem Oguz Opposes the NoR</p>	
<p>The proposed conditions favour the delivery of the project over the environment and affected parties. They are not robust enough to identify all adverse effects with certainty or ensure that the adverse effects will be adequately and fairly mitigated, proactively monitored and remedied.</p> <p>There is no degree of certainty whether predictions and are accurate, reliable or whether proposed mitigations are adequate.</p>	<p>Neutral on submission:</p> <p>The application and recommended conditions of consent outline a suitable process to identify impacted streams and wetlands following detailed design, and then mitigate and offset any adverse effects.</p> <p>Further recommended conditions have been provided to set limits to the extent of adverse effects on ecology.</p>

	Uncertainty in the assessment of effects is noted within this Technical Assessment
Publish detailed Management Plans prior to Resource Consent being approved.	<p>Neutral on submission:</p> <p>Finalised Management Plans may be difficult to develop based on an indicative alignment. However, draft Management Plans would be beneficial to demonstrate structure and anticipated material for which Council can certify the final plans against.</p>
Due to the fact there are critically endangered kahikatea bush on the proposed route south of the tunnels by Kaipara Flats Road, we would be in favour of pushing the alignment east to minimise the impact on this section of bush.	<p>Neutral on submission:</p> <p>This section of the indicative alignment is constrained by the Mahurangi left branch to the east and the headwaters of the Kourawhera stream to the west.</p> <p>The EclA notes: the movement of the alignment eastward will result in the Indicative Alignment coming closer to the high-value Mahurangi River (Left Branch) and may intrude into the riparian zone of the River.</p>
#9 Friends of Streamlands Opposes the NOR	
The proposed conditions favour the delivery of the project over the environment and affected parties. They are not robust enough to ensure that the adverse effects will be adequately mitigated and remedied	<p>Neutral on submission:</p> <p>The application and recommended conditions of consent outline a suitable process to identify impacted streams and wetlands following detailed design, and then mitigate and offset any adverse effects.</p>
Require the Authority to include in the application the various management plans so that an assessment of how the project will be delivered to meet the environmental objectives can be assessed.	<p>Neutral on submission:</p> <p>Finalised Management Plans may be difficult to develop based on an indicative alignment. However, draft Management Plans would be beneficial to demonstrate structure and anticipated material for which Council can certify the final plans against</p>

<p>#10 Angela and Geoffrey Still Opposes the NOR</p>	
<p>This application relies heavily on Management Plans which give no certainty Management plans are not robust enough</p>	<p>Support submission: Recommendations have been made to the proposed conditions to provide council the ability to certify Management Plans along with providing more clarity on the matters to be included in Management Plans.</p>
<p>#13 Wendy Patricia Court Opposes the NOR</p> <p>This application relies heavily on Management Plans which give no certainty. These plans can be changed at any time. [...] Management plans are not robust enough. The long lead in time provides adequate time to get a more definite plan consented, which does not rely so heavily on Management Plans, thereby giving certainty to all. The RMA requires stakeholder input, however, this application offers no encouragement for stakeholder input or review, prior to lodgement.</p>	<p>Support submission Recommendations have been made to improve Management Plan outcomes and certainty, however these plans will likely not have community oversight in their development.</p>
<p>#15 & #16 Denise Civil Opposes the NOR</p>	
<p>The Warkworth interchange will have adverse effects on the environment</p>	<p>Neutral on submission: The site is also that for aggregated offset.</p>
<p>The proposed alignment does not avoid adverse effects</p>	<p>Neutral on submission: It is expected that linear activities will impact native vegetation at some point.</p>

	Complete avoidance is not always possible. The conditions provide for this to be minimal and offset where it cannot be avoided or mitigated
The application does not address effects on flora and fauna	Dismiss submission The application does consider effects on flora and fauna
Proposes a condition that Requires the Authority to submit the proposed management plans as part of this application so that they can be assessed by the Council and stakeholders at this stage of the process.	Neutral on submission: That would be ideal, however there is no obligation for the applicant to do this.
#20 DOC (joint submission with consents) Opposes NoR or seeks concerns addressed	
12. Treating the existing environment in the Matariki forest section of the new highway in its post-harvest state creates an artificially low baseline. In the absence of a new highway designation, the forest would be replanted and the impacts of harvesting would be temporary on a time scale of about 10 years. The ecological values of a re-growing plantation forest will be permanently lost on the footprint of the new highway, and should be factored into the required mitigation of the highway.	Support submission Recommendations have been made to the proposed conditions to support this outcome
14. The ecological impacts that DOC is most concerned about include: c. destruction of terrestrial and wetland habitat, and the relocation of fauna d. effects on bats, frogs, birds, herpetofauna and invertebrates e. kauri dieback and other biosecurity risks	Support submission Recommendations have been made to the proposed conditions to address this.
15. Another aspect of the application that is of concern is related to the long time interval before the consents will be exercised. This has limited the extent to which	Support submission

accurate baseline surveys of the existing environment can be completed before consent is granted. It has created a particularly heavy reliance on management plans to identify, then mitigate, effects.	Recommendations have been made to the proposed conditions to address this.
30. I support the ratios proposed for mitigating loss of indigenous vegetation (6:1 and 3:1) but request that mitigation also be provided for the lost habitat values of the plantation forest.	Oppose submission: The applicant has not provided a transparent and quantified assessment to justify the proposed offset ratios or demonstrate a no-net-loss of ecological value outcome..
31. Areas being planted or enhanced for mitigation purposes should be protected by legal mechanisms such as QEII covenants and fenced to a stock exclusion standard. The plantings should be managed and maintained for a period of at least 5 years to ensure their survival, and any failure during this period (such as due to drought) be replanted.	Support submission Recommendations have been made to the proposed conditions to ensure this outcome
32. While the full scale of mitigation work required will not be known until the final alignment is confirmed and ecological surveys have been completed, we would encourage the applicant to commence ecological planting and rehabilitation work early so that suitable habitat for relocating fauna becomes available, and more suitable, during the course of construction. It is likely that existing suitable habitat for relocating fauna will already be occupied, so it will be necessary to establish new habitat for relocated fauna and carry out pest control in these areas. 36. It is acknowledged that the detailed baseline ecological assessment must be done closer to the time of construction, and once the final alignment has been confirmed, but this means that the current assessment of ecological effects is to some degree speculative and based on a hopefully representative sample. As the full details of effects will not be known until long after consent has been granted, the extent and	Support submission Recommendations have been made to improve Management Plan outcomes and certainty; however, these plans will likely not have community involvement in their development.

<p>degree of mitigation, offsetting and compensation required will also not be known until then.</p> <p>37. Essentially the panel is being asked to approve an application without knowing the potential effects to the degree of certainty normally required, and to then rely on the degree of mitigation and offsetting being determined later. It will be assumed that the level of mitigation, offsetting and compensation will be scaled up as necessary once the extent and intensity of adverse effects becomes apparent.</p> <p>38. This has resulted in a heavy reliance on a management plan approach in the proposed conditions. This is not ideal as management plans can only be certified as complete, and does not allow for major changes to the proposal if effects are found to be unacceptable.</p>	
<p>39. Several conditions use the phrase “minimising” and “to the extent practicable”. These are good principles to operate by, but are subjective and do not provide a meaningful performance standard. More objective conditions should be set for the management plans and monitoring where possible.</p>	<p>Support submission</p> <p>Recommendations have been made to the proposed conditions to address this.</p>
<p>42. The process for certification of management plans should provide the ability for Council to seek amendments to the plan and obtain an independent peer review. Conditions should include a process for auditing and reviewing plans, and time-bound steps to follow if a threshold is exceeded and additional mitigation is required.</p>	<p>Support submission</p> <p>Recommendations have been made to the proposed conditions to address this.</p>
<p>43. The proposed ‘deeming’ of a management plan to be certified if no response is received from Council within 20 days is unacceptable and would compromise the integrity of the management plan approach that this proposal relies so heavily on.</p>	<p>Support submission</p> <p>Recommendations have been made to the proposed conditions to remove this.</p>

<p>Seeks the following conditions:</p> <p>i. Additional information is to be provided by the Applicant to address the matters outlined in this submission;</p> <p>ii. Suitable consent and designation conditions to ensure the concerns outlined in this submission are adequately and appropriately addressed (including setting of environmental standards and triggers, monitoring measures, preferred methodologies and contingencies for failure to meet standards);</p> <p>iii. A comprehensive approach to managing the effects of the proposed construction and operation of the highway, prioritising measures to avoid, remedy then mitigate adverse effects, and, where there are residual effects, offsetting or (when offsetting cannot be achieved) environmental compensation;</p> <p>iv. Suitable review conditions to require as a condition precedent to the commencement of construction that: (a) baseline surveys be completed at the appropriate time to the required standard; and (b) the conditions be reviewed once the baseline surveys have been completed;</p> <p><i>Details on proposed retention and amendment of conditions provided.</i></p>	<p>Support submission</p> <p>Recommendations have been made to proposed conditions that address many of the concerns raised.</p>
<p>#23 Dando Family Trust</p> <p><i>Opposes the NOR</i></p> <p>We have significant concerns about the impact of the construction on the waterways, flora and fauna both on our property and on the area as a whole. As stated above, we have invested significant efforts into re-establishing native trees and birds on our property</p>	<p>Neutral on Submission</p> <p>The designation appears to only marginally encroach on the property 39 Philips Road with not streams or wetlands on this property impacted.</p>

	The application and recommended conditions of consent outline a process to identify impacted ecology following detailed design, and then mitigate and offset any adverse effects
In addition to the negative impact on the welcome native wildlife, we are concerned that the construction of the motorway will disrupt the habitat of mice, rats and other pests, increasing the risk of them invading our house.	Neutral on Submission The offset areas will be managed to include pest plants and animals.

Warkworth to Wellsford Project – Air Quality Assessment

To:

Nicola Holmes, Principal Planner – Resource Consents;
Wayne Siu, Planner – Plans & Places

From:

Paul Crimmins, Senior Specialist – Contamination, Air & Noise

Date:

21 August 2020

1 Application details

Applicant's name:

Waka Kotahi – New Zealand Transport Agency

Application number:

BUN60354951 (Air discharge: DIS60355186)

Application purpose description:

Notice of Requirement to amend the Unitary Plan and associated Regional Resource Consents to enable the construction, operation and maintenance for a new four lane state highway from Warkworth to Wellsford (Te Hana).

Activity considered:

Discharge of contaminants into air

Site address:

Multiple sites located between Warkworth and Te Hana, Rodney

2 Introduction: Air quality assessment

2.1 Scope of air quality assessment

As requested, I have reviewed the above Notice of Requirement (NoR) and Resource Consent (RC) application, relevant supporting information, and submissions received, on behalf of Auckland Council in relation to air quality effects.

This review pertains to the actual and potential effects arising from discharges of contaminants into air from the construction and operation of the proposed Ara Tūhono: Warkworth to Wellsford (WW2W) motorway. The air discharges considered by this review are limited to discharges of dust from construction works, and discharges of hazardous air pollutants (with potential human health effects) from vehicles using the future road.

With respect to greenhouse gas emissions from vehicles using the future road, section 104E of the Resource Management Act 1991 (RMA) specifically prohibits an assessment of climate change effects arising from an application to discharge contaminants into air. Currently, climate change effects are addressed at the national level as directed by the *Resource Management (Energy & Climate Change) Amendment Act 2004*.

The *RMA Amendment Bill 2019* passed its third reading in April 2020 and shall repeal section 104E of the RMA from 31 December 2021, so that resource consent applications lodged after this date may have greenhouse gas emissions assessed as an environmental effect with respect to National Emissions Reduction Plans. However, the transition measures detailed in Clause 26 of Schedule 12 of the 2019 Amendment apply to this application; I have therefore assessed the application without further consideration of greenhouse gas emissions and associated climate change effects.

2.2 Material reviewed

I have reviewed the following documents received as part of the application:

- *Assessment of Effects on the Environment: Warkworth to Wellsford Project*, prepared by the Jacobs GHD Joint Venture, dated March 2020 ('the AEE');
- *Warkworth to Wellsford: Air Quality Assessment*, prepared by the Jacobs GHD Joint Venture, dated March 2020 ('the AQ Report');

I have also reviewed all submissions received that are relevant to air quality effects.

2.3 Reviewer information: Qualifications and experience

My full name is Paul Edward Crimmins and I am employed as a Senior Specialist within the Contamination, Air & Noise Team of Auckland Council's Specialist Unit at Graham Street, Auckland Central.

I have been employed in this role since a restructure in October 2017 and in a similar Senior Specialist role since February 2013. Prior to this I was employed as a Consents and Compliance Advisor by Auckland Council and as an Environmental Scientist with Beca Limited. I have over ten years' experience in air quality assessments (human health and amenity effects).

I hold a Master of Science (First Class Honours) in Environmental Science from the University of Auckland (2018), and a BSc (Environmental Science) and BA (Politics) from the University of Auckland (2009). I am a member of the Clean Air Society of Auckland and New Zealand (CASANZ).

I have been involved with consenting and compliance for numerous air discharge permits throughout the Auckland Region over the past decade. Some examples include:

- Industrial air discharges (including NZ Steel, Pacific Steel, O-I Glass, Winstone Wallboards, Tasman Insulation, Southdown Power Station, Industrial Processors, numerous asphalt plants);
- Construction projects (including City Rail Link, America's Cup Wynyard Quarter works, Waterview Tunnel, Northern Expressway Extensions, East-West Link);
- Waste facilities (including Whitford Landfill, Redvale Landfill; Mangere Wastewater Treatment Plant and biosolids fill; hazardous waste treatment facilities at Neales Rd, Miami Pde and Stonedon Dr; numerous refuse transfer stations).

3 Proposal: Air quality

3.1 Proposal as relevant to air quality

The applicant, Waka Kotahi – New Zealand Transport Agency (NZTA), is seeking an NoR and RCs to designate, construct and operate a 26 km four-lane highway between Warkworth and Te Hana, Rodney, to replace the existing SH1 Dome Valley alignment.. A full description of the application is provided in the AEE.

Particularly relevant to air quality:

- The proposed designation covers an area of approximately 1348 ha, within which it is proposed to design a four-lane highway for later construction.
- Construction shall involve bulk earthworks, in the order of 12.4 Mm³ cut and 9.6 Mm³ fill over 310 ha. Construction is expected to occur after 2030 and take approximately 7 years to complete. Construction discharge consents are sought for a 15 year duration with a 15 year lapse date.
- Section 4.2 of the AQ Report identifies 64 'High Sensitivity Receptors' (HSRs, defined as dwellings) within 200 m of the designation boundary (including one HSR within the designation).
- A mobile rock crusher is proposed to be utilised to process excavated rock for on-site use as aggregate. The crusher is anticipated to have a processing capacity of 300 tonnes/hour.
- The indicative alignment includes a twin-bored tunnel, approximately 850 m long, below Kraack Road.
- It is predicted that 20,000 vehicles per day shall use the highway in 2036, increasing to 25,000 vehicles per day a decade later. Most of these predicted vehicle movements are offset by predicted decreases in traffic volumes on the existing SH1.

4 Reasons for application: Air discharges

4.1 Reason for application: Air discharges

Resource Consent is required for air discharges from the WW2W construction works under the provisions of the AUP(OP), Chapter E14 Air Quality:

Rule E14.4.1: Discharge of contaminants into air from dust generating processes

(A83): Earthworks and the construction, maintenance and repair of public roads and railways not meeting the general permitted activity standards [Restricted Discretionary Activity in all zones].

(A94): Crushing of concrete, masonry products, minerals, ores and/or aggregates (not associated with quarrying activities) at a rate:
– *greater than 60 tonnes/hour; or*
– *up to 60 tonnes/hour and not meeting permitted activity standards [Restricted Discretionary Activity in Rural zones].*

The scale of the earthworks are significant, to such a point that without management measures in place, compliance with the general permitted activity standards (E14.6.1.1) is not assured. Particularly, I consider there is a significant risk of offensive or objectionable dust effects arising at HSRs due to dust discharges from the large-scale earthworks that may not comply with standard E14.6.1.1(2).

This risk is highlighted in section 9.9.4 of the AEE:

Based on the potential number of HSRs that may be affected by construction dust, the effects of construction on air quality is assessed as being potentially significant and mitigation is recommended.

Therefore, I consider that a Restricted Discretionary Activity air discharge consent is required for the WW2W Project under Rule E14.4.1(A83). This is a similar approach to that taken for other significant construction projects with a high risk of dust effects, such as the Waterview Tunnel project and City Rail Link.

An air discharge consent is also triggered by the proposed use of a rock crusher with a crushing capacity greater than 60 tonnes/hour. This is a Restricted Discretionary Activity in rural zones (where it is proposed to utilise the crusher) under Rule E14.4.1(A94).

The applicable Restricted Discretionary Standards are provided in E14.6.3.4(3), matters of discretion in E14.8.1(1 & 6) and assessment criteria in E14.8.2.

The AQ Report raises E14.4.1(A90) (air discharges from a mineral extraction activity) as a reason for consent and not E14.4.1(A83). I consider the applicable rules are

E14.4.1(A83 & A94) and note that no ‘mineral extraction activities’ (defined by the AUP(OP) as ‘activities carried out at a quarry’) are proposed.

4.2 Notable permitted activities: Air discharges

Diesel and petrol-powered vehicles at the construction site and using the future road shall emit a range of hazardous air pollutants as part of their engine exhaust emissions.

Rule E14.4.1(A114) of the AUP(OP) states that engine emissions are a Permitted Activity without standards whether on- or off-road, given that exhaust emissions are regulated at a national level.

Non-exhaust emissions, most-notably dust discharged from vehicle movements across unsealed surfaces during the construction phase, are not permitted by this rule and are assessed as part of the above Restricted Discretionary air discharge consent.

While exhaust emissions are permitted by Rule E14.4.1(A114) without standards, I consider that the higher-order *Resource Management (National Environmental Standards for Air Quality) Regulations 2004* ([NES:AQ](#)) must be achieved. Therefore, the AQ Report has included an assessment to demonstrate that vehicle exhaust emissions using the road shall not cause an exceedance of the NES:AQ Ambient Air Quality Standards at any location where people are likely to be exposed. This assessment is briefly reviewed in section 5.3.3 below.

Section 3.5 of the AQ Report details a Permitted Activity assessment for air discharges from the proposed 850 m Kraack Road underpass tunnel against the provisions of AUP(OP) Rule E14.4.1(A116) and Permitted Activity Standard E14.6.1.18. This assessment concludes that the tunnel is a ‘low risk’ for air quality effects, particularly given the low number of HSRs in close proximity to the tunnel and low background (existing) air quality in the area. Therefore, **air discharges from the tunnel are a Permitted Activity under Rule E14.4.1(A116)**; I agree with this conclusion for the indicative alignment.

Section 5.2.3 of the AQ Report notes that further air quality assessment may be required if a substantial change in the alignment occurs that places the tunnel portals within 200 m of an HSR. However, I note that a resource consent would only likely be required for air discharges from a tunnel under Rule E14.4.1(A117) (Restricted Discretionary Activity) in an unlikely scenario where more than 50 HSRs are within 200 m of the tunnel portals and more than 50,000 vehicles per day use the tunnel.

5 Assessment of effects: Air quality

5.1 Applicant's air quality assessment

The applicant's air quality assessment is detailed in the AQ Report. The air quality effects considered are construction dust and exhaust emissions from vehicles using the new road.

The AQ Report concludes that the scale of earthworks and rock-crushing and proximity of HSRs presents a significant risk of offensive or objectionable dust effects if not adequately mitigated by dust management processes. The AQ Report recommends dust controls to be implemented throughout the construction works that would mitigate these risks so that the adverse dust effects are less than minor at all HSRs.

Overall, the AEE considers that construction dust shall be adequately mitigated by conditions of consent so that effects are no more than minor. The AEE concludes that operational air discharges are negligible and a Permitted Activity.

5.2 Submissions relevant to air quality

The submission from D. Mason & D. McCallum (JS1), residents at 211 Kaipara Flats Rd, Warkworth, raises specific concerns regarding potential construction dust effects. On page 30 of the submission, it is asserted that only dwellings to the east of the designation are assessed as HSRs by the AQ Report, due to the predominant South-Westerly winds. However, I note that the AQ Report does include all dwellings within 200 m of the designation and dwellings near to access roads as HSRs.

The Mason & McCallum submission usefully notes that summer-time winds include frequent North-Easterly winds that may result in dust being directed toward dwellings to the west. I agree with this statement, noting that North-Easterly winds are the second-most predominant across the region, and can be more frequent in summer (when construction dust is likely to be most significant) than South-Westerlies. Therefore, I consider that dust controls should be implemented to protect HSRs on both sides of the designation.

The Mason & McCallum submission also raises:

- The necessity of instrumental dust monitoring;
- The risk of drought periods for dust discharges;
- Dust discharges from the rock crusher, with a minimum separation distance of 500 m to HSRs sought;
- Objections to later development and certification of the air quality management plan;

- Experiences of dust from the P2Wk works, and the need for tighter dust controls;
- Potential health effects of dust, particularly as a result of deposition on roofs for rainwater collection systems;
- Potential ecological effects of dust.

The Mason & McCallum submission requests amended and additional conditions of consent to further minimise potential dust effects, as detailed on pages 34-35 of the submission. Further relief is sought by changes to the certification process for management plans and the establishment of an independent arbitrator, particularly for the resolution of complaints.

Specific mitigation measures for construction dust effects are sought by the Dando Family Trust (JS9), residents of 39 Phillips Rd, Warkworth. These include:

- Dust screens;
- Contingency measures for house and vehicle cleaning;
- The diversion of rainwater collection systems.

Transpower (NoR3) seek dust controls as NoR and RC conditions to protect electricity transmission infrastructure. Specifically, the submission includes proposed conditions that would require an Electricity Infrastructure Construction Management Plan (EICMP), to be drafted in consultation with Transpower. The EICMP shall require measures to minimise damage to Transpower's infrastructure from dust deposition during the WW2W construction works (submitter's proposed condition 25G(b)).

General opposition to the potential air quality effects of the WW2W Project were also raised by A. & G. Still (JS8) and A. & E. Oguz (JS10).

5.3 Assessment of air quality effects

5.3.1 Introduction to air quality assessment

My assessment of the application reviews aspects relevant to air quality, recognising that the alignment and construction methodology are yet to be selected. My review focuses on:

- Construction dust effects;
- Operational air quality effects arising from vehicles using the new highway.

5.3.2 Construction dust effects

I consider that the AQ Report provides a detailed assessment of the potential dust effects from construction of a highway within the proposed designation, undertaken in

general accordance with the *Guide to Assessing Air Quality Impacts from State Highway Projects* ('The Transport AQ Guide', NZTA, 2015) and the *Good Practice Guide for Assessing and Managing Dust* ('GPG:Dust', Ministry for the Environment, 2016).

I agree that the scale of earthworks and rock-crushing activities present a significant risk of nuisance dust effects at HSRs, requiring specific mitigation. I do not consider that notable health effects are likely to occur as a result of the dust emissions. The dust that may be discharged from the works (including that which may deposit on roof-water collection systems) shall largely comprise inert soil. As described by the GPG:Dust, the type of dust discharged from large-scale earthworks is generally of a larger size fraction (mostly greater than 10 µm in diameter) that settles within tens of metres from the source and is not inhalable.

The recommended dust mitigation measures are detailed in section 6 of the AQ Report and are proposed to be included within a Construction Air Quality Management Plan (CAQMP), required as a condition of consent. I consider the mitigation measures are in accordance with the best-practice recommendations of the GPG:Dust and can adequately mitigate dust discharges so that offensive or objectionable dust effects are unlikely to arise. The key mitigation measures I consider necessary are:

- The use of water to suppress dust, particularly from vehicle accessways and the rock-crushing plant;
- Minimising the open area of excavations and use of stabilising;
- Separation of notably dusty activities from HSRs (including the rock crusher by >100 m);
- Routine monitoring for weather conditions conducive to dust nuisance and dust discharges for immediate remediation;
- Sealing access roads with frequent construction traffic and in close proximity to HSRs and maintaining these in a clean state;
- Restricting construction traffic to low speeds (<15 km/hr) on unsealed accessways.

As detailed in the GPG:Dust, dust management is not complex and relies most on communication with neighbours and constant vigilance. NZTA's Mackays to Peka Peka Project is highlighted by the GPG:Dust as having exemplary dust management. I consider that a similar level of dust management should be achievable for the WW2W Project. The GPG:Dust also recommends the NZTA template for CAQMPs.

I have considered the suggestions for dust mitigation in the Mason & McCallum, Dando, and Transpower submissions. I consider these are generally unnecessary (greater separation distances, dust screens and provision of alternative water supplies), or could be implemented as contingency measures under the CAQMP in the event that visual monitoring and/or complaints indicate a significant dust risk.

I consider the dust risks to electrical infrastructure can be adequately mitigated by an EICMP and the CAQMP.

Overall, I agree that discharges of dust during the construction phase are not likely to cause significant adverse effects either to human receptors or to flora beyond the works area if the above mitigation measures (offered as conditions of consent) are implemented. I consider that the conditions of consent should require a specific CAQMP to detail the above dust mitigation measures and include a limit condition to avoid significant adverse dust effects.

5.3.3 Operational air quality: Exhaust emissions

As described above in section 4.2, discharges of hazardous air pollutants (HAPs) from vehicles are a Permitted Activity under the AUP(OP) without standards as they are controlled at a national level. However, in accordance with the Transport AQ Guide (NZTA, 2015), the AQ Report assesses the potential discharges of key HAPs from on-road vehicles using the 'Tier-2 Preliminary Air Quality Technical Assessment Methodology'. This method estimates the worst-case potential ambient concentrations of particulate matter (PM₁₀) and nitrogen dioxide (NO₂) arising from a given number of vehicles and background air quality concentrations alongside a road using conservative modelling parameters. Vehicle exhaust emissions comprise fine particulate, typically less than 2.5 µm in diameter, and the model's PM₁₀ results are therefore interpreted as PM_{2.5}.

The Transport AQ Guide has since been revised (NZTA, 2018), but the guidance regarding the Tier-2 assessment methodology has not notably changed.

The AQ Report predicts the worst-case ambient concentrations of PM₁₀ and NO₂ at worst-case receptors, including 211 Kaipara Flats Rd (the Mason & McCallum dwelling). The concentrations of PM₁₀/PM_{2.5} and NO₂ at these receptors are shown to be negligible under any modelled scenario, including sensitivity analyses where the traffic volume is doubled and highway alignment assumed nearer to the HSRs. All HAPs do not approach the relevant health-based ambient air quality assessment criteria, including the Ambient Air Quality Standards of the NES:AQ, when accounting for existing background concentrations.

I consider that regardless of where the highway alignment is placed within the proposed designation, operational air discharges (vehicle exhaust emissions from the highway and tunnel) are not likely to cause adverse air quality effects.

5.3.4 Assessment of air quality effects conclusion

I consider the air discharges arising from the construction and operation of the WW2W Project are not likely to cause significant adverse effects provided that appropriate construction dust management measures, as proposed by conditions of consent, are implemented. I recommend minor amendments to the proposed conditions of consent to further avoid, remedy and mitigate potential dust effects, as detailed below.

6 Statutory considerations

6.1 Statutory considerations: Section 104(1)(b)

In section 11.2 of the AEE, the applicant assesses the site's air discharges against the relevant statutory planning documents. I consider that the relevant statutory documents for assessing the air discharges from the WW2W Project are the NES:AQ and AUP(OP).

6.1.1 *Resource Management (National Environmental Standards for Air Quality) Regulations 2004*

As above, the operational air discharges are not predicted to cause ambient air quality to approach the NES:AQ Ambient Air Quality Standards for PM₁₀, NO₂ or any other scheduled air pollutant. Further, I consider that the proposed mitigation measures for construction dust shall ensure that PM₁₀ concentrations beyond the works boundary shall comply with the relevant NES:AQ standard. The Auckland Rural Airshed, within which the WW2W works are to occur, is not defined by NES:AQ Regulation 17 as a 'Polluted Airshed'. Therefore, I do not consider the NES:AQ restricts the grant of the NoR or consent.

6.1.2 *Auckland Unitary Plan (Operative in Part)*

At a Regional Policy Statement (RPS) level, I consider that the likely air discharges from the WW2W Project comply with all relevant RPS objectives and policies, as contained in Chapter B7.5 of the AUP(OP). Notably, the construction dust management measures to be employed shall adequately avoid significant health and amenity effects.

At a Regional Plan level, relevant objectives and policies for air discharges are contained in Chapter E14 Air Quality. I consider that the proposal complies with these objectives and policies as air quality shall be generally maintained and significant adverse effects shall be avoided.

In accordance with Policy E14.3(1), no exceedance of the Auckland Ambient Air Quality Targets is predicted to occur either during the construction or operational phases. Therefore, I do not consider that significant adverse effects to human health are likely to occur as a result of the air discharges.

Offensive and objectionable amenity effects or other significant adverse effects are not likely to occur provided that the proposed mitigation measures are employed, in accordance with Policies E14.3(1 & 3). I consider the proposed dust management measures, as defined by the proposed conditions of consent and to be further detailed in a CAQMP, shall suitably mitigate the potential for offensive or objectionable amenity effects or significant effects to human health to arise during the construction phase.

Policy E14.3(8)(a) requires the use of the Best Practicable Option (BPO) for management measures. I consider that the outline of these proposed measures in the AQ Report fulfils this requirement, as they generally align with those recommended by the GPG:Dust, and note that they shall be further detailed in a CAQMP.

6.1.3 Statutory considerations conclusion

I conclude that the WW2W Project's air discharges are consistent with the relevant provisions of all applicable plans and policy statements, subject to compliance with the recommended conditions of consent.

6.2 Matters relevant to discharge or coastal permits (Section 105) and restrictions on certain permits (Section 107)

I consider that the provisions of section 105 as relevant to air discharges have been met as it has been determined that there are no significant air quality effects. It is further considered the applicant's reasons for the discharges of contaminants into air are appropriate in the circumstances.

Section 107(1) of the RMA places restrictions on the granting of certain discharge permits that would contravene sections 15 or 15A of the RMA. I do not consider that section 107 matters are relevant to the air discharges from the proposal, noting that dust discharges are to be managed so that significant effects to water shall be avoided.

6.3 Conditions of consent: Section 108

The Applicant has proposed a set of conditions for the air discharge consent, dated 13 May 2020. I generally support these conditions as adequate to avoid, remedy and mitigate adverse dust effects from the WW2W Project. I recommend some minor amendments to the conditions to further minimise dust effects and ensure the conditions are effective, following my experience with similar infrastructure works.

The recommended wording of the conditions generally follows the recommendations of the GPG:Dust and other consents granted for similar air discharge activities in the Auckland region as these have proven effective for the control of adverse effects.

As below, I do not consider it necessary to replicate these conditions on the NoR, as air discharges from all construction activities shall be regulated by the RC conditions.

Under section 123 of the RMA, I agree that a 15 year duration is appropriate for the air discharge consent.

7 Recommendation

7.1 Adequacy of information

The above air quality assessment is based on the information submitted as part of the application. I consider that the information submitted is sufficiently comprehensive to enable the consideration of air quality matters on an informed basis:

- The level of information provides a reasonable understanding of the nature and scope of the proposal as it relates to air quality.
- The extent and scale of any adverse air quality effects are able to be assessed.
- Persons who may be adversely affected are able to be identified.

7.2 Recommendation

The above air quality assessment does not identify any reasons to decline the RC and NoR, and I consider the application could be granted with conditions for the following reasons:

- I consider that the adverse effects on the receiving environment as a result of air discharges are less than minor, when considering the dust management measures to be implemented.
- Discharges of dust can be adequately controlled by the proposed management measures outlined by the AQ Report and to be further detailed by the CAQMP and conditions of consent so that offensive or objectionable effects are not likely to occur beyond the boundary of the site.
- I consider the proposed dust management measures generally comply with the Best Practicable Option, noting that they are in general accordance with the recommendations of the GPG:Dust.
- Any unexpected discharges of dust can be responded to using contingency measures within the CAQMP to remedy adverse effects.
- Discharges of PM₁₀, PM_{2.5}, NO₂ and other hazardous air pollutants are not expected to cause an exceedance of the relevant ambient air quality criteria as contained within the NES:AQ and AUP (OP) in either the construction or operational phase.
- I consider that the proposed air discharges are consistent with the relevant provisions of the NES:AQ, AUP(OP), and in particular, the integrated management of the air resource.

- I consider the WW2W designation and the proposed highway within this designation has generally adequate separation distances to sensitive receptors so that air quality effects can be effectively mitigated.

7.3 Recommended conditions

I recommend that the proposed conditions of the RC (13 May 2020) are generally appropriate for air quality matters, but recommend some minor amendments.

I recommend that air quality can be adequately managed by conditions of consent within the air discharge consent for all construction works and it is unnecessary to replicate these conditions within the Designation. I recommend that proposed NoR conditions 86 to 88 (proposed NoR Conditions dated 12 May 2020) can be deleted, along with reference to the CAQMP in NoR conditions 4-6. The CAQMP would then be certified as a matter of consent compliance under the air discharge RC only, in a similar manner to the Erosion & Sediment Control Plan for the earthworks RCs.

I recommend minor amendments to the following proposed RC conditions for the reasons provided:

- RC Condition 101: The proposed wording for this limit condition was similar to an example of a 'poorly worded condition' in the *Good Practice Guide for Assessing and Managing Odour* ([Ministry for the Environment, 2016, p.25](#)). Although it set an intention to 'avoid as far as practicable' offensive or objectionable air quality effects, it did not set a clear and enforceable limit against these effects. I recommend the limit condition with wording in accordance with the recommendations of the GPG:Dust. While dust is the most-likely air discharge, I recommend retaining the proposed limit wording for 'dust, odour and fumes' to ensure that the consent suitably limits any potential air discharges. This condition should also set a requirement that dust is minimised as far as practicable in accordance with the measures detailed by the CAQMP.
- 102(a, c & d): Dust is to be minimised from all construction activities, not only from operation of the rock crusher.
- 102(d): I preferred a previous version of this list included in the proposed condition set 27 May 2019, as it was more comprehensive in the list of dust mitigation methods. I recommend these methods are required to be addressed within the CAQMP (not only 'potentially included'), noting they were detailed by the AQ Report as necessary to avoid significant dust effects.
- 102(e): New sub-point, re-introduced from earlier 27 May 2019 draft conditions to specifically require dust management measures relating to vehicle movements, which in my experience are the greatest source of dust at large-scale earthworks sites.

- 102(f): New sub-point, re-introduced from earlier 27 May 2019 draft conditions to specifically require checks on engine exhaust emissions, to minimise HAP discharges and resulting off-site health effects.
- 102(i): Not only offensive or objectionable dust requires remedial management.
- 103: The CAQMP is required to be certified by Council as it is required by Restricted Discretionary Activity Standard E14.6.3.4(3). The Management Plan conditions (proposed conditions 3-7 & Table 2) state that the CAQMP is to be submitted for certification.

I recommend the following RC conditions relevant to air quality (with changes to the proposed wording underlined and strike-through):

Air Quality

101. Discharges of dust, odour or fumes shall not cause offensive or objectionable effects at any location beyond the boundary of the Site, in the opinion of an enforcement officer when assessed in accordance with the *Good Practice Guide for Assessing and Managing Dust* (Ministry for the Environment, 2016). The Consent Holder shall ensure that dust management at the Site is undertaken in accordance with the CAQMP and minimises dust generation as far as practicable. ~~The Consent Holder shall avoid, as far as practicable, objectionable or offensive odour, dust and fumes arising from the operation of a rock crusher, beyond the boundary of the Designation impacting on HSRs.~~
102. The Consent Holder shall prepare a Construction Air Quality Management Plan (CAQMP) to outline the measures to be adopted to meet condition 101. The CAQMP shall be prepared by a Suitably Qualified and Experienced Person and shall include:
 - a. A description of the works, and periods of time when emissions of odour, dust or fumes might arise from the Construction Works, including operation of the rock crusher;
 - b. Identify the location(s) of any mobile rock crusher for the duration of construction
 - c. Identification of HSRs that may be adversely affected by emissions of odour, dust or fumes from the ~~rock crusher~~ Construction Works;
 - d. Methods for mitigating dust that may arise from ~~mineral extraction and the Construction Works~~ potentially including watering for dust suppression, minimising open earthwork areas, limiting earthworks during high winds, minimum setbacks from HSRs where necessary, emissions control equipment (e.g. enclosure and/or water sprays at transfer points), and monitoring of weather conditions and visual inspections;
 - e. Measures to manage adverse dust effects generated by construction traffic on unsealed roads, which may include metalling of yards and access roads, controlling vehicle speeds, and sealing sections of road where construction traffic shall be close to a dwelling;
 - f. Methods for maintaining and operating construction equipment and vehicles to minimise visual emissions of smoke from exhausts;

- g. Methods for undertaking and reporting on the results of daily inspections of Construction Works that might give rise to odour, dust or fumes;
 - h. Methods for monitoring and reporting on the state of air quality during Construction Works, including wind speed, wind direction, air temperature and rainfall;
 - i. Methods to remediate ~~offensive and objectionable~~ adverse dust deposits from Construction Works on HSRs, potentially including cleaning exterior surfaces of houses or driveways and/or cleaning of water tanks and replenishment of water supplies.
 - j. Procedures for maintaining contact with stakeholders and notifying of proposed construction activities, with reference to the SCMP, including complaints procedures;
 - k. Construction operator training procedures; and
 - l. Contact details of the site supervisor or Project manager and the Project Liaison Person (telephone number and email or other contact address).
103. The CAQMP shall be submitted to the Council for certification in accordance with the conditions titled "Management Plan Certification Process". When preparing the CAQMP the Suitably Qualified and Experienced Person shall have regard to the guidance contained in the *Good Practice Guide for Assessing and Managing Dust* (Ministry for Environment, 2016) and the *NZ Transport Agency Guide to assessing air quality impacts from state highway projects* (version 2.3, October 2019), or any subsequent version.

8 Review

8.1 Memo and technical review prepared by:

Paul Crimmins <i>MSc(Hons), BA</i> Senior Specialist Contamination, Air & Noise Specialist Unit Resource Consents Date:	 <div style="border: 1px solid black; padding: 2px; text-align: center;">21 August 2020</div>
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8.2 Memo reviewed by:

Jared Osman <i>BSc(Hons)</i> Team Leader Contamination, Air & Noise Specialist Unit Resource Consents Date:	 <div style="border: 1px solid black; padding: 2px; text-align: center;">26/08/2020</div>
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ATTACHMENT 5

QUALIFICATIONS AND/OR EXPERIENCE

Attachment 5: Summary of qualifications and Experience

Wayne Siu	<p>My full name is Wayne Wing Ho Siu and I am employed by Auckland Council as a Planner in the Planning North/West and Islands Unit. I have been employed in this role since January 2014. Prior to this I was employed as a Policy Analyst by Auckland Council. I have six years' experience in statutory and non-statutory planning.</p> <p>My role involves policy development, area spatial planning and statutory planning under the Resource Management Act. I hold a Bachelor of Planning from the University of Auckland (2012). I am an intermediate member of the New Zealand Planning Institute.</p> <p>I have been involved with council-initiated plan changes, the processing of notices of requirements, structure planning, development of area plans, and providing policy advice on resource consents. Relevantly:</p> <ul style="list-style-type: none"> • Auckland Unitary Plan IHP process, Topic 081c rezoning and precincts • Auckland Council Plan Change 5: Whenuapai • Notice of Requirement to alter Designation 6763 State Highway 1 – Puhoi to Topuni, as part of NZTA's - SH1 Dome Valley Safety Improvements Project
Stephen Brown	<p>My name is Stephen Brown. I am a director of Brown NZ Ltd, specialist landscape architectural consultant. I have held that role since 1998. I am a consultant to Auckland Council providing specialist input to Council's review of the project in relation to its landscape and amenity effects.</p> <p>I hold the qualifications of Bachelor of Town Planning (Auckland University) and also hold a post-graduate Diploma of Landscape Architecture (Lincoln University). I am a registered landscape architect, as well as a Fellow and past President of the New Zealand Institute of Landscape Architects.</p> <p>I have practised as a landscape architect for 38 years. During that period, the great majority of my professional practice has focussed on landscape assessment and planning. That work embraces multiple district and regional landscape assessments, ranging from the Auckland Region (1984 and 2008) to the West Coast of the South Island (2012). It also traverses development projects dating back as far as assessment of the Channel Tunnel Rail Corridor options in 1985 and more recent projects that include expansion of the Marsden Point and Tauranga ports, a gondola up to The Remarkables Ski Field, nine apartment buildings in the Launch Bay Precinct at Hobsonville Point, the ALPUR B2 Motorway Corridor, the Waterview Connection Project and review of the East West Link and Northern Corridor Improvement projects.</p>

Siiri Wilkening	<p>Siiri Wilkening is an associate with Marshall Day Acoustics. She holds a Master's degree in Environmental Engineering (Land Improvement and Environmental Protection) from the University of Rostock, Germany.</p> <p>Siiri is a full professional Member of the Acoustical Society of New Zealand. She has more than 20 years' experience in acoustics, specialising in environmental acoustics with a particular focus on road construction and operation.</p> <p>Siiri has have been involved in investigating and reporting on construction and traffic noise effects of a large number of roading projects, including local roads and state highways. She has given expert evidence at Council planning hearings, before the Environment Court and the Arbitration Court, and before five Boards of Inquiry, and has also participated in Environment Court mediations.</p>
Gary Black	<p>My full name is Gary Black. I am Director and Principal Transportation Engineer at T-Consult (2020) Limited and am contracted by Harrison Grierson to provide traffic and transportation consultancy services. I have worked at Harrison Grierson since January 2020.</p> <p>I am a consultant to Auckland Council providing specialist input to resource consent processing on matters of traffic and transportation.</p> <p>I hold the qualifications of Bachelor of Engineering with Honours in Civil Engineering from Sheffield Hallam University in the United Kingdom.</p> <p>I am a Chartered Professional Engineer with Engineering New Zealand.</p> <p>I have 30 years' experience as a professional traffic and transportation engineer and have lived in New Zealand since 2005. My work experience includes undertaking traffic and transportation assessments, design and construction monitoring. I have provided technical advice to Auckland Council, Auckland Transport developers and individuals during resource consent applications and processes.</p>
Rebecca Ramsay	<p>My full name is Rebecca Sarah Ramsay. I am currently employed by Auckland Council as a Specialist: Archaeology in the Cultural Heritage Implementation Team. I have been in this role since July 2015.</p> <p>In my role I provide specialist advice through statutory and non-statutory processes to promote the protection and conservation management of Auckland's historic heritage resources.</p> <p>I hold a Bachelor of Arts majoring in Geography and Anthropology and Master of Arts (First Class) in Anthropology, specialising in archaeology from the University of Auckland.</p> <p>I am a member of the New Zealand Archaeological Association (NZAA) and the New Zealand committee for the International Council of</p>

	<p>Monuments and Sites (ICOMOS). I also hold a council position with the NZAA.</p> <p>I have six years of experience in the New Zealand historic heritage and archaeology industry. My work experience includes providing specialist archaeological and historic heritage policy and implementation advice on resource consents, Notices of Requirement, Outline Plans of Work, council projects, and compliance and incidence investigations; undertaking archaeological field work and completing site significance, condition, risk and monitoring assessments; and, developing and implementing strategic direction to address climate change effects on historic heritage sites and places.</p>
Elise Caddigan	<p>My full name is Elise Natalie Caddigan. I am currently employed by Auckland Council as a Built Heritage Specialist, Built Heritage Implementation Team. I have been in this role since January 2016. In my role I provide specialist advice through the resource consent process to promote the protection and conservation management of Auckland's built heritage resources. I prepare and review historic heritage evaluations, using established policy, guidelines, and methodology for evaluating historic heritage under the Unitary Plan and I prepare reports for best practice guidance documents, plan changes, resource consent hearings, disputes and Environment Court appeals in the area of built heritage.</p> <p>I hold a Masters degree in Museum and Heritage Studies, a Postgraduate Diploma in History, and a Bachelor of Arts in History and Anthropology. I have worked in several museum and heritage organisations over the past ten years and have experience in all areas of collection management and the identification, research, and values assessment for heritage places.</p> <p>I joined Auckland Council's Heritage Unit in 2014 as a Specialist Advisor in the Pre-1944 Survey Team. My role included conducting field work and assessing each property for building style, integrity and changes as outlined in the specific team methodology. I also recorded and evaluated sub-area heritage values and streetscapes for input into the expert heritage evidence before the Auckland Unitary Plan Independent Hearings Panel.</p> <p>I am a member of ICOMOS New Zealand and the Professional Historian's Association of New Zealand.</p>
Andrew Rossaak	<p>My full name is Andrew Leif Rossaak. I am the Environmental Science Team Leader at Morphem Environmental Limited (Morphum). I have worked at Morphem since October 2017.</p> <p>I am a consultant to Auckland Council providing specialist input to resource consent processing on matters of streamworks, freshwater ecology, terrestrial ecology, vegetation removal, and biodiversity offsetting.</p>

	<p>I hold the qualifications of Bachelor of Science (Agric) and Masters in Science (Ecology) from The University of Natal in South Africa.</p> <p>I have 24 years' experience as a professional ecologist and environmental scientist and have been an environmental consultant since 2002. My work experience includes undertaking ecological assessments; preparing and peer reviewing Ecological Impact Assessments and Ecological Restoration Plans; the development of non-statutory guidance documents and practice notes; the development of systematic conservation plans; and protected area expansion and governance</p>
Paul Crimmins	<p>My full name is Paul Edward Crimmins and I am employed as a Senior Specialist within the Contamination, Air & Noise Team of Auckland Council's Specialist Unit at Graham Street, Auckland Central.</p> <p>I have been employed in this role since a restructure in October 2017 and in a similar Senior Specialist role since February 2013. Prior to this I was employed as a Consents and Compliance Advisor by Auckland Council and as an Environmental Scientist with Beca Limited. I have over ten years' experience in air quality assessments (human health and amenity effects).</p> <p>I hold a Master of Science (First Class Honours) in Environmental Science from the University of Auckland (2018), and a BSc (Environmental Science) and BA (Politics) from the University of Auckland (2009). I am a member of the Clean Air Society of Auckland and New Zealand (CASANZ).</p> <p>I have been involved with consenting and compliance for numerous air discharge permits throughout the Auckland Region over the past decade. Some examples include:</p> <ul style="list-style-type: none"> • Industrial air discharges (including NZ Steel, Pacific Steel, O-I Glass, Winstone Wallboards, Tasman Insulation, Southdown Power Station, Industrial Processors, numerous asphalt plants); • Construction projects (including City Rail Link, America's Cup Wynyard Quarter works, Waterview Tunnel, Northern Expressway Extensions, East-West Link); • Waste facilities (including Whitford Landfill, Redvale Landfill; Mangere Wastewater Treatment Plant and biosolids fill; hazardous waste treatment facilities at Neales Rd, Miami Pde and Stonedon Dr; numerous refuse transfer stations).