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

Date: Mondays through Thursdays from
18 September until 12 October 2023
Time: 9:30am
Meeting Room: Council Chambers
Venue: Level 2, Henderson Civic, 3 Smythe Road,
Henderson, Auckland 0612

NOTIFICATION MATERIAL

VOLUME 13

SECTION 92 DOCUMENTS

TE TUPU NGĀTAHI SUPPORTING GROWTH

**AUCKLAND TRANSPORT &
WAKA KOTAHI NZ TRANSPORT AGENCY**

COMMISSIONERS

Chairperson Richard Blakey
(Chairperson)
Commissioners Mark Farnsworth
Vaughan Smith

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Note: The reports contained within this agenda are for consideration and should not be construed as a decision of Council. Should Commissioners require further information relating to any reports, please contact the Team Leader Hearings.

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Notices of Requirement
Te Tupu Ngātahi Supporting Growth – North-West Project

ATTACHMENT 01

**AUCKLAND COUNCIL
BUILT HERITAGE REQUEST**

Attachment 1:

Further information requested under Section 92 of the Resource Management Act 1991

NoR#	NoR name	Category of information	Specific Request	Reasons for request
North West Strategic				
S2	State Highway 16	Study list	Pre-1940 built heritage study list.	To identify any extant pre-1940 built heritage sites and their potential historic heritage values within the designation and 200m buffer.
S3	Rapid Transit Corridor, incl the Regional Active Mode Corridor	Study list	Pre-1940 built heritage study list.	To identify any extant pre-1940 built heritage sites and their potential historic heritage values within the designation and 200m buffer. Note that the provided information on 42 Boord Crescent is insufficient.
S3	Rapid Transit Corridor, incl the Regional Active Mode Corridor	Determination of option(s)	Detailed information of proposal for the scheduled historic heritage places, being: Huapai Tavern (AUP(OIP) ID 00482) and the Kumeu Railway Station Goods Shed (AUP(OIP) 0048). Location of the non-scheduled historic railway carriages is currently unknown.	Total or substantial demolition and relocation within or outside of the historic heritage extent of place of the Huapai Tavern and would result in significant adverse effects. The Assessment of Historic (Built) Heritage (J. Brown, Dec 2022) outlines a number of options; however, determination of which option is required for assessment and mitigation discussion and cannot be left for detailed design.

NoR#	NoR name	Category of information	Specific Request	Reasons for request
				<p>Relocation of the Kumeu Railway Station Goods Shed is likely supportable given its relocation history. Confirmation of relocation site is necessary for historic heritage effects assessment.</p> <p>Advice was provided by the Heritage Unit in December 2020 which I reiterated in November 2022. A meeting to discuss built heritage was proposed but did not occur. The Huapai Tavern is the only original scheduled historic heritage place in the locality and its retention is essential.</p>
Whenuapai Local Arterials				
W1	Trig Road North upgrade	Study list	Pre-1940 built heritage study list.	To identify any extant pre-1940 built heritage sites and their potential historic heritage values within the designation and 200m buffer. Built heritage is a separate expertise to archaeology.
W2	Mamari Road (FTN) upgrade	Study list	Pre-1940 built heritage study list.	To identify any extant pre-1940 built heritage sites and their potential historic heritage values within the designation and 200m buffer. Built heritage is a separate expertise to archaeology.
W3	Brigham Creek Road upgrade	Study list	Pre-1940 built heritage study list.	To identify any extant pre-1940 built heritage sites and their potential historic heritage values within the designation and 200m buffer. Built heritage is a separate expertise to archaeology.

NoR#	NoR name	Category of information	Specific Request	Reasons for request
W4	Spedding Road (East and West)	Study list	Pre-1940 built heritage study list.	To identify any extant pre-1940 built heritage sites and their potential historic heritage values within the designation and 200m buffer. Built heritage is a separate expertise to archaeology.
W5	Des 1437 Hobsonville Road (alteration)	Study list	Pre-1940 built heritage study list.	To identify any extant pre-1940 built heritage sites and their potential historic heritage values within the designation and 200m buffer. Built heritage is a separate expertise to archaeology.
Redhills and Riverhead Local Arterials				
R1	Coatesville Riverhead Highway Upgrade	Study list	Pre-1940 built heritage study list.	To identify any extant pre-1940 built heritage sites and their potential historic heritage values within the designation and 200m buffer. Built heritage is a separate expertise to archaeology.
RE1	Don Buck Road (FTN) Upgrade	Study list	Pre-1940 built heritage study list.	To identify any extant pre-1940 built heritage sites and their potential historic heritage values within the designation and 200m buffer. Built heritage is a separate expertise to archaeology.
RE2	Des 1433 – Fred Taylor Drive Transport Corridor	Study list	Pre-1940 built heritage study list.	To identify any extant pre-1940 built heritage sites and their potential historic heritage values within the designation and 200m buffer. Built heritage is a separate expertise to archaeology.

NoR#	NoR name	Category of information	Specific Request	Reasons for request
Housing Infrastructure Fund (HIF) – Redhills Arterial Transport Networks				
NoR1	Redhills North-South	Study list	Pre-1940 built heritage study list.	To identify any extant pre-1940 built heritage sites and their potential historic heritage values within the designation and 200m buffer. Built heritage is a separate expertise to archaeology.
NoR2a	Redhills – East-West – Dunlop Road	Study list	Pre-1940 built heritage study list.	To identify any extant pre-1940 built heritage sites and their potential historic heritage values within the designation and 200m buffer. Built heritage is a separate expertise to archaeology.
NoR2b	Redhills East-West Corridor – Baker Lane	Study list	Pre-1940 built heritage study list.	To identify any extant pre-1940 built heritage sites and their potential historic heritage values within the designation and 200m buffer. Built heritage is a separate expertise to archaeology.
NoR2c	Redhills East-West – Nixon Road Connection	Study list	Pre-1940 built heritage study list.	To identify any extant pre-1940 built heritage sites and their potential historic heritage values within the designation and 200m buffer. Built heritage is a separate expertise to archaeology.
HIF – Trig Road				
Trig Road	Trig Road Corridor upgrade	Study list	Pre-1940 built heritage study list.	To identify any extant pre-1940 built heritage sites and their potential historic heritage values within the designation and 200m buffer. Built heritage is a separate expertise to archaeology.

ATTACHMENT 02

AUCKLAND COUNCIL
ECOLOGY REQUEST

Attachment 1:

Further information requested under Section 92 of the Resource Management Act 1991

NoR#	NoR name	Category of information	Specific Request	Reasons for request
Whenuapai Local Arterials				
W1	Trig Road North upgrade	<i>Ecology</i>	<p>Amend the wildlife survey condition on the designation for the provision of native wildlife survey, (and if necessary plans/permits) for a wider range of species and areas.</p> <p><i>Note that this would also require an amendment to the EMP condition. Survey findings should be provided to Council for certification</i></p>	<p>The relief sought is to include the entire designation footprint, rather than limited areas, and be expanded to include all native fauna species (not only species that have been previously recorded on site).</p> <p>The findings of the survey should be certified by Auckland Council prior to preparing the EMP.</p> <p>The effort expended for site-specific investigations to date, means that the presence of native herpetofauna, bats and birds to be present cannot be ruled out in the proposed designation extent.</p> <p>Furthermore, the lapse period of the designations means that native species could colonise the area, and that habitat values could significantly improve or the threat status of the native fauna present could be altered (which would effect the ecological value, and level of effect).</p> <p>Concern is expressed with the condition as proposed, referring to a best practice document (EIANZ, 2018) which could be substantially out of date when the designation is given effect to; and the lack of certainty</p>

NoR#	NoR name	Category of information	Specific Request	Reasons for request
				in the condition with the use of terms such as <i>may</i> , which are not directive as to what would be required.
W2	Mamari Road (FTN) upgrade	<i>Ecology</i>	See Response to W1 above	See Response to W1 above
W3	Brigham Creek Road upgrade	<i>Ecology</i>	See Response to W1 above	See Response to W1 above
W4	Spedding Road (East and West)	<i>Ecology</i>	See Response to W1 above	See Response to W1 above
W5	Des 1437 Hobsonville Road (alteration)	<i>Ecology</i>	See Response to W1 above	See Response to W1 above
Redhills and Riverhead Local Arterials				
R1	Coatesville Riverhead Highway Upgrade	<i>Ecology</i>	See Response to W1 above	See Response to W1 above

NoR#	NoR name	Category of information	Specific Request	Reasons for request
RE1	Don Buck Road (FTN) Upgrade	<i>Ecology</i>	See Response to W1 above	See Response to W1 above
RE2	Des 1433 – Fred Taylor Drive Transport Corridor	<i>Ecology</i>	See Response to W1 above	See Response to W1 above
Housing Infrastructure Fund (HIF) – Redhills Arterial Transport Networks				
NoR1	Redhills North-South	<i>Ecology</i>	See Response to W1 above	See Response to W1 above
NoR2a	Redhills – East-West – Dunlop Road	<i>Ecology</i>	See Response to W1 above	See Response to W1 above
NoR2b	Redhills East-West Corridor – Baker Lane	<i>Ecology</i>	See Response to W1 above	See Response to W1 above
NoR2c	Redhills East-West – Nixon	<i>Ecology</i>	See Response to W1 above	See Response to W1 above

NoR#	NoR name	Category of information	Specific Request	Reasons for request
	Road Connection			
HIF – Trig Road				
Trig Road	Trig Road Corridor upgrade	<i>Ecology</i>	See Response to W1 above	See Response to W1 above

ATTACHMENT 03

**AUCKLAND COUNCIL
LANDSCAPE ASSESSMENT REQUEST**

Landscape Peer Review

SGA NORTHWEST STRATEGIC AND LOCAL ROADS

25 November 2022 | Preliminary Comments

1 Introduction

- 1.1 Bridget Gilbert Landscape Architecture Limited (**BGLA**) has been requested by Auckland Council to provide landscape peer review advice in relation to a series of Notices of Requirement as part of the Supporting Growth Alliance programme for the Northwest (Auckland).
- 1.2 Following a meeting with the SGA Planner and Boffa Miskell staff on Friday 25 November 2022, I set out below a suggested approach for the structure of an Executive Summary in the Landscape Effects Reports, that I consider would assist a clearer understanding of the landscape effects assessment.

2 North West Strategic Landscape Report Executive Summary

- 2.1 Brief **Introduction** paragraph (as per current report).
- 2.2 Scope of Assessment: list areas and insert an **Overview Plan** of the 'corridor', labelling key roads and places. Identify S1, S2, S3, KS Kumeu Rapid Transit Station, HS Huapai Rapid Transit Station ' and S4 on the plan.
- 2.3 Briefly explain that this is a designation process and will be subject to detailed design at Outline Plan of Works stage (or something along those lines, informed by the planners). As such there is a **fundamental strategy** of using the **Urban and Landscape Design Management Plan (UDLMP)** process required in the **Proposed Conditions** as the method to manage landscape related effects. Perhaps explain that this has been accepted as an appropriate approach on other recent NoRs etc in areas that include both urban and rural zoned land (eg Drury)?
- 2.4 Insert a brief summary of the **relevant conditions** in managing landscape related effects. The detail in the conditions is really helpful in providing guidance that the 'next process' (or detailed OPW process) will be thorough.
- 2.5 Explain that the UDLMP will **draw from the findings of the Urban Design Evaluation (UDE)** and Landscape Report along with consideration of the detailed design. As such, the UDE provides a helpful overview of many of the key landscape and urban design related principles that will underpin the future corridor. Insert each of the UDE sector graphics.
- 2.6 Briefly explain the distinction between **Construction Effects** and **Operational Effects**.

Construction Effects:

- 2.7 Current paragraph is fine but it would be helpful to add a brief summary of what the relevant mitigation measures are that have been factored into the assessment.

Operation Effects:

- 2.8 Describe the **Positive Effects** – current paragraph is fine.
- 2.9 Perhaps insert something that summarises some of the common **moderating factors** eg FUZ context of sections of the corridor. Ideally add a plan (using the Overview Plan as a base) broadly showing where this moderating influence applies. Mention/roughly map any other moderating factors as relevant eg very poor-quality existing streetscape environment, industrial context etc??
- 2.10 Then something like:

Adverse operational effects are expected to be as a result of a widened or introduced road corridor resulting in changes in landform and removal of vegetation. Drawing from the findings of the detailed assessment in the main body of this report, the (approximate) key locations of landscape related effects are shown on the figures below:

- 2.11 Insert a **series of diagrams** that show spatially where the key landscape effects are, ideally using the same base plans to those in the UDE (by sector). I expect that the range of 'landscape effects types' that will need to be shown diagrammatically might include (in no order of priority and there could well be more):
- Large scale and/or protected vegetation removal.
 - Wetland modification.
 - Stream realignment.
 - Areas of large scale earthworks (cut and fill, retaining structures).
 - Sections where the corridor will be particularly prominent within a Rural zone (incl CSL zone) context.
 - Locations where the corridor will impact on reserves/open spaces.
- 2.12 Then explain by 'effect type', the key aspects of the **Urban and Landscape Design Management Plan (UDLMP)** process required in the **Proposed Conditions** and/or **UDE** that will address those types of effects. This could take the form of a **Summary Table**.
- 2.13 Explain that factoring in the mitigation contemplated by the **Urban and Landscape Design Management Plan (UDLMP)** process required in the **Proposed Conditions**, along with the **Positive Effects** and **Moderating Factors** outlined above, the adverse effects are concluded to be as follows:
- 2.14 Insert **conclusory comments on Operational Effects**. This needs to reference **visual amenity**, **natural character** and **landscape character** (incl rural and urban character) effects.
- 2.15 Insert **Summary Table of Effects**

Sector	Construction Effects	Visual Effects	Amenity	Natural Effects	Character	Landscape Effects
SECTOR X						
Without mitigation						
With Mitigation						
SECTOR Y						
Without mitigation						
With Mitigation						

Bridget Gilbert
Landscape Architect
B Hort Dip LA ALI NZILA

APPENDIX A

Bridget Gilbert: Qualifications And Experience

Bridget holds the qualifications of Bachelor of Horticulture from Massey University and a postgraduate Diploma in Landscape Architecture from Lincoln College, is an associate of the Landscape Institute (UK) and a registered member of the New Zealand Institute of Landscape Architects.

Bridget has practised as a Landscape Architect for over twenty-five years in both New Zealand and England. Upon her return to New Zealand, Bridget worked with Boffa Miskell Ltd in their Auckland office for seven years. She has been operating her own practice for the last sixteen years, also in Auckland.

During the course of her career, Bridget has been involved in a wide range of work in expert landscape evaluation, assessment, and advice throughout New Zealand, including:

- landscape assessment in relation to Regional and District Plan policy;
- preparation of structure plans for rural, coastal, and urban developments;
- conceptual design and landscape assessment of infrastructure, rural, coastal, and urban development; and
- detailed design and implementation supervision of infrastructure, rural, coastal, and urban projects.

Of particular relevance to Bridget's landscape peer review role within the Queenstown Lakes District, Bridget co-authored the Wakatipu Basin Land Use Planning Study in 2017. Since that time, Bridget has assisted QLDC with landscape advice in relation to PDP Chapters 3, 6, 21, 24, 41 and 46 giving her a reasonable understanding of the range of landscape issues across the District's rural landscapes.

Bridget has provided landscape advice in relation to rural living developments throughout many parts of rural New Zealand, including: Northland; Whangarei District Rodney; Waiheke, Rakino and Great Barrier Islands; Whitford; Clevedon; Franklin; Matamata; Cambridge; Coromandel Peninsula; Waitomo District; Taupo; New Plymouth; and Tasman District.

Bridget is currently a panel member of the Auckland Urban Design Panel (with a Chair endorsement).

Bridget is also an Independent Hearing Commissioner for Auckland Council.

In addition, Bridget was appointed as one of three peer reviewers of the *Te Tangi a te Manu Aotearoa* Landscape Assessment Guidelines under the direction of the New Zealand Institute of Landscape Architects. This work has given Bridget an up-to-date insight into landscape assessment best practice.

ATTACHMENT 04
AUCKLAND COUNCIL
LIGHT REQUEST

Todd Elder

From: John McKensey (LDP) <john.mckensey@ldp.nz>
Sent: Saturday, 25 February 2023 6:19 pm
To: Jo Hart
Cc: Todd Elder
Subject: RE: SGA NW - Response to Lighting Specialist S92 [22-0042-001A]

Hi Jo,

We have reviewed the applicant's response.

In relation to the 5 points raised in the S92 request for lighting;

- Point 2 (Air traffic safety): Response satisfactory
- Points 1, 3, 4 & 5: While the ecological assessments refer to potential light spill mitigation, there is no apparent acknowledgement of other measures that have become accepted practice in New Zealand for protection of the NZ long-tailed bat (LTB). The AUP and Auckland Transport TDM are also silent on this issue in terms of specific controls. This is a multi-discipline matter and requires the input of a Bat Ecologist and a Lighting Specialist. In the absence of any currently published guidelines specifically for the NZ long-tailed bat, consenting processes for other sites have defaulted to the recommendations in EUROBATS Publications Series No. 8 – Guidelines for consideration of bats in lighting projects (https://www.eurobats.org/sites/default/files/documents/publications/publication_series/WEB_EUROBATS_08_ENGL_NVK_19092018.pdf). While this does address spill light, it also recommends a number of other measures, which are not apparently mentioned in the application documents as yet. We recommend that these guidelines be referenced as the basis for developing suitable construction and operational EMP's for protection of the LTB

Kind regards

John McKensey

BE Elec CMEngNZ MIEAust CPEng(Aust) MIES
NER APEC Engineer IntPE(Aust) GSAP
Member Resource Management Law Association of NZ Inc.
Member International Dark-Sky Association
Executive Engineer

LDP Ltd (Independent Electrical & Illumination Engineers)

| FREE PHONE: 0800 2 LIGHT (0800 254 448) | T: +64 9 414 1004 | Mob: +64 21 613 514 | E: john.mckensey@ldp.nz
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From: Jo Hart [mailto:Jo.Hart@aucklandcouncil.govt.nz]
Sent: Friday, 24 February 2023 8:34 a.m.
To: John McKensey (LDP) <john.mckensey@ldp.nz>

Cc: Todd Elder <todd.elder@aucklandcouncil.govt.nz>
Subject: RE: SGA NW - Response to Lighting Specialist S92

Hi John

As per my earlier email of 26 January (below in email trail) – Supporting Growth has responded to your s92 request (also in the email trail dated 26 January).

Could you please review the response and let me know whether there is now sufficient information for you to make your assessment or if you require further information.

Please contact me if you have any questions.

Jo

Noho ora mai | Stay well

Jo Hart | Senior Policy Planner
Regional, North, West and Islands Planning
Plans and Places
DDI 09 890 8291 | Mob 021 948783
Auckland Council, Level 24, 135 Albert Street, Auckland
Visit our website: www.aucklandcouncil.govt.nz

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MON	TUE	WED	THU	FRI
✓	WFH	WFH	✓	WFH

From: Jo Hart
Sent: Thursday, 26 January 2023 4:33 pm
To: 'john.mckensey@ldp.nz' <john.mckensey@ldp.nz>
Subject: FW: SGA NW - Response to Lighting Specialist S92

Hi John

Please find SGA's response to your s92 request in the email below.

Please contact me if you have any questions or need any more information from SGA.

Jo

Noho ora mai | Stay well

Jo Hart | Senior Policy Planner
Regional, North, West and Islands Planning
Plans and Places
DDI 09 890 8291 | Mob 021 948783
Auckland Council, Level 24, 135 Albert Street, Auckland
Visit our website: www.aucklandcouncil.govt.nz

In the office = ✓ Work from home = WFH				
MON	TUE	WED	THU	FRI

From: John Daly <John.Daly@supportinggrowth.nz>

Sent: Thursday, 26 January 2023 8:46 am

To: Jo Hart <Jo.Hart@aucklandcouncil.govt.nz>; Todd Elder <todd.elder@aucklandcouncil.govt.nz>

Cc: Regan Elley <Regan.Elley@supportinggrowth.nz>; Bridget O'Leary <Bridget.O'Leary@supportinggrowth.nz>;

Bruce Hawkins <Bruce.Hawkins@supportinggrowth.nz>; Holly Atkins <Holly.Atkins@supportinggrowth.nz>

Subject: SGA NW - Response to Lighting Specialist S92

Hi Jo,

Many thanks for providing the comments from the lighting specialist.

Section 9.1.3 of the NW Local AEE is referred to in the lighting specialist response. This section relates to the detailed design elements which have not been developed for the proposed designation, and it covers typical transport corridor features, such as pavements, signs, road markings, bus stop locations, safety barriers. It also references lighting, but this reference relates to features such as lampposts etc. There is sufficient room within the designation footprint to provide these features and to comply with the relevant design guidance. These details will be developed at the detailed design / outline plan of work / management plan stage.

In terms of effects we have taken an envelope based approach to support the designation, this includes an assessment of lighting where it is relevant to the technical assessments, including ecology and landscape matters.

I have responded to the 5 points in the specialist's response below, but essentially this is to point out where the lighting effects have been considered and the corresponding condition.

Points 1 and 4 relate to ecological matters –

- Please refer to the NW Local, HIF and Strategic Ecology Assessments, which have considered the construction and operational effects of lighting on ecology along each project corridor.

Point 2 relates to Lighting effects to air traffic safety and navigation (e.g. Whenuapai Airbase)

NZDF has been engaged with prior to lodgement of the NW NoRs. NZDF has indicated in discussions that lighting should meet the Auckland Transport 'Transport Design Manual' requirements, which is the standard approach adopted by Auckland Transport. It should also be noted that NZDF will be notified of the NoRs and will have the opportunity to make a submission.

An Urban and Landscape Design Management Plan condition is proposed in respect to all NORs. The objective of the Urban and Landscape Design Management Plan is to enable integration of the Project's permanent works into the surrounding landscape and urban context. This includes the Whenuapai airbase and the activities within the airbase. As such, detailed design elements, such as lighting, will need to integrate with the surrounding land use. To support integration these will need to be designed to avoid adverse effects in terms of air traffic safety and navigation, or otherwise appropriately managed.

Points 3 and 5 relate to the proposed conditions –

- Construction Environmental Management Plan - The objective of the CEMP is to set out the management procedures and construction methods to be undertaken to, avoid, remedy or mitigate any adverse effects associated with Construction Works as far as practicable. This includes details of the proposed construction yards, including construction lighting.

- Ecological Management Plans Conditions - The objective of the EMP is to minimise effects of the projects on the ecological features of value of Confirmed Biodiversity Areas (identified for each corridor in the condition schedules).
 - For threatened or at risk wetland birds - the conditions includes measures for minimising light spill from construction areas into Wetlands.
 - For bats - The approach is to:
 - Identify construction activities which will minimise disturbance on bats; and
 - Identify where existing vegetation should be retained or new vegetation should be provided within the designation. Note locations for ecological mitigation have informed the designation boundary.
 - Urban and Landscape Design Management Plan – The condition requires the ULDM to be prepared to comply with a number of design related documents, including Auckland Transport’s Urban Roads and Streets Design Guide and Waka Kotahi Urban Design Guidelines: Bridging the Gap (2013). These guides cover street lighting. The condition requires roadside elements such as lighting to be included in the plan, which in turn should comply with the relevant guidance, ensuring potential effects such as light spill, glare and amenity effects are appropriately managed.

Next Steps

Based upon the above and the NOR lodgement documents, we believe we have provided sufficient information to assess and manage lighting effects in relation to the NW NoRs.

Please let me know if a meeting would be useful with the lighting specialist to guide them to the relevant section of the documents, or if there are any additional points that would be helpful to discuss.

Kind regards,

John

John Daly | Planning Lead (North West)
 Te Tupu Ngātahi
 Level 5, 203 Queen Street, Auckland
 M +64 (0)21 578 422



From: Jo Hart <Jo.Hart@aucklandcouncil.govt.nz>
Sent: Tuesday, 24 January 2023 4:52 PM
To: John Daly <John.Daly@supportinggrowth.nz>
Subject: 22-0042_S92 Request_SG NW_Lighting

Hi John

As per Todd’s email this afternoon, please find attached the further information requested from the lighting specialist.

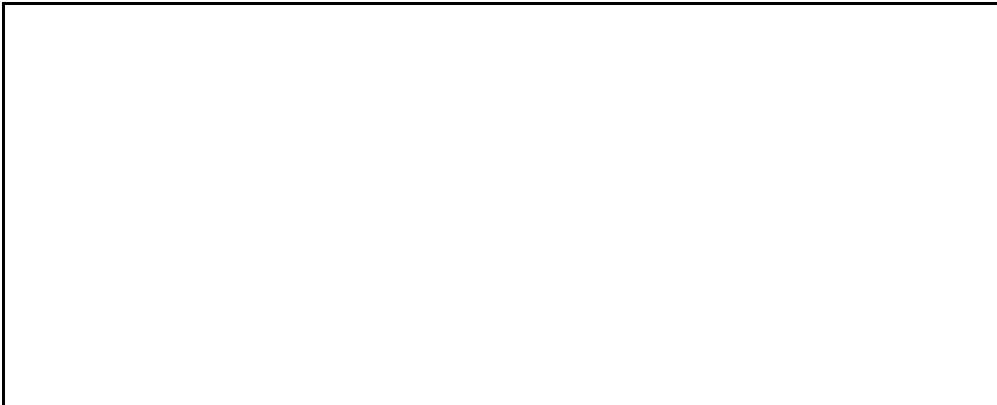
Today, I will also be sending through requests from:

- Landscape/visual
- Built heritage
- Traffic – strategic projects

There may also be others including traffic – local arterials/HIF.

Please contact me if you have any questions.

Jo



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ATTACHMENT 05

**AUCKLAND COUNCIL
LIGHTING REQUEST**

Attachment 1:

Further information requested under Section 92 of the Resource Management Act 1991

NoR#	NoR name	Category of information	Specific Request	Reasons for request
All NOR's (Local, HIF & Strategic)				
All	All	Lighting	<p>The local NOR AEE Section 9.1.3 states that lighting 'does not affect designation boundary or effects'. It appears a similar approach has been taken for all of the NOR AEE's. We disagree. At present there is insufficient information to assess whether lighting effects can be suitably mitigated.</p> <p>Please address lighting effects in the same level of detail as other elements and consider the following aspects as applicable within each NOR;</p> <ol style="list-style-type: none"> 1. Lighting effects to people and other biota (especially the NZ long-tailed bat) 	<p>Lighting can and does have effects. The AUP (particularly chapter E24) and the Auckland Transport TDM (especially the street lighting section) both have environmental lighting requirements that need to be addressed. These both address effects to people in terms of light spill, glare, safety and amenity.</p> <p>If the designation boundary is too close to the road within the designation, then the lighting required for traffic safety may not be possible to implement. Similar issues could apply to important ecological locations. The topography and lighting requirements within the road designation could also potentially generate a nuisance to residents and motorists beyond the designation. Sites such as airfields have additional concerns re obtrusive light.</p> <p>In addition, recent consenting processes elsewhere in the country to date have been required (by Territorial Authorities and/or the Environment Court), to address biota such as the national critically endangered NZ long-tailed bat. These have resulted in specific physical interventions and lighting restrictions to address lighting</p>

NoR#	NoR name	Category of information	Specific Request	Reasons for request
			<ol style="list-style-type: none"> 2. Lighting effects to air traffic safety and navigation (e.g. Whenuapai Airbase) 3. Related Management Plans (e.g. Construction, Environmental & Bat) – Either inclusion of a lighting section in each and/or provision of a separate Lighting Management Plan for each element) 4. An ecological assessment should propose a specifically defined buffer zone adjacent each identified bat habitat. Then related lighting effects limits and mitigation measures should be set 5. Propose Draft Conditions addressing Lighting effects 	<p>effects. Hence, it follows for consistency that such measures should be applied to all projects where such biota are present. Examples of such measures include;</p> <ul style="list-style-type: none"> • Buffer zone beside identified bat habitat area (BHA) • Building setback beyond buffer • Vegetative screening from headlight sweep/glare effects • Spill light limits at buffer boundary • Luminaire colour temperature limit near a BHA • Luminaire upward light output limit <p>Other biota such as migrating seabirds can also be affected by obtrusive lighting.</p>

ATTACHMENT 06

**AUCKLAND COUNCIL
SOCIAL IMPACT ASSESSMENT REQUEST**



SGA NW Strategic Package – Review of Soft Lodgement SIA RFI following receipt of SIA Addendum

SOFT LODGEMENT SIA REPORT - REQUEST FOR INFORMATION (PREPARED BY WSP ON 22/11/2022)		SIA ADDENDUM REVIEW OUTCOMES (PREPARED BY WSP ON 14/02/2023)
Specific Request	Reason for Request	
Introduction (Chapter 1)		
<p>Section 1.1 – Purpose and Scope</p> <p>Please clearly present the assumptions / exclusions that are applicable to this SIA in Section 1.1.</p>	<p>The assumptions and/or exclusions associated with the SIA study are not defined.</p> <p>It is noted that Section 3.3.1 presents the assumptions associated with determining the social area of influence, however the assumptions and/or exclusions for the overall investigations are not presented. This section should outline what aspects are excluded from the assessment (i.e. the extent to which property impacts and impact of property rights; economic impacts, cultural impacts, extent to which health impacts are considered etc.) and any other exclusions associated with engagement or any other key aspects of the study approach.</p>	<p>Assumptions are clearly set out in the SIA Addendum document. No additional information is required.</p>
Methodology (Chapter 3):		
<p>Section 3.1.2 Information Gathering:</p> <p>(1) Please provide a copy of the NW Strategy Engagement Summary Report (2021).</p>	<p>There has been limited engagement undertaken to support the SIA study. Engagement forms an important part the investigation as it provides the opportunity to:</p> <p>(i) Obtain an understanding of local values, knowledge and experiences,</p>	<p>The SIA Addendum provides additional engagement detail, identifies key themes relevant to the SIA, and summarises the outcome of interviews held. The response to the soft lodgement RFI and</p>

<p>(2) Did the SIA team rely on the summary report outcomes, or did the team have access to the raw data that was collected in order to analysis this with social lens?</p> <p>(3) As there is a strong reliance on the NW Strategy Engagement Summary Report (2021), please provide a list of the stakeholder groups identified as relevant to the SIA study and correlate this with the stakeholders that were involved in the previous engagement process to determine the extent to which this engagement is relevant to the SIA study.</p> <p>(4) Please explain the engagement strategy and / or the approach to the gathering of primary data to support the SIA and reasons for the decision to undertake limited engagement.</p>	<ul style="list-style-type: none"> (ii) Validate existing data and obtain further primary data to support the assessment, (iii) Understand interests and perspectives of stakeholders and the communities, (iv) Ensure the assessment and identified mitigation and management measures are informed by local knowledge. <p>The primary data collection undertaken to support the SIA study is limited to 5 stakeholder interviews – 1 school, and 4 community facilities. This is deemed inadequate as it does not cover the range of stakeholders that are likely to be affected by this package of projects. There is no clear engagement strategy or methods identified to target specific groups.</p> <p>There is a strong reliance on the NW Strategic Engagement Summary Report (2021). Whilst the findings of this report are integrated into the assessment of social impacts chapter, the context in which this data gathered, and the stakeholders involved in this engagement programme is not known. This earlier engagement was not designed to obtain information to support the SIA and was not implemented to specifically target an improved understanding of the social impacts identified in the early stages of the SIA process.</p>	<p>the Addendum provides sufficient context to the engagement. No additional information is required.</p>
<p>Section 3.2 – Impact Identification</p> <p>It is recommended that “Sustaining oneself” is removed as a social impact category.</p>	<p>The impact identification method correctly identifies the categories of social impacts in alignment with both the IAIA and Waka Kotahi SIA guideline, with the exception of the category described as “sustaining oneself” which does not appear in either guideline.</p>	<p>This has been addressed in the assessment of social impacts provided in the SIA Addendum. No additional information is required.</p>

	<p>Following a review how “sustaining oneself” has been applied in the of the Assessment of Social Impacts (Chapter 6), it appears that this category is assessed collectively with “way of life” and / or “community cohesion” categories. The aspects that are included in the consideration of “sustaining oneself” such as accessibility, peoples’ ability to meet their daily need, access employment, good and services etc. can be adequately covered under either “way of life” or “community cohesion” categories.</p>	
<p>Section 3.4 – Impact Rating and Assessment of Impacts</p> <p>Please adjust the impact rating method applied to ensure this meets the risk assessment method recommended in the IAIA and Waka Kotahi SIA guideline.</p>	<p>The impact assessment method presented on Page 10 has several shortfalls:</p> <ol style="list-style-type: none"> (1) The method discussed does not identify the importance of describing and assessing impacts according to (i) the cause of the impact, and (i) the stakeholder / stakeholder group to be impacted (indirectly or directly) and their ability to adapt to change. (2) The description of the impact method in the text on Page 10 does not match the impact rating criteria presented in the table. The text identifies likelihood, duration, distribution, and scale; whilst the table presents the criteria as duration, extent and severity. (3) The assessment methodology does not consider “likelihood” (the probably of the impact occurring). This means that the impact assessment is one dimensional as it only considers the consequence of an impact and not the likelihood of this impact occurring. This method is therefore not a risk 	<p>The SIA Addendum provides a detailed assessment that is much improved from the Soft Lodgement SIA. The result is a much more robust assessment of impacts which has added significant value to the study outcomes. Some of the overall impact ratings differ from the original rating done on the Soft Lodgement SIA, illustrating that a more thorough assessment provided more clarity on the overall significant of some of the impacts.</p> <p>There are some remaining issues with the method used, but these are unlikely to significantly affected the overall assessment outcomes.</p> <p>For completeness, some suggestions relating to the method of assessment are provided for future reference and or application:</p> <ol style="list-style-type: none"> (1) Each of the assessment criteria should be clearly defined and a scale provided.

assessment method as recommended in the IAIA and Waka Kotahi SIA guidelines.

- (4) The rating method does not allow individual consideration of extent, duration and magnitude. The impact rating descriptions provided for very low, low, medium, high, and very high assume all the assessment criteria will be experienced at the same level. For example, an impact that is short term / temporary in duration (considered “very low”) but is likely to impact more than half the community identified (considered “high”) cannot be conveyed using the system as the assessor is required to choose the rating level which is pre-determined, rather than allowing the individual assessment of criteria determine the overall significance rating.

- (2) Magnitude has not been included in the assessment. This provides an important measure on how many people are likely to be affected (few, moderate, many). In the assessment undertaken, it appears that the column “Scale” addresses magnitude. In future it would be good to distinguish clearly between scale and magnitude.
- (3) Whilst a risk assessment approach has been applied (given the consideration of likelihood and consequence), consider use of the IAIA recommended methodology to assign a significance ratings in future assessments.

Significance Rating (Likelihood / Consequence)

		Consequence Level				
		1	2	3	4	5
Likelihood Level	Descriptor	Insignificant	Minor	Moderate	Major	Catastrophic
A	Almost certain	A1	A2	A3	A4	A5
B	Likely	B1	B2	B3	B4	B5
C	Possible	C1	C2	C3	C4	C5
D	Unlikely	D1	D2	D3	D4	D5
E	Rare	E1	E2	E3	E4	E5

Risk Rating: ■ Low ■ Moderate ■ High ■ Extreme.

- (4) In a few instances, the rating of significance pre-mitigation and post-mitigation are the same. This may indicate that the mitigation does not result in any improvement in the overall impact. If mitigation is effective in reducing an impact



		this should be reflected in the assessment rating.
Social Area of Influence and Community Profile (Chapter 6)		
Section 6.2 – Wider Community Figure 3.2 needs improvement. It is recommended that the names of the communities be added as a minimum, and any other key points of reference relating to the area presented.	Improvements are required to the map to ensure it adds value to the readers understanding of the context being portrayed.	Addressed in SIA Addendum.
Section 6.2.1 – Existing environment (1) Provide more detail on existing economic environment (primary economic activity / sectors represented in the area). (2) Please include Riverhead into the review and assessment of the demographic statistics presented in Appendix B and Section 6.2.1 (3) Statistics need to be expanded to provide more detail on demographics and economic aspects.	<p>The existing environment description of the wider community does not provide much detail on the nature of the economic activities taking place in the area. What are the primary economic sectors in the area, what type of agricultural production is taking place etc.</p> <p>A more comprehensive review and analysis of statistics is required to contribute to an understanding of the social context in the project area:</p> <p>The use of statistics adds value to the baseline description of the community, informing an understanding of the social context in which the project is proposed. There are some data missing and expanded the analysis to include more data is recommended.</p> <p>Figure 3-3 presents that statistical area boundaries associated with the wider community which includes the areas of Kumeu rural west, Kumeu rural east, Kumeu – Haupai, Whenuapai, Taupaki, Waimauku, and Waipatukahu, and Riverhead. The statistics presented in</p>	Addressed in SIA Addendum.

	<p>Appendix B and summarized in Section 6.2.1 include all these areas, with the exception of the Riverhead area.</p> <p>Demographic statistical analysis to be expanded to include population by age group, deprivation index, and a profile of education and qualifications.</p> <p>Economic and employment statistics to be added to the analysis such as presentation of the economic profile of the area i.e. primary economic sectors; employment per sector and/or industry counts per employee, unemployment rate, NEET rate, etc.</p>	
<p>Section 6.2.2 – Future environment</p> <p>Figure 3.4 needs improvement. There is no legend for the map, a zoning key is required to explain the zoning categories, and communities are not identified on the map to provide the relevant context to the reader.</p>	<p>These improvements are required to ensure the map adds value to the readers understanding of the context being portrayed.</p>	<p>Addressed in SIA Addendum.</p>
<p>Section 6.3 – Local Community</p> <p>NoR 1 – Alternative State Highway including Brigham Creek</p> <ul style="list-style-type: none"> (1) Update Figure 3-6 by the adding the names of the communities and any other landmarks (2) The extent of the corridor (length) is not provided within the existing environment description. 	<p>Improvements are required to ensure the map adds value to the readers understanding of the context being portrayed.</p> <p>The extent of the corridor needs to be described to contextualise the scale of the project component.</p> <p>The description of the existing environment states that the majority of the existing local community is made up of rural properties and that zoning is either Mixed Rural, Rural Production or Countryside Living. A more detailed description of the current use of rural properties is</p>	<p>Addressed in SIA Addendum.</p>



<p>(3) Further information needs to be provided on the nature of the local community, in particular what proportion of the rural properties are used for rural production and what agricultural activities are prevalent.</p>	<p>required in order to understand the context in which the project is proposed to take place.</p>	
<p>NoR 2 – SH16 Main Road Upgrade</p> <p>(1) Update Figure 3-7 by the adding the names of the communities and any other landmarks</p> <p>(2) Whilst the report provides a detailed description of both township areas, further information needs to be provided on the nature of rural land use, in particular what extent of the section consists of rural properties, the nature of rural activities (i.e. lifestyle properties or agricultural production?).</p>	<p>Improvements are required to ensure the map adds value to the readers understanding of the context being portrayed.</p> <p>A more detailed description of the current use of rural properties is required in order to better understand this aspect of the current local community.</p>	<p>Addressed in SIA Addendum.</p>
<p>NoR 3 – Rapid Transit Network and Active Mode Corridor (including Kumeū & Huapai Transit Stations)</p> <p>(1) Update Figure 3-8 by the adding the names of the communities and any other landmarks</p>	<p>Improvements are required to ensure the map adds value to the readers understanding of the context being portrayed.</p> <p>A more detailed description of the current use of rural properties is required in order to better understand this aspect of the current local community. For example, are</p>	<p>Addressed in SIA Addendum.</p>

<p>(2) Provide details on the extent of the corridor (length, number of properties affected, etc. within the existing environment description.</p> <p>(3) Provide a description of the use of rural properties.</p>	<p>the rural properties largely lifestyle properties, or is agricultural production taking place.</p>	
<p>NoR 4 – Access Road Upgrade</p> <p>(1) Update Figure 3-9 to reflect key features on the map that are referenced in the description of the existing environment.</p>	<p>Improvements are required to ensure the map adds value to the readers understanding of the context being portrayed.</p>	<p>Addressed in SIA Addendum.</p>
<p>Identification, Description and Assessment of Social Impacts:</p>		
<p>Assessment of Social Impacts (Chapter 7)</p> <p>Overall, there are concerns around the assessment undertaken, largely as a result of the methodology applied and the structure of the chapter, but also in terms of the level of assessment detail provided. For this reason, comments have been provided at a broad level (rather than at a detailed level):</p> <p>(1) Potential positive and negative social impacts need to be</p>	<p>Overall, the assessment of impacts has some weaknesses:</p> <p>(1) Impacts are not clearly identified and assessed:</p> <ul style="list-style-type: none"> At a broad level, the chapter is structured in a way that impacts are broadly discussed collectively according to phase (route protection, construction, and operation), and then social area of influence (regional, wider community, and local community). Based on this structure it is difficult to identify what the individual impacts are, which stakeholders / groups are likely to be affected and 	<p>Assessment</p> <p>SIA Addendum provides a much-improved assessment of social impacts. The post mitigation assessment provides insight into the effectiveness of the mitigation and any potential residual impact. Whilst there might be some minor difference of opinion on the way in which some of the impacts have been assessed, there are no significant shortfalls of the assessment.</p>

<p>identified, described and assessed according to:</p> <ul style="list-style-type: none"> - Cause of the impact - Stakeholder / stakeholder group impacted - Consequence of the impact (determine through the individual consideration of extent, duration and magnitude) - Likelihood of the impact (estimation of probability) - Overall significance rating based on a risk assessment method that considers both consequence and likelihood. <p>(2) The assessment should consider socio-economic impacts and impacts on the business stakeholders.</p> <p>(3) The assessment needs to be considerably more specific in terms of identifying the specific effects on localised areas.</p> <p>(4) The structure of the chapter should be revisited. It is</p>	<p>the extent of the impact (i.e. number of properties, residents, businesses affected).</p> <ul style="list-style-type: none"> • The assessment has been undertaken on the categories of impacts and the impacts that fall within the categories have not been individually assessed i.e. “low-moderate negative impacts on way of life and health and wellbeing”. • The assessment section is in some cases fairly generic and is therefore unclear on specific impacts on localised areas. • Socio-economic impacts and impacts on business stakeholders within the area have not been identified, discussed or assessed. <p>(2) Stakeholders have not been clearly identified:</p> <ul style="list-style-type: none"> • Assessment is structured according to social area of influence i.e. a broad discussion is provided on the anticipated impacts on the ‘wider community’ or the ‘local community’. In the discussion, stakeholders are referenced as “people”, the “regional community” – it is not clear which stakeholders within the community are affected i.e. business community, rural residents, urban residents, etc. and some stakeholder may be affected to different extents and in different ways. • The extent of the impact on various stakeholder groups is not clear i.e. how many rural properties or business premises will be affected. 	<p>It is suggested that the following be reviewed and considered:</p> <p><u>NoR S1 (Alternative State Highway incl Brigham Creek Interchange)</u></p> <ul style="list-style-type: none"> - Temporary reduction in use of Fred Taylor Park for recreation – consider assessing the impact on the local community and West Coast Rangers Football Club and members separately. The impact may differ between these two stakeholder groups. <p><u>NoR S2 (SH16 Main Road Upgrade)</u></p> <ul style="list-style-type: none"> - Reduced business patronage on Main Road – consider loss of revenue for businesses as an impact. <p>Mitigation</p> <p>Mitigation and management measures have been identified. These are considered adequate, with the exception of the mitigation identified for the impact on / loss of recreational facilities. The mitigation outlined is as follows:</p> <p>In respect of Fred Taylor Park:</p> <p><i>“Conversations are currently underway with Auckland Council to determine how best to mitigate impacts on Fred Taylor Park – a preferred solution will be determined following detailed design.”</i></p>
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<p>recommended that the assessment be structured by impact, rather than by phase and area of influence. For example – the impact of “reduced access to properties” should be assessed for each phase in terms of the cause of the impact; groups impacted; and the consequence, likelihood and overall significance of the impact pre and post mitigation, and identification of the management and mitigation measures identified.</p> <p>(5) A mitigation chapter or mitigation table is needed that provides a description of all the management and mitigation measures and provides detail on each of these.</p>	<p>(3) The assessment undertaken does not use a risk assessment method as recommended in the IAIA and Waka Kotahi SIA guideline documents.</p> <p>(4) There is inconsistency in the how the discussion is presented by phase i.e. regional impacts and NoR route protection phase impacts have been discussed in discussion paragraphs, whilst NoR construction and operational impacts are presented in tables.</p> <p>(5) Management and mitigation measures are not adequately addressed:</p> <ul style="list-style-type: none"> • Impacts are not consistently assessed in terms of significance pre- and post- mitigation (no post mitigation assessment provided for regional impacts and route protection impacts) • It is not clear the extent to which the measures address the impact and whether there is a residual impact that remains <p>Mitigation measure are spread throughout the chapter and there is insufficient detail on the mitigation proposed.</p>	<p>In respect of Huapai Domain:</p> <p><i>“At the time this SIA was prepared discussions were underway with Auckland Council around appropriate mitigation for Huapai Domain – such as a reconfiguration of facilities at the Domain to allow activities to continue.</i></p> <p><i>In addition to these ongoing conversations, it is recommended that the West Coast Rangers and Kumeu Cricket Clubs are consulted to understand their needs with regards to the Domain and how these can be incorporated into the design of the preferred solution.”</i></p> <p>It is recommended that the mitigation identified be revisited, as ‘conversations’ are not considered adequate mitigation.</p>
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ATTACHMENT 07

**AUCKLAND COUNCIL
STRATEGIC TRANSPORT REQUEST**

Todd Elder

From: Todd Elder
Sent: Tuesday, 21 March 2023 5:16 pm
To: Todd Elder
Subject: FW: URGENT: Supporting Growth - Lodgment - Strategic

From: Anatole Sergejew
Sent: Tuesday, 24 January 2023 10:31 AM
To: Todd Elder <todd.elder@aucklandcouncil.govt.nz>
Cc: Andrew Temperley <andrew@trafficplanning.co.nz>
Subject: RE: URGENT: Supporting Growth - Lodgment - Strategic

Hi Todd

I have completed a preliminary review of the responses to the transport matters raised in my soft lodgment further information requests for the strategic projects.

First, I have a question. The strategic NORs have not been lodged as a package, but appear to have been lodged as six separate NORs, each with a separate Form 18.

Does this mean that the SGA has to show that each of the six individual project is reasonably necessary in its own right, rather than as a package?

I ask this because as far as I can see no work has been done on how the transport system would perform if individual components were excluded.

Also, I don't understand why there are separate NORs for the rapid transit corridor, and each station, when each of these 3 components makes no sense unless the other two are included.

In terms of identifying if any information not provided is necessary/critical, I have looked at this in two ways:

1. is the missing information necessary/critical to determine if the project is reasonably necessary?
2. Is the missing information necessary/critical in the understanding of the effects and how these will be mitigated?

Is the missing information necessary/critical to determine if the project is reasonably necessary?

Despite MSM, Saturn and SIDRA modelling being undertaken, the NOR AEE and assessment of transport effects and assessment of alternatives have almost no quantified information to show the projects are reasonably necessary. Figure 4.2 on page 34 of the Assessment of Transport Effects shows percentages predicted to result from the total package of projects. But without quantifying how bad things might be without the projects, it's hard to say if a 2%, 5%, 22% or 41% etc. improvement is actually necessary.

Appendix 2 of the Assessment of Transport Effects provides overall level of service for key intersections, and average delay, but does not clarify what the travel time will be to get through Kumeu and Huapai with and without the project, or what the delay will be to traffic seeking to enter the existing and ASH, so it is still unclear what the traffic effects will be.

Is the missing information necessary/critical in the understanding of the effects and how these will be mitigated?

No modelling work has been done on the effects of the staging or timing of construction. Yet Section 14.5 of the AEE indicates that "In terms of construction traffic effects, it is considered that there is sufficient network capacity to enable construction traffic", while Page 51 of the Assessment of Transport Effects suggests that should the RTC and Main Road upgrade "be delivered earlier in the staging of future growth in Kumeū-Huapai (when there is less overall transport demand) then the ASH may not be necessary in advance".

No evidence is presented to support these claims.

Table 9-7 of the AEE suggests the appropriate timing of construction of all project components is 2033-2037, while Section 9.1 (page) of the Assessment of Transport Effects advises "it is expected that short term temporary road closure for nights or weekends may be required for some specific activities"

No information is provided on the effects of the proposed timing (given that Kumeu-Huapai is already heaving congested at times) or of the effects of short term closures on weekends, when peak traffic volumes can be comparable to weekday peak traffic.

A separate issue is that the assessment against relevant AUP policy in Section 28 of the AEE still does not appear to address policies E27.2(3) and (4) (parking and loading) or E27.2(5) and (6) (pedestrian safety and the safe operation of road/rail; crossings).

These are my overarching concerns – I believe that they are substantive to my assessment of effects, and would appreciate your decision regarding whether the missing information listed above could be provided post notification.

Thanking you in anticipation

regards

Anatole

From: Todd Elder <todd.elder@aucklandcouncil.govt.nz>

Sent: Monday, 23 January 2023 9:13 AM

To: Robert Scott <robert@scottwilkinson.co.nz>; Hannah Milatovic <hannah.milatovic@aucklandcouncil.govt.nz>; Mica Plowman <Mica.Plowman@aucklandcouncil.govt.nz>; Jason Smith <jason.smith@morphum.com>; Susan Andrews <susan.andrews@aucklandcouncil.govt.nz>; Jon <jon@stylesgroup.co.nz>; Bridget Gilbert <bridget@bgl.a.nz>; Konigkramer, Hilary <Hilary.Konigkramer@wsp.com>; Anatole Sergejew <anatole@trafficplanning.co.nz>; Andrew Temperley <andrew@trafficplanning.co.nz>; lisa.mein <lisa.mein@mudp.co.nz>; Jennifer Esterman <jennifer.esterman@mudp.co.nz>; West Fynn <West.Fynn@aucklandcouncil.govt.nz>; Danny Curtis <danny.curtis@aucklandcouncil.govt.nz>; James Hendra <james@hendraplanning.co.nz>; Elise Caddigan <Elise.Caddigan@aucklandcouncil.govt.nz>; Bryce Hall <bryce@trafficplanning.co.nz>; Adonica Giborees <adonica.giborees@aucklandcouncil.govt.nz>; Alex Hall (Intermediate Planner) <alex.hall@aucklandcouncil.govt.nz>; Craig Cairncross <Craig.Cairncross@aucklandcouncil.govt.nz>; Warren Maclennan <Warren.Maclennan@aucklandcouncil.govt.nz>; Jo Hart <Jo.Hart@aucklandcouncil.govt.nz>; Jess Romhany <jess.romhany@aucklandcouncil.govt.nz>; Peter Vari <Peter.Vari@aucklandcouncil.govt.nz>; Holly Berry <holly.berry@aucklandcouncil.govt.nz>; Udit Bhatti <Udit@trafficplanning.co.nz>; Thomas Kear <Thomas@trafficplanning.co.nz>; Kedan Li <kedan.li@aucklandcouncil.govt.nz>; Sean Stirling <sean.stirling@aucklandcouncil.govt.nz>; Eryn Shields <Eryn.Shields@aucklandcouncil.govt.nz>; Bronnie Styles <Bronnie.Styles@aucklandcouncil.govt.nz>; Ben Willis <ben.willis@aucklandcouncil.govt.nz>; Sarah El Karamany <sarah.elkaramany@aucklandcouncil.govt.nz>; Susan Andrews <susan.andrews@aucklandcouncil.govt.nz>; Derek Foy <derek@me.co.nz>; John McKensey <john.mckensey@ldp.nz>; Peter Kensington <peter@kplc.co.nz>

Cc: Peter Vari <Peter.Vari@aucklandcouncil.govt.nz>; Warren Maclennan

<Warren.Maclennan@aucklandcouncil.govt.nz>; Chris Mallows <Chris.Mallows@aucklandcouncil.govt.nz>

Subject: URGENT: Supporting Growth - Lodgment - Local/Strategic/HIF

Importance: High

Kia ora all,

Supporting Growth has provided the attached response regarding the **strategic soft lodgment** of further information requests. Could you please review the relevant parts of the attached response relating to your area of expertise.

A quick turnaround review is required by **Tuesday (24 January 2023)** to meet the notification mail out process critical date of 26 January 2023.

Could you please confirm the following:

- does the response adequately address the matters raised in your soft lodgement further information requests
- if not, is the information that has not been provided substantive to your assessment of effects or could it be provided post notification i.e., **is it necessary/critical in the understanding of the effects and how these will be mitigated.**

Note that where there are differences in opinion, this can be addressed as an outstanding matter in the hearing reports and the subsequent hearings.

Please contact me if you have any questions or if there are any issues in making this deadline.

Kia pai tō rā

Todd Elder | Senior Policy Planner
Regional, North, West, Islands | Plans and Places
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Auckland Council, Level 24, 135 Albert Street, Auckland Central
Visit our website: www.aucklandcouncil.govt.nz

From: Todd Elder

Sent: Thursday, 22 December 2022 2:19 pm

To: Robert Scott <robert@scottwilkinson.co.nz>; Hannah Milatovic <hannah.milatovic@aucklandcouncil.govt.nz>; Mica Plowman <Mica.Plowman@aucklandcouncil.govt.nz>; Jason Smith <jason.smith@morphum.com>; Susan Andrews <susan.andrews@aucklandcouncil.govt.nz>; Jon <jon@stylesgroup.co.nz>; Bridget Gilbert <bridget@bgl.a.nz>; Konigkramer, Hilary <Hilary.Konigkramer@wsp.com>; Anatole Sergejew <anatole@trafficplanning.co.nz>; Andrew Temperley <andrew@trafficplanning.co.nz>; Lisa Mein <lisa.mein@mudp.co.nz>; Jennifer Esterman <jennifer.esterman@mudp.co.nz>; West Fynn <West.Fynn@aucklandcouncil.govt.nz>; Danny Curtis <danny.curtis@aucklandcouncil.govt.nz>; James Hendra <james@hendraplanning.co.nz>; Elise Caddigan <Elise.Caddigan@aucklandcouncil.govt.nz>; Bryce Hall <bryce@trafficplanning.co.nz>; Adonica Giborees <adonica.giborees@aucklandcouncil.govt.nz>; Alex Hall (Intermediate Planner) <alex.hall@aucklandcouncil.govt.nz>; Craig Cairncross <Craig.Cairncross@aucklandcouncil.govt.nz>; Warren Maclennan <Warren.Maclennan@aucklandcouncil.govt.nz>; Jo Hart <Jo.Hart@aucklandcouncil.govt.nz>; Jess Romhany <jess.romhany@aucklandcouncil.govt.nz>; Peter Vari <Peter.Vari@aucklandcouncil.govt.nz>; Holly Berry <holly.berry@aucklandcouncil.govt.nz>; Udit Bhatti <Udit@trafficplanning.co.nz>; Thomas Kear <Thomas@trafficplanning.co.nz>; Kedan Li <kedan.li@aucklandcouncil.govt.nz>; Sean Stirling <sean.stirling@aucklandcouncil.govt.nz>; Eryn Shields <Eryn.Shields@aucklandcouncil.govt.nz>; Bronnie Styles <Bronnie.Styles@aucklandcouncil.govt.nz>; Ben Willis <ben.willis@aucklandcouncil.govt.nz>; Sarah El Karamany <sarah.elkaramany@aucklandcouncil.govt.nz>; Susan Andrews <susan.andrews@aucklandcouncil.govt.nz>; Derek Foy <derek@me.co.nz>; John McKensey <john.mckensey@ldp.nz>

Cc: Peter Vari <Peter.Vari@aucklandcouncil.govt.nz>; Warren Maclennan

<Warren.Maclennan@aucklandcouncil.govt.nz>; Chris Mallows <Chris.Mallows@aucklandcouncil.govt.nz>

Subject: Supporting Growth - Lodgment - Local/Strategic/HIF

Kia ora team,





Here is an excellent email for the last working Thursday of the year! Firstly, thank you again for all the work that has been completed to date.

Supporting Growth lodged the last of the 19 NoRs yesterday afternoon. We are now at the stage of requesting further information via Section 92.

For some topics, we have had extensive pre-engagement with SGA, and hopefully, this process has reduced any requests from us.

SGA will likely provide a document that will assist the team with finding where they have addressed soft-lodgement requests. I have only received one for the HIF NoRs, but I will let you know when the other documents arrive. For the time being, we will begin this process.

On the week of 9 January 2023, I will also be in contact with those Planners that will be leading the processing for these projects.

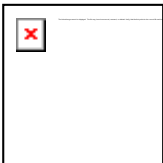
Post Lodgement Task 1: s.92 Request
Can you please complete your section 92 request for the NoRs allocated to you. Can you please fill in the attached template for your requests and adjust the NoR referencing where necessary.
Due: 22 January 2023
 01 Supporting Growth Alliance Lodged Files
 HIF - Local NoRs
 Supporting Growth - Local NoRs
 Strategic NoRs

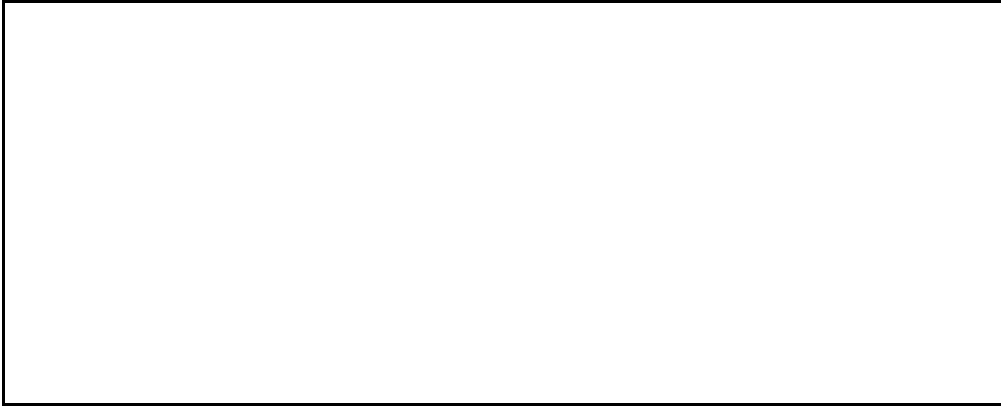
If you are unable to meet this due date, please get in contact as soon as you can to arrange an alternative timeline. And please reach out if you have any concerns or questions.

Have a great break, and I look forward to working with you in the new year.

Kia pai tō rā

Todd Elder | Senior Policy Planner
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ATTACHMENT 08

**SUPPORTING GROWTH ALLIANCE
NORTH-WEST HERITAGE SECTION 92 RESPONSE**

Memorandum

To:	Auckland Council
From:	Supporting Growth (John Brown, Heritage Specialist, John Daly, Planner, Bridget O'Leary Planner)
Date:	13 March 2023
Subject:	Section 92: Request for further information (Heritage Matters)

The following heritage information has been provided in response to requests for further information from Auckland Council's heritage specialist. Information has been requested in regard to the following matters:

- A. To identify any extant pre-1940 built heritage sites and their potential historic heritage values within the proposed designation footprint and 200m buffer.
- B. Specific information on 42 Boord Crescent.
- C. Specific information on the proposal for the scheduled historic heritage places, being: Huapai Tavern (AUP(OIP) ID 00482) and the Kumeu Railway Station Goods Shed (AUP(OIP) 0048).

In relation to Point A., the section 92 request has asked for additional information on built heritage sites within the 200m buffer zone. However, the majority of the 'Built Heritage' places are not within Designation boundaries and will not be physically affected by development within the Notice of Requirement (NoR) boundary, and their setting will not be affected to the extent that further assessment is justified. Therefore, commentary and a recommendation has been provided in Tables 2 to 6 only for those sites where the heritage site will be impacted in a meaningful way.

In relation to Point C., reference should be made to the North West Strategic Assessment of Historic (Built) Heritage Effects which deals with both the Huapai Tavern (AUP(OIP) ID 00482) and the Kumeu Railway Station Goods Shed (AUP(OIP) 0048). The proposed Historic Heritage Management Plan for NoR S3 should also be reviewed.

This memorandum covers the heritage matters for the following NOR packages for North West Local Arterials, North West Redhills Riverhead Arterials, HIF Trig Road and HIF Redhills Arterials, and North West Strategic. The further information should be read in conjunction with:

- North West Strategic Assessment of Historic (Built) Heritage Effects
- North West Strategic Assessment of Heritage / Archaeology Effects
- North West Local Whenuapai Assessment of Heritage / Archaeology Effects
- North West Redhills Local Riverhead Assessment of Effects on Heritage / Archaeology
- HIF Trig Road Corridor Upgrade Assessment of Historic Heritage Effects
- HIF Redhills Arterial Transport Network Assessment of Historic Heritage Effects

Table 1 Auckland Council s92 Request Table with Built Heritage Response

NoR#	NoR name	Category of information	Specific Request	Reasons for request	Built Heritage Response
North West Strategic					
S2	State Highway 16	Study list	Pre-1940 built heritage study list.	To identify any extant pre-1940 built heritage sites and their potential historic heritage values within the designation and 200m buffer.	<p>Identification of several pre-1940 sites has already been undertaken in the following report:</p> <p><i>North West Strategic Assessment of Heritage / Archaeology Effects December 2021 Version 1</i></p> <p>It is beyond the reasonable scope to the project to undertake detailed historic heritage evaluations for any pre-1940 place within 200m of the proposed designation. Especially where such places do not fall within the designation boundary.</p> <p>Specific sites identified for further consideration in this assessment where there is reasonable opportunity for impact on potential heritage values are included in the tables following.</p>
S3	Rapid Transit Corridor, incl the Regional Active Mode Corridor	Study list	Pre-1940 built heritage study list.	To identify any extant pre-1940 built heritage sites and their potential historic heritage values within the designation and 200m buffer. Note that the provided information on 42 Boord Crescent is insufficient.	<p>Identification of several pre-1940 sites within buffer zones has already been undertaken in the following report:</p> <p>North West Strategic Assessment of Heritage / Archaeology Effects December 2021 Version 1.</p>
S3	Rapid Transit Corridor, incl the Regional Active Mode Corridor	Determination of option(s)	Detailed information of proposal for the scheduled historic heritage places, being: Huapai Tavern (AUP(OIP) ID 00482) and the Kumeu Railway Station Goods Shed (AUP(OIP) 0048). Location of the non-scheduled historic railway carriages is currently unknown.	<p>Total or substantial demolition and relocation within or outside of the historic heritage extent of place of the Huapai Tavern and would result in significant adverse effects. The Assessment of Historic (Built) Heritage (J. Brown, Dec 2022) outlines a number of options; however, determination of which option is required for assessment and mitigation discussion and cannot be left for detailed design.</p> <p>Relocation of the Kumeu Railway Station Goods Shed is likely supportable given its relocation history. Confirmation of relocation site is necessary for historic heritage effects assessment.</p> <p>Advice was provided by the Heritage Unit in December 2020 which I reiterated in November 2022. A meeting to discuss built heritage was proposed but did not occur. The Huapai Tavern is the only original scheduled historic heritage place in the locality and its retention is essential.</p>	<p>The purpose of the NoRs in the North West packages is to designate land now for future implementation of the required transport corridors and infrastructure when it is necessary to service the future growth anticipated in the North West. Resource consents are not being sought at this stage and will be sought closer to implementation.</p> <p>Detailed design drawings have therefore not been produced and will be produced closer to implementation. The design of the NoRs therefore seeks to retain some flexibility in terms of future implementation, including in relation to mitigation.</p> <p>The route alignment is constrained due to the existing rail and road alignments. For this reason, the potential demolition of some or all of the Huapai Tavern and Kumeū Goods Shed structures is necessary, unless they can be relocated either within their current sites or elsewhere.</p> <p>The spatial sketch provided in the built heritage assessment demonstrates that it is feasible to partially relocate the Huapai Tavern (the significant historic component) within the space required for the NoR.</p> <p>Subsequent relocation would be provided for through the NoR conditions, in particular through the implementation of a HHMP. The HHMP condition will require the tavern to be appropriately re-located within the footprint of designation in a manner that respects the heritage value of the buildings. This will avoid the demolition of the building and will mitigate adverse effects</p> <p>See Appendix 1 – model conditions.</p>

NoR#	NoR name	Category of information	Specific Request	Reasons for request	Built Heritage Response
Whenuapai Local Arterials					
W1	Trig Road North upgrade	Study list	Pre-1940 built heritage study list.	To identify any extant pre-1940 built heritage sites and their potential historic heritage values within the designation and 200m buffer. Built heritage is a separate expertise to archaeology.	It is beyond the reasonable scope to the project to undertake detailed historic heritage evaluations for any pre-1940 place identified within 200m of the proposed designation. Especially where such places do not fall within the designation boundary. As noted above, specific sites identified for further consideration are included in the tables following.
W2	Mamari Road (FTN) upgrade	Study list	Pre-1940 built heritage study list.	To identify any extant pre-1940 built heritage sites and their potential historic heritage values within the designation and 200m buffer. Built heritage is a separate expertise to archaeology.	It is beyond the reasonable scope to the project to undertake detailed historic heritage evaluations for any pre-1940 place identified within 200m of the proposed designation. Especially where such places do not fall within the designation boundary. As noted above, specific sites identified for further consideration are included in the tables following.
W3	Brigham Creek Road upgrade	Study list	Pre-1940 built heritage study list.	To identify any extant pre-1940 built heritage sites and their potential historic heritage values within the designation and 200m buffer. Built heritage is a separate expertise to archaeology.	It is beyond the reasonable scope to the project to undertake detailed historic heritage evaluations for any pre-1940 place identified within 200m of the proposed designation. Especially where such places do not fall within the designation boundary. As noted above, specific sites identified for further consideration are included in the tables following.
W4	Spedding Road (East and West)	Study list	Pre-1940 built heritage study list.	To identify any extant pre-1940 built heritage sites and their potential historic heritage values within the designation and 200m buffer. Built heritage is a separate expertise to archaeology.	It is beyond the reasonable scope to the project to undertake detailed historic heritage evaluations for any pre-1940 place identified within 200m of the proposed designation. Especially where such places do not fall within the designation boundary. As noted above, specific sites identified for further consideration are included in the tables following.
W5	Des 1437 Hobsonville Road (alteration)	Study list	Pre-1940 built heritage study list.	To identify any extant pre-1940 built heritage sites and their potential historic heritage values within the designation and 200m buffer. Built heritage is a separate expertise to archaeology.	It is beyond the reasonable scope to the project to undertake detailed historic heritage evaluations for any pre-1940 place identified within 200m of the proposed designation. Especially where such places do not fall within the designation boundary. As noted above, specific sites identified for further consideration are included in the tables following.
Redhills and Riverhead Local Arterials					
R1	Coatesville Riverhead Highway Upgrade	Study list	Pre-1940 built heritage study list.	To identify any extant pre-1940 built heritage sites and their potential historic heritage values within the designation and 200m buffer. Built heritage is a separate expertise to archaeology.	It is beyond the reasonable scope to the project to undertake detailed historic heritage evaluations for any pre-1940 place identified within 200m of the proposed designation. Especially where such places do not fall within the designation boundary. As noted above, specific sites identified for further consideration are included in the tables following.

NoR#	NoR name	Category of information	Specific Request	Reasons for request	Built Heritage Response
RE1	Don Buck Road (FTN) Upgrade	Study list	Pre-1940 built heritage study list.	To identify any extant pre-1940 built heritage sites and their potential historic heritage values within the designation and 200m buffer. Built heritage is a separate expertise to archaeology.	It is beyond the reasonable scope to the project to undertake detailed historic heritage evaluations for any pre-1940 place identified within 200m of the proposed designation. Especially where such places do not fall within the designation boundary. As noted above, specific sites identified for further consideration are included in the tables following.
RE2	Des 1433 – Fred Taylor Drive Transport Corridor	Study list	Pre-1940 built heritage study list.	To identify any extant pre-1940 built heritage sites and their potential historic heritage values within the designation and 200m buffer. Built heritage is a separate expertise to archaeology.	It is beyond the reasonable scope to the project to undertake detailed historic heritage evaluations for any pre-1940 place identified within 200m of the proposed designation. Especially where such places do not fall within the designation boundary. As noted above, specific sites identified for further consideration are included in the tables following.
Housing Infrastructure Fund (HIF) – Redhills Arterial Transport Networks					
NoR1	Redhills North-South	Study list	Pre-1940 built heritage study list.	To identify any extant pre-1940 built heritage sites and their potential historic heritage values within the designation and 200m buffer. Built heritage is a separate expertise to archaeology.	It is beyond the reasonable scope to the project to undertake detailed historic heritage evaluations for any pre-1940 place identified within 200m of the proposed designation. Especially where such places do not fall within the designation boundary. As noted above, specific sites identified for further consideration are included in the tables following.
NoR2a	Redhills – East-West – Dunlop Road	Study list	Pre-1940 built heritage study list.	To identify any extant pre-1940 built heritage sites and their potential historic heritage values within the designation and 200m buffer. Built heritage is a separate expertise to archaeology.	It is beyond the reasonable scope to the project to undertake detailed historic heritage evaluations for any pre-1940 place identified within 200m of the proposed designation. Especially where such places do not fall within the designation boundary. As noted above, specific sites identified for further consideration are included in the tables following.
NoR2b	Redhills East-West Corridor – Baker Lane	Study list	Pre-1940 built heritage study list.	To identify any extant pre-1940 built heritage sites and their potential historic heritage values within the designation and 200m buffer. Built heritage is a separate expertise to archaeology.	It is beyond the reasonable scope to the project to undertake detailed historic heritage evaluations for any pre-1940 place identified within 200m of the proposed designation. Especially where such places do not fall within the designation boundary. As noted above, specific sites identified for further consideration are included in the tables following.
NoR2c	Redhills East-West – Nixon Road Connection	Study list	Pre-1940 built heritage study list.	To identify any extant pre-1940 built heritage sites and their potential historic heritage values within the designation and 200m buffer. Built heritage is a separate expertise to archaeology.	It is beyond the reasonable scope to the project to undertake detailed historic heritage evaluations for any pre-1940 place identified within 200m of the proposed designation. Especially where such places do not fall within the designation boundary. As noted above, specific sites identified for further consideration are included in the tables following.

NoR#	NoR name	Category of information	Specific Request	Reasons for request	Built Heritage Response
HIF – Trig Road					
Trig Road	Trig Road Corridor upgrade	Study list	Pre-1940 built heritage study list.	To identify any extant pre-1940 built heritage sites and their potential historic heritage values within the designation and 200m buffer. Built heritage is a separate expertise to archaeology.	<p>It is beyond the reasonable scope to the project to undertake detailed historic heritage evaluations for any pre-1940 place identified within 200m of the proposed designation. Especially where such places do not fall within the designation boundary.</p> <p>As noted above, specific sites identified for further consideration are included in the tables following.</p>

NW Whenuapai Package – Summary and Map locations

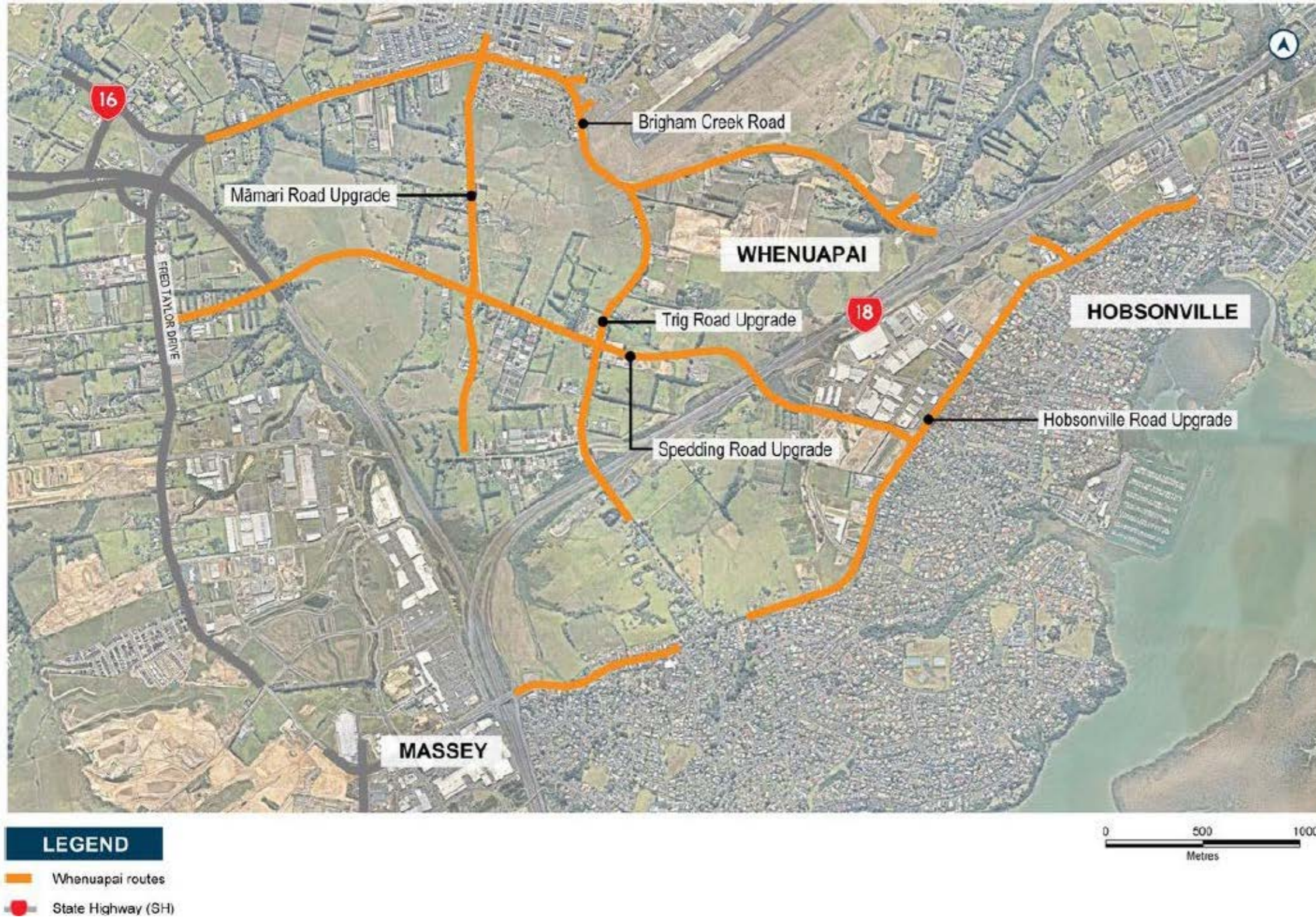


Figure 2. Whenuapai Overview of NoR Corridors

Corridor	NOR	Description	Requiring Authority	Corridor	NOR	Description	Requiring Authority
Trig Road North	NoR W1	Upgrade of Trig Road corridor to a 24m wide two-lane urban arterial cross-section with separated active mode facilities on both sides of the corridor.	Auckland Transport				
Māmari Road	NoR W2	Extension and upgrade of Māmari Road corridor to a 30m wide four-lane urban arterial cross-section providing bus priority lanes and separated active mode facilities on both sides of the corridor.	Auckland Transport				
Brigham Creek Road	NoR W3	Upgrade of Brigham Creek Road corridor to a 30m wide four-lane arterial cross-section with separated active mode facilities on both sides of the corridor.	Auckland Transport				
Spedding Road	NoR W4	Upgrade of the existing Spedding Road corridor and new east and west extensions to form a 24m wide two-lane arterial with separated active mode facilities on both sides of the corridor.	Auckland Transport				
				Hobsonville Road (alteration to existing designation 1437)	NoR W5	Alteration of the existing Hobsonville Road designation 1437 to provide for the widening of the Hobsonville Road corridor between Oriel Avenue and Memorial Park Lane. Upgrade of sections of Hobsonville Road corridor to a 30m wide four-lane cross section with separated active mode facilities on both sides of the corridor Upgrade of sections of Hobsonville Road corridor to a 24m wide two-lane cross section with separated active mode facilities on both sides of the corridor.	Auckland Transport

Figure 2 Whenuapai Overview of NoRs

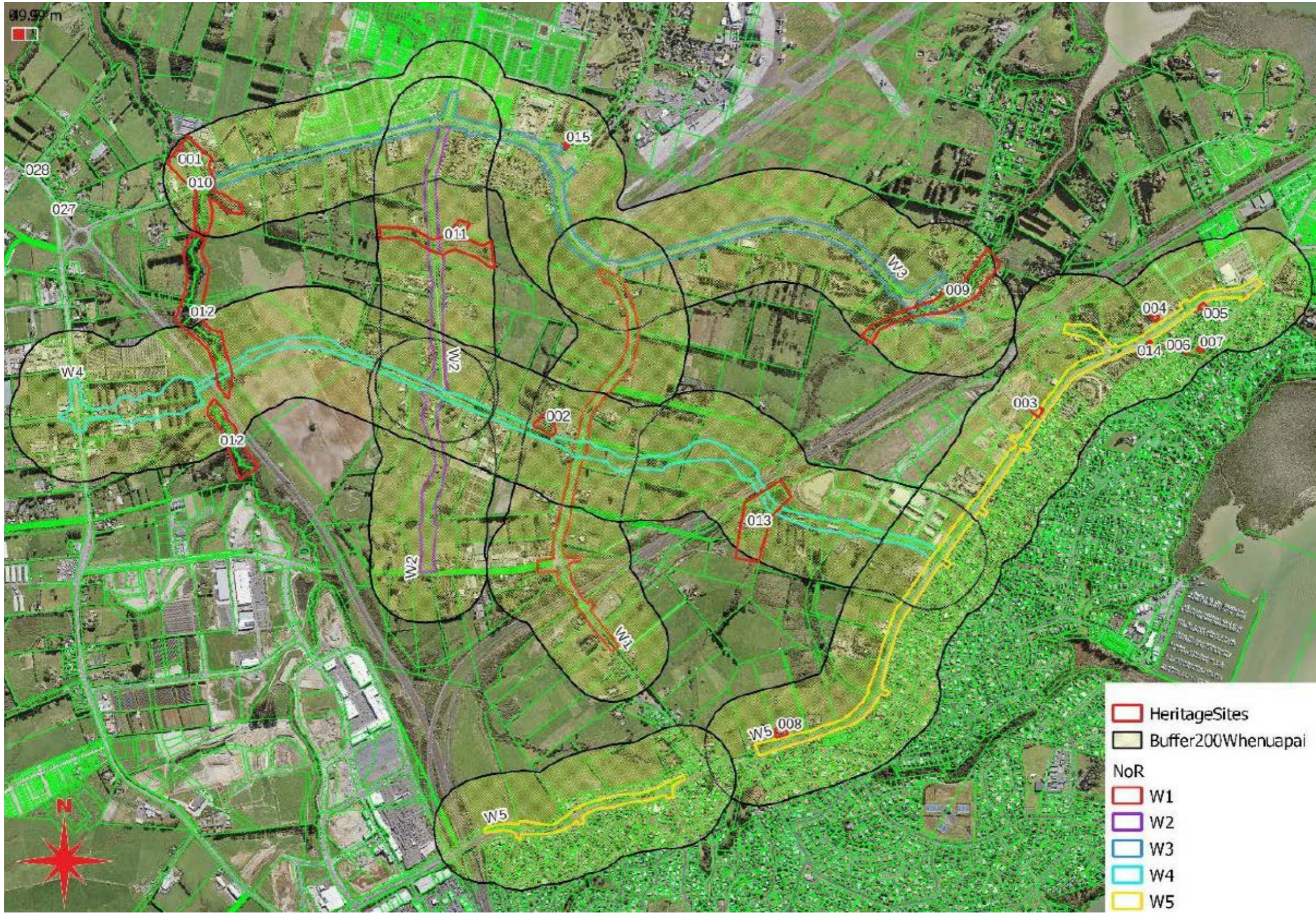



Figure 3. Survey Areas and 200m Buffer Zones – Whenuapai NoRs from the Northwest Whenuapai Assessment of Heritage / Archaeology Effects December 2022

Table 2 Whenuapai – Further Information on selected pre-1940 built heritage sites within the proposed designation footprint and 200m buffer.

NoR	Located	CHI ref	Item / site type	Image location reference	Identified / potential heritage values (where known)	Comment	Recommendation
W1 / W4	Within 200m buffer	20469	WW2 Gun Emplacement		<p>Archaeological site</p> <p>This WWII anti air defence site was proposed for scheduling under Plan Change 5, however the plan change has been withdrawn. This includes the proposed heritage overlay.</p>	<p>Unaffected physically by the designation as works are limited to the frontage of the site.</p> <p>Noi impact on technological / knowledge values.</p> <p>No effects on context values.</p> <p>Note.</p>	No mitigation is recommended for this site.
W5	Within NoR footprint	3496	Hobsonville Hall 397 Hobsonville Road LOT 1 DP 60620		<p>CHI records the sites as vertical weatherboarding, clay tile roof 1940 - 1950, corrugated iron roof at front. The place is not scheduled or included on the HNZ National List. The building is a modest, structurally and architecturally unremarkable example of a community hall from the mid-19th century. It has a minor landmark presence as a communal building at a T-junction with Sinton Road. Likely to have at least moderate historical and social values as a place of community activity since c. 1940.</p>	<p>This building has already been discussed in the following report: <i>North West Whenuapai Assessment of Heritage / Archaeology Effects December 2022. Version 1.0</i></p> <p>The Hobsonville Hall (005 in the graphics) is recorded in the CHI (3496) but has not been scheduled in the AUP:OP and is not considered an archaeological site as it was built after 1900. It is outside the footprint of the proposed development, the NoR design does not impact the building, and it would therefore have no effect on historical context or social values that may be associated with place.</p>	<p>The building is able to remain onsite and is physically unaffected by NoR requirements. Upgrades are likely to improve the immediate street environment of the hall, supporting any landmark (aesthetic) values.</p> <p>Provided standard construction management processes are adopted to minimise risk of accidental damage, no adverse effects are likely to arise as a result of the NoR or any future construction activities arising.</p> <p>No further assessment work is recommended for this site.</p>
W4	Within 200m buffer	3385	Residential Property, 1 Williams Road		<p>Single storey, hip roof wooden building with verandahs. Mature trees outside. 1880s construction date estimated.</p> <p>Scheduled Historic heritage Place – AUPOP id 71 - Category B – A (historical), F (physical Attributes), G (Aesthetic).</p>	<p>The property is physically unaffected as it is not within the NoR footprint.</p> <p>The property qualifies as a Pre-1900 archaeological site due to the date of original occupation.</p> <p>The NoR enables street upgrades which are appropriate in the context of the established urban nature of the immediate environment and which will</p>	No mitigation is recommended for this site.

NoR	Located	CHI ref	Item / site type	Image location reference	Identified / potential heritage values (where known)	Comment	Recommendation
						not detract from the heritage values of 1 William Street.	
W4	Williams Road Rd Reserve Adjacent no.3 Williams Road	2299 3629	Notable Tree Historic Plaque		The initial HIA records a notable tree with a bronze plaque next to it (CHI# 2299 and 3629, Notable trees of the AUP:OP #1811). This is a gum tree which is described in a plaque at the base of the tree to have been possibly planted by Governor Hobson in the middle of the 19th century.	Provides additional context to the scheduled house at 1 Williams Road. See above.	No mitigation is recommended for this site.
W5	N/A	3702	Building (moved to new location)		The HIA notes: A building across the road (004) is recorded on the CHI (3702) and as archaeological site R11/2965. As part of developing the New World supermarket this building was moved to a new location and the footprint investigated (Hawkins and Campbell 2020).	The proposed development will have no impact on this site.	No mitigation is recommended for this site.

NW Redhills / Riverhead Package



Figure 4 Redhills Overview of NoR Corridors

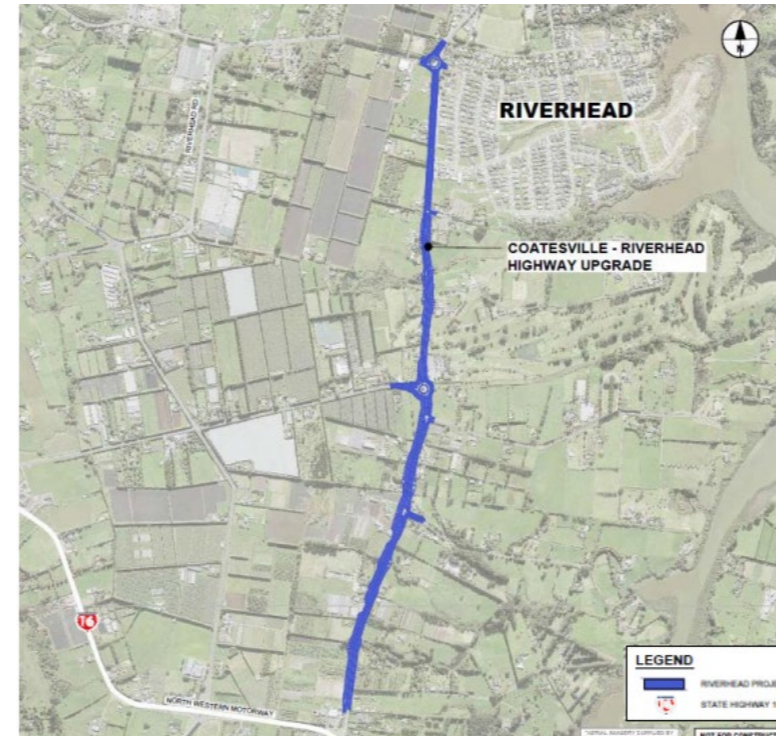


Figure 6 Riverhead Overview of NoR Corridor

Corridor	NOR	Description	Requiring Authority
Don Buck Road FTN Upgrade	RE1	Upgrade of Don Buck Road corridor to a 30m wide four-lane cross-section providing bus priority lanes and separated active mode facilities on both sides of the corridor.	Auckland Transport
Fred Taylor Drive FTN Upgrade	RE2	Upgrade of Fred Taylor Drive corridor to a 30m wide four-lane cross-section providing bus priority lanes and separated active mode facilities on both sides of the corridor.	Auckland Transport
Coatesville-Riverhead Highway Upgrade	R1	Upgrading the southern section of the corridor to a 33m two-lane low speed rural arterial cross-section with active mode facilities on the western side; and Upgrading the northern section of the corridor to a 24m two-lane urban arterial cross-section with active mode facilities on both sides of the corridor.	Auckland Transport

Figure 5 Redhills / Riverhead Overview of NoRs



Figure 7 Survey Areas and 200m Buffer Zones – Redhills / Riverhead NoRs from the Northwest Whenuapai Assessment of Heritage / Archaeology Effects December 2022

Table 3 Redhills / Riverheadi – Further Information on selected pre-1940 built heritage sites within the proposed designation footprint and 200m buffer.

NoR	Located	CHI ref	Item / Site Type	Image Location reference	Identified / potential heritage values (where known)	Comment	Recommendation
RE2	Within NoR footprint	20445	Aircraft Crash Site	N/A	20 th century Archaeological site	This site is addressed in the archaeological assessment.	No mitigation is recommended for this site.
RE2	Within 200m buffer	2164 2165	Trees	N/A	N/A	The trees are physically unaffected as they are not within the NoR footprint.	No mitigation is recommended for this site.

North West Strategic Package overview for reference

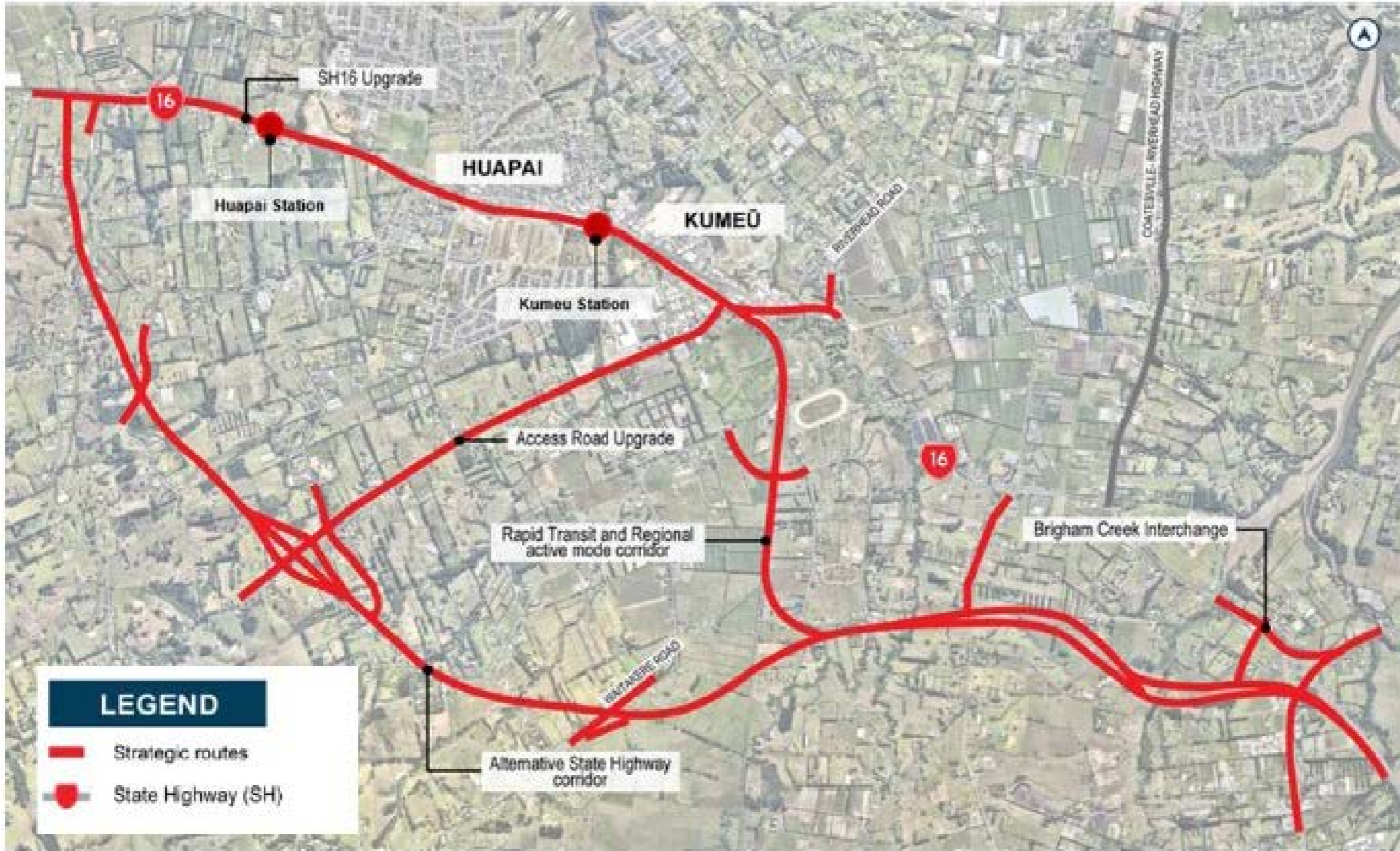


Figure 6 Strategic Overview of NoR corridors

Corridor	NOR	Description	Requiring Authority
Alternative State Highway	S1	A new four-laned dual carriageway motorway and the upgrade of Brigham Creek Interchange.	Waka Kotahi
State Highway 16 Main Road Upgrade (alteration to existing designation 6766)	S2	Upgrade to urban corridor including active modes and realignment of Station Road intersection with SH16.	Waka Kotahi
Rapid Transit Corridor	S3	New Rapid Transit Corridor and active mode corridor in one co-located corridor.	Waka Kotahi
Kumeū RTC Station	KS	New rapid transit station, including transport interchange facilities and accessway.	Waka Kotahi
Huapai RTC Station	HS	New rapid transit station, including transport interchange facilities, park and ride and accessway.	Waka Kotahi
Access Road Upgrade	S4	Upgrade of Access Road to a four-lane cross-section with separated cycle lanes	Auckland Transport

Figure 7 Strategic Overview of NoRs

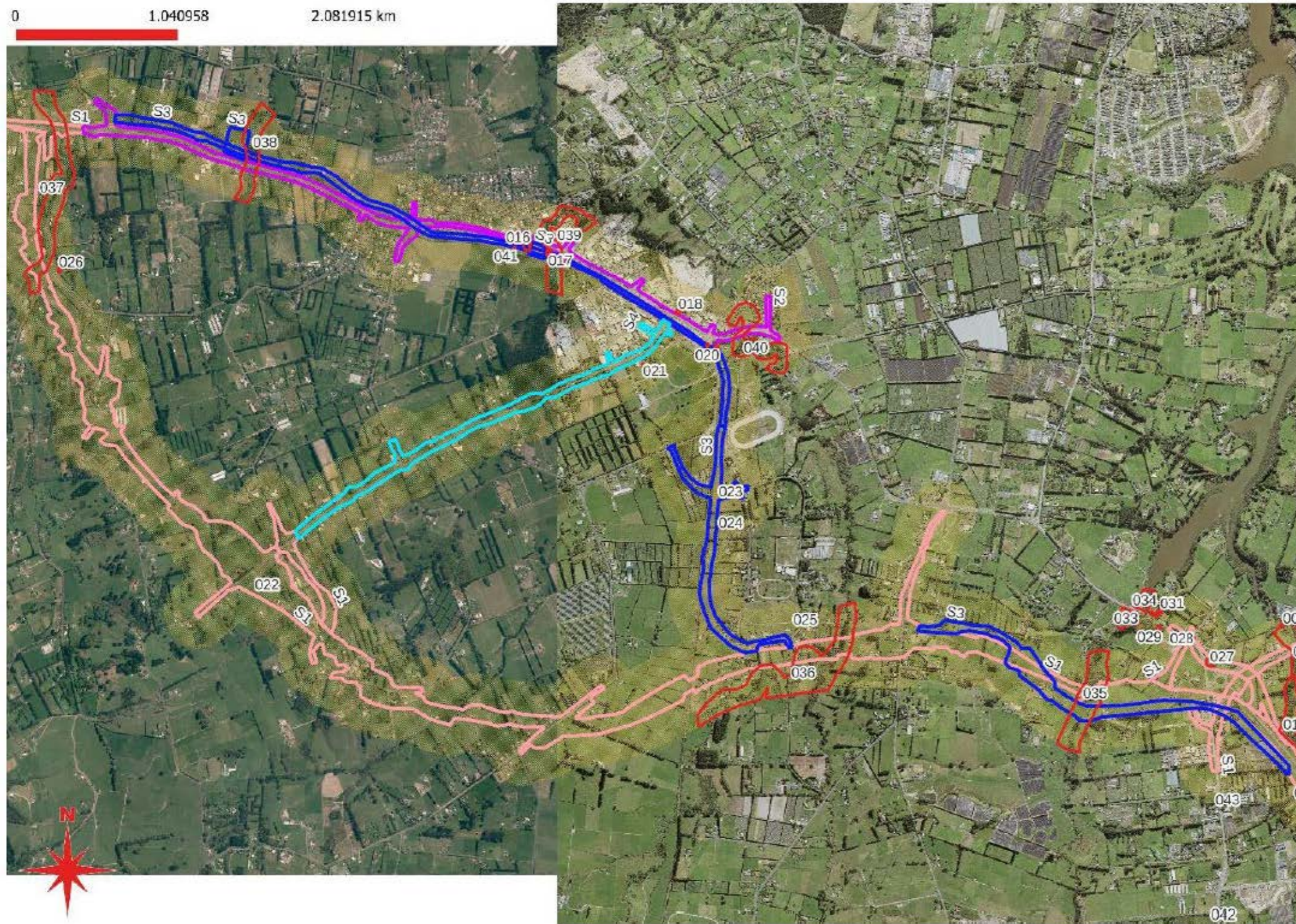
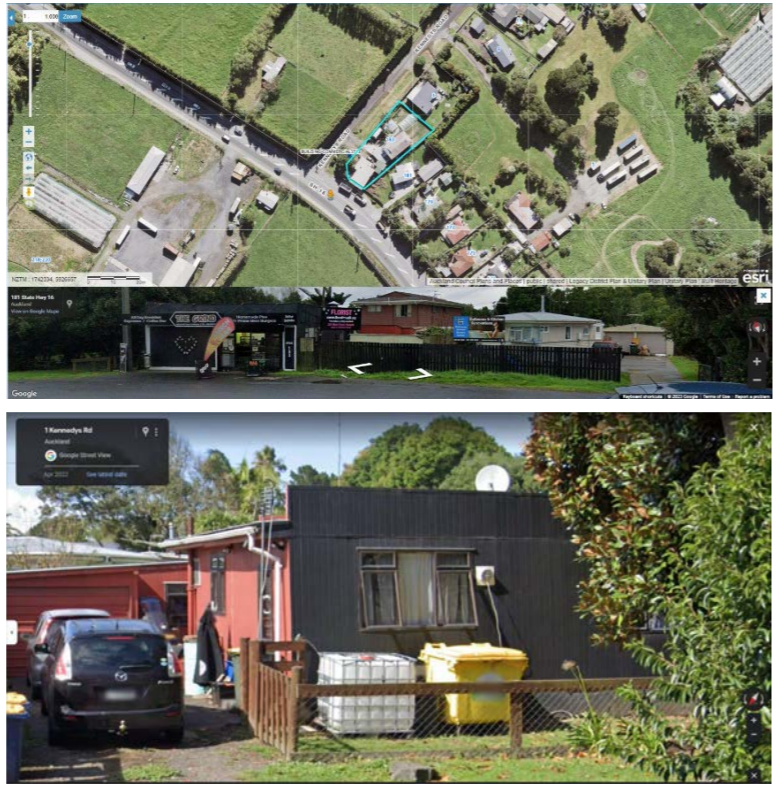

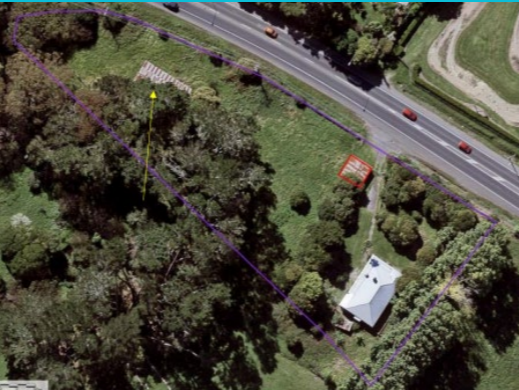



Figure 8 Survey Areas and 200m Buffer Zones – Strategic NoRs from the Northwest Strategic Assessment of Heritage / Archaeology Effects December 2022

NW Strategic Package – Identified CHI sites.



Table 4 Strategic Package – Further Information on selected pre-1940 built heritage sites within the proposed designation footprint and 200m buffer.

NoR	Located	CHI ref	Item	Image Location reference	Identified / potential heritage values (where known)	Comment	Recommendation
S1	Within NoR footprint 183 SH16	3713	Sun Kwong Takeaways (post 1940)		<p>The building has been identified previously by Mathews and Mathews Architects as a potential Historic Structure - Timber shop front in the following report:</p> <p><i>WHENUAPAI STRUCTURE PLAN AREA: PRELIMINARY HISTORIC HERITAGE ASSESSMENT</i></p> <p><i>Report prepared for Auckland Council By Clough & Associates Ltd and Matthews & Matthews Architects Ltd June 2016.</i></p> <p>A general recommendation was made as to 19 properties not scheduled but recorded on chi:</p> <p><i>further research and assessment to confirm their history, current status and heritage significance in order to determine whether they merit protection through scheduling on the Unitary Plan.</i></p>	<p>The subject site has been recorded on the CHI but not apparently selected for further evaluation as a scheduled historic heritage place since that date. It has been modified over time and exhibits little architectural interest.</p> <p>The CHI notes only:</p> <p>Timber shop front, art deco parapet, alum(inium) windows an older shop for area.</p> <p>The NoR requirements will result in a modified road frontage and pedestrian access. At the junction with Kennedy Road. The building itself is outside of the NoR designation requirement.</p> <p>On completion of work the building can remain, with an improved public realm.</p>	No mitigation is recommended for this site.
S1	Within 200m buffer 222a SH16	3486	Historic house (Sinton homestead)		<p>222A State Highway 16, Whenuapai – Alexander Sinton House One historical building is located at 222A SH16 (CHI ref 3486) and has been previously evaluated by Auckland Council and recommended for inclusion in Schedule 14.1 as a Category B historic place, noted for historical (a), and context (h) historic heritage values. (Auckland Council 2017b).</p> <p>The recommended Extent of Place proposed by Auckland Council in their historic heritage evaluation is shown below:</p>	<p>The upgrade of SH16, and potentially ecological mitigation, will affect the setting of the house, but there will be no physical effects arising on the house itself, which is in reality the primary feature of the historic heritage place.</p> <p>An ancillary building (Farm shed) of little heritage value and in very poor physical condition will be removed. Note the shed is due to be removed as a result of a separate SH16 Safety Improvement Project. The shed is therefore unlikely to be present at the time of implement the ASH and RTC.</p>	Any adverse direct and indirect effects on historic heritage sites and Measures to mitigate any adverse effects will be developed, via the HHMP.

NoR	Located	CHI ref	Item	Image Location reference	Identified / potential heritage values (where known)	Comment	Recommendation
					 <p>Image: Auckland Council Historic Heritage Evaluation figure showing Recommended 'Extent of Place' for 222A SH16, Alexander Sinton Homestead (former); with more recent garage (now demolished) outlined in red recommended as exclusions. The possible early shed is arrowed yellow (Auckland Council 2017b¹).</p>		
S1	Within 200m buffer 191 SH16	3379	Historic house (Sinton homestead)		<p>One historical building is located at 191 SH16 (CHI ref 3379), and has been previously evaluated by Auckland Council and recommended for inclusion in Schedule 14.1 as a Category B historic place, noted for historical (a) and context (h) historic heritage values (Auckland Council 2017a²). The recommended Extent of Place proposed by Auckland Council in their historic heritage evaluation report is shown below:</p>	<p>The upgrade of SH16, and potentially ecological mitigation, will affect the setting of the house, but there will be no physical effects arising on the house itself, which is in reality the primary feature of the historic heritage place.</p>	<p>No recommendations other than to comply with the proposed tree management plan condition.</p>



¹ Historic Heritage Evaluation: Janet Sinton's homestead (former). 191 State Highway 16, Whenuapai.



² Historic Heritage Evaluation Alexander Sinton's homestead (former) 222A State Highway 16, Whenuapai




NoR	Located	CHI ref	Item	Image Location reference	Identified / potential heritage values (where known)	Comment	Recommendation
					 <p>Image - Auckland Council Historic Heritage Evaluation figure showing Recommended 'Extent of Place' for 191 SH16, Janet Sinton Homestead (former); with more recent outbuildings outlined in red recommended as exclusions (Auckland Council 2017a).</p>		
S1	Within 200m buffer 238 SH16	13241	Historic house (Sinton house)		<p>Sinton House is included in the Auckland Unitary Plan Operative in Part (AUPOP) Schedule 14.1 Historic Heritage, as a Category B historic heritage place (AUPOP ID 525;). It is described in the schedule³.</p> <p>The Heritage Values for which the place is recognised are:</p> <ul style="list-style-type: none"> (A) Historical Associations (B) Social Values (D) Knowledge Values (F) Physical Attributes (H) Context Values T <p>The subject site is also included on the Auckland Council Cultural Heritage Inventory (CHI ref 13241).</p>	<p>The setting of the house will potentially be affected by ecological mitigation. There will be no physical effects arising on the house itself, which is in reality the primary feature of the historic heritage place.</p> <p>The planting will complement the landscape form already regenerating around the creek banks. Once landscaping has matured, a similar experience to the current view might be expected, where the existing hedging partially obscures views to the house.</p>	<p>Any adverse direct and indirect effects on historic heritage sites and Measures to mitigate any adverse effects will be developed, via the HHMP.</p>





ID	Name / Description	Verified Address	Verified Legal Description	Category	Primary Feature	Heritage Values	Extent of Place	Exclusions	Additional Rules for Archaeological Sites or Features	Place of Māori Interest or Significance
525	Sinton House (former)	238 State Highway 16, Taupaki	LOT 1 DP 326070	B		A,B,D,F,H	Refer to planning maps	Interior of building(s)		



3



NoR	Located	CHI ref	Item	Image Location reference	Identified / potential heritage values (where known)	Comment	Recommendation
S1	Within 200m buffer	16380	Historic house (Mainly post 1940) 186 Boord Crescent		The property contains part of an early 20 th century bay cottage/villa of English Arts Crafts influence. It has been dramatically added to such that it now forms a wing of a much larger building.	Building is within the 200m buffer but unaffected by the project.	No mitigation is recommended for this site.
S1	Within NoR footprint	16387	Historic house 2 Pomona Rd		<p>The Strategic HIA notes: One historic house (#022), possibly of late 19th century origin is within the extent of the NoR. Both the house and the curtilage will likely have good information potential to the living conditions of the early settlers in the district. These sites are rarely investigated.</p> <p>The house is not readily visible from the public realm. Real estate agent photographs from c.2018 show it to be of square villa form with continuous wrap-around verandah and a Dutch Gable. In which case it is an unusual example of such a villa form in the locality and has some potential to be evaluated for scheduling. However, it has evidently been refurbished in the past. There has also been additional modern development on site. Potential heritage values cannot be fully established without a site visit and more detailed historical research.</p>	<p>While the NoR will not in itself generate physical impacts on the villa, implementation of the corridor will likely require the future removal, relocation or demolition of the structure. This can of course happen already as a permitted activity.</p> <p>The Strategic HIA notes that the amenity value of the historic building could be preserved by moving it rather than demolishing it. This is a preferable heritage mitigation process to complete demolition.</p> <p>Relocation will still result in a loss of context, which will reduce potential historic heritage values. Some contextual information might be retrieved through archaeological monitoring and recording during any future earthworks.</p> <p>Total demolition, if it is not practicable to avoid, will result in potential adverse effects on the place. Additionally, if the building predates 1900, an archaeological authority will be required.</p>	<p>The further evaluation of the site can be undertaken through the mechanism of the proposed HHMP condition (See appendix).</p> <p>Specifically this can occur with reference to HHMP Sections B)1-4.</p> <p>Depending on whether the property is assessed as having significant heritage values, the HHMP then provides for a hierarchy of options from relocation to mitigation by recording of standing structures as noted in the Appendix.</p>



NoR	Located	CHI ref	Item	Image Location reference	Identified / potential heritage values (where known)	Comment	Recommendation
				 <p>(Bottom image Real Estate.co.NZ)</p>			
S1	Within 200m buffer	16400	Historic structure – fruit packing shed 81 Foster Road		<p>An unassuming agricultural building that typifies the early 20th century expansion of fruit and orchard growing in the region.</p> <p>Physically the building does not appear to have any significant technological attributes, but it has a contextual value and historical interest as a surviving example of early 20th century agricultural structures.</p>	<p>The Strategic HIA appears to show an image of a different shed (Fig 7-17).</p> <p>The shed recorded at 81 Foster Road will not be physically affected by development.</p>	No mitigation is recommended for this site.



NoR	Located	CHI ref	Item	Image Location reference	Identified / potential heritage values (where known)	Comment	Recommendation
							
S2	Within 200m buffer	16388	Masonic lodge	 	The Masonic Lodge has not been included on the AUPOP Schedule. It is a modest building and will exhibit some social values as a former lodge. These values will not be affected by the NoR requirements.	Outside of the NoR, but very close to the boundary. Construction activities could impact on those structures, or any existing sub-surface curtilage could be clipped by NoR S2. There is potential for accidental damage for example from construction vibration.	Any risk of accidental damage through subsequent construction activities associated with the NoR can be appropriately managed through the HHMP condition (See Appendix).

NoR	Located	CHI ref	Item	Image Location reference	Identified / potential heritage values (where known)	Comment	Recommendation
S2 /S3	Within NoR footprint 7 Main Road State Highway 16 Kumeu	16385	Historic house	 	<p>CHI records as 'possible railway house'.</p> <p>However, no evidence is provided in the CHI to demonstrate that there is a historical connection with the railway.</p> <p>House appears as a Californian Style Bungalow with solid friezes to column porch detail. It does not share typical characteristics of other NZ Railway cottages noted in the region – these usually have a more Victorian Cottage form, with transitional Bungalow or English Cottage elements including exposed eaves, not apparent here.</p> <p>It appears to be a typical example of a 1920s bungalow and is not considered to be an exemplar of type. It is apparently modified.</p> <p>The building has little architectural interest as a typical example of a common building typology in the Auckland Region.</p>	<p>The building lies within the NoR footprint. While it is likely to have no more than moderate heritage interest, there is potentially an opportunity to relocate the bungalow elsewhere within the section to avoid demolition as a result of future construction.</p> <p>Alternatively, a photographic record could be made of the building prior to and during demolition, to mitigate the loss of historical context and amenity provided by the site.</p>	<p>If it is proposed to demolish the building, a record can be undertaken, the level of which can be determined through the HMMP Section (b)Vi.</p> <p>If it is proposed to retain the building, recommend relocating elsewhere within the property boundary if required to avoid damage from construction activities. Otherwise, any risk of damage can be controlled through the HHMP (See Appendix).</p>
S3	Within NoR footprint	18493	Railway carriages	 	<p>The railway carriages are no longer present on the site.</p>	<p>This site has been discussed in the Built heritage assessment for NW Strategic Package.</p>	<p>As per assessment.</p>

NoR	Located	CHI ref	Item	Image Location reference	Identified / potential heritage values (where known)	Comment	Recommendation
S3	Within NoR footprint	13234	Huapai Tavern		Refer to NW Strategic Assessment of Effects on Built Heritage.	This site has been discussed in the Built heritage assessment for NW Strategic Package.	As per assessment.
S3	Within NoR footprint	13243	Kumeu Railway Goods Shed		Refer to NW Strategic Assessment of Effects on Built Heritage.	This site has been discussed in the Built heritage assessment for NW Strategic Package.	As per assessment.

NoR	Located	CHI ref	Item	Image Location reference	Identified / potential heritage values (where known)	Comment	Recommendation
S3	Within NoR footprint	16381	Historic house 42 Boord Crescent	 	<p>This structure is a modified hipped roof villa, Italianate brackets to eaves, brick corbelled chimney indicate a likely pre1900 date of construction.</p> <p>First identified for the Rodney District Heritage Study in 1999 undertaken to identify places of heritage importance to be included on the Rodney District Plan. It was not included in legacy District Plans or subsequent AUPOP.</p> <p>In its modified form, the building is unlikely to exhibit high heritage values for physical attributes. It may have moderate context and historical values, as a surviving early villa building in the landscape.</p> <p>On this basis it is assessed as having no more than Moderate Local Value.</p>	<p>The historic house (CHI # 16381) is within the extent of S3 and will be impacted by any subsequent development.</p> <p>The house is located on an extensive section and there is an opportunity to set it back further from the required NoR alignment to avoid demolition.</p> <p>If demolition is not avoided, then this work may require an archaeological authority to be demolished, if the house is demonstrated to pre-date 1900.</p>	<p>Manage as part of HHMP for future works –</p> <p>1: Relocation</p> <p>Determine whether relocation is viable and practicable. If not then:</p> <p>2: Mitigation by record</p> <p>Record structure prior to demolition, to a level agreed with HNZ based on HNZ 2018 Investigation and recording of buildings and standing structures (and any subsequent revisions).</p>

NoR	Located	CHI ref	Item	Image Location reference	Identified / potential heritage values (where known)	Comment	Recommendation
S3	Within 200m buffer	16379	Historic house 62 Boord Crescent Kumeu 0891 Lot 1 DP 164979	 	<p>This structure is a modified hipped bay villa, of Late Victorian or Edwardian date c.1890-1914.</p> <p>First identified for the Rodney District Heritage Study in 1999 undertaken to identify places of heritage importance to be included on the Rodney District Plan. It was not included in legacy District Plans or subsequent AUPOP.</p> <p>In its modified form, the building is unlikely to exhibit high heritage values for physical attributes. It may have moderate context and historical values, as a surviving early villa building in the landscape. Contextually it is comparable to 42 Boord Crescent.</p> <p>On this basis it is assessed as having no more than Moderate Local Value.</p>	<p>The building is well clear of the designation due to setback of the driveway.</p> <p>The driveway, boundary fence and small masonry wingwalls are modern in construction. Any effects from the designation are considered to have little adverse impact other than some minor changes to setting.</p>	<p>The Urban Landscape Design Management Plan requires any landscaping that may be impacted by the construction to be re-instated. The house is unaffected.</p>

NoR	Located	CHI ref	Item	Image Location reference	Identified / potential heritage values (where known)	Comment	Recommendation
S3	Within 200m buffer	16380	Historic house 186 Boord Crescent	 	<p>This property contains a heavily modified and extended bay villa of probable Edwardian date c.1900-1914.</p> <p>First identified for the Rodney District Heritage Study in 1999 undertaken to identify places of heritage importance to be included on the Rodney District Plan. It was not included in legacy District Plans or subsequent AUPOP.</p> <p>In its modified form, the building is unlikely to exhibit high heritage values for physical attributes. It may have little context and historical values, as a surviving but heavily modified villa building in the landscape.</p> <p>On this basis it is assessed as having no more than Little Local Value.</p>	<p>The building is not located within the designation and future changes to its setting enabled by the NoR would not result in adverse effect, due to the low level of historical interest.</p>	<p>No mitigation is recommended for this site.</p>



NW HIF – Trig Road (South)



Figure 9 Trig Road (South) Overview of NoR Corridor

Table 5 Trig Road (South)– Further Information on selected pre-1940 built heritage sites within the proposed designation footprint and 200m buffer.

NoR	Located	CHI ref	Item	Image Location /reference	Identified / potential heritage values (where known)	Comment	Recommendation
Trig Road	Within NoR footprint	3705 (note: now removed from CHI)	House; "Quail Hollow" 38 Trig Road	 <p>Aerial view Auckland Council GIS viewer. No clearly visible from road.</p>	<p>Historic Structure</p> <p>38 Trig Rd square fronted villa-cottage.</p> <p>Located to the southeast of 40 Trig Road.</p> <p>Building is present in 1940 aerials.</p> <p>(See Figure 10)</p>	Site is located south of NoR extent and is not physically affected.	No mitigation is recommended for this site.
Trig Road	Within 200m buffer	3699	Historic house 80 Hobsonville Road		<p>From 2016 Clough /MMA report –</p> <p>Historic building-dwelling. 80 Hobsonville Rd, Lincoln Car Centre, 2 storey English style cottage, low eaves gable at front, brick chimney, timber weatherboard with single pane casement windows, fanlight windows on ground floor, set in huge grounds. Has had later extensions on left of chimney.</p>	Site is located south of NoR extent and is not physically affected.	No mitigation is recommended for this site.

NoR	Located	CHI ref	Item	Image Location /reference	Identified / potential heritage values (where known)	Comment	Recommendation
							
Trig Road	Within 200m buffer	3328 (note: appears to have been removed from CHI)	Historic house	Possibly refers to 40 Trig Road – See Figure 10	Building at 40 Trig Road is present in 1940 aerials. (See Figure 3)	Site is located south of NoR extent and is not physically affected.	No mitigation is recommended for this site.
Trig Road	Within 200m Buffer	No entry 40 Trig Road	Historic houses		Historic buildings – probable square-fronted villa and Californian Bungalow immediately adjacent to the northeast. Obscured from Street view – visible on 1940 Aerial (See figure 3 below).	Site is located south of NoR extent and is not physically affected.	No mitigation is recommended for this site.

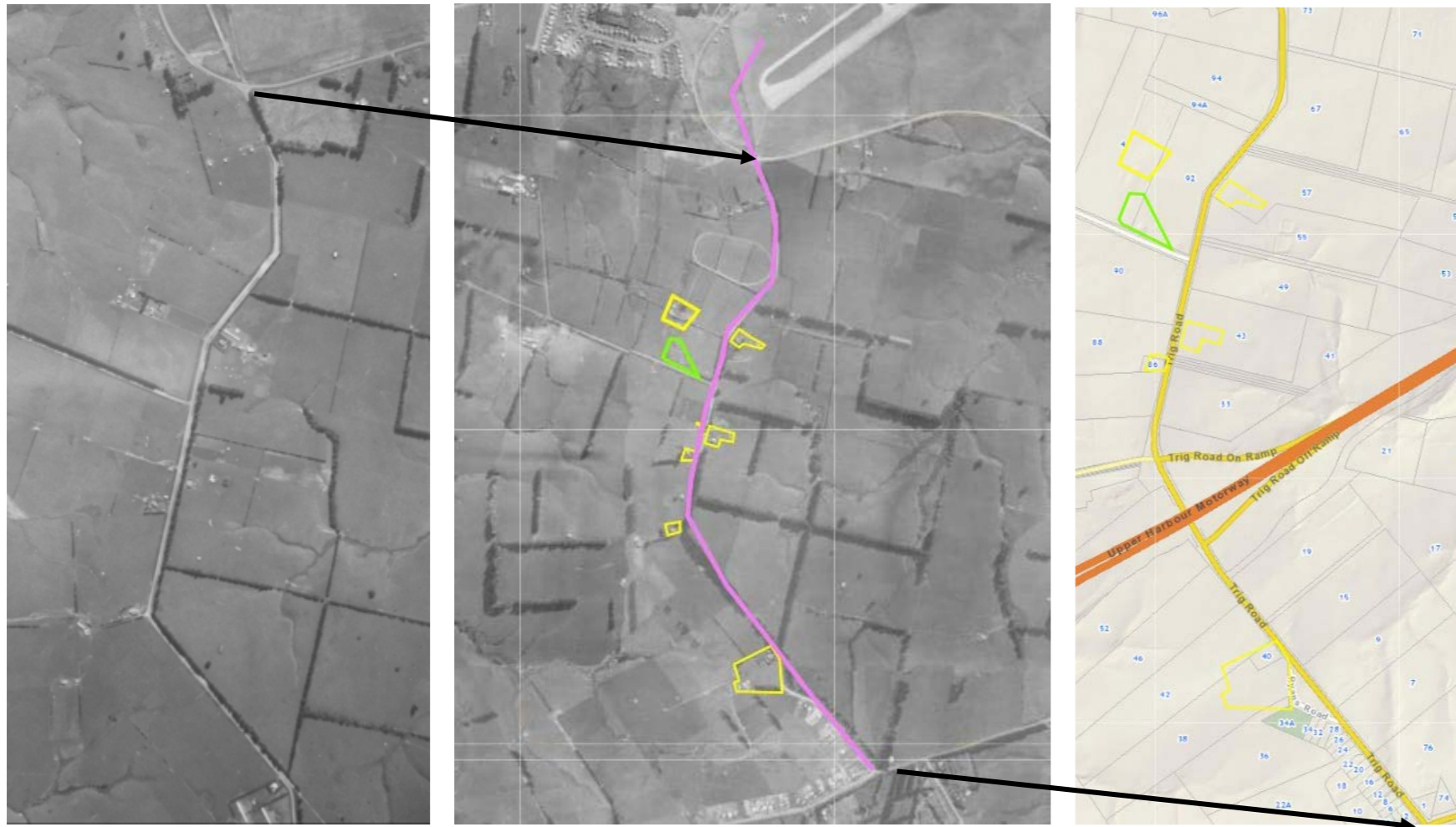


Figure 10. Left – 1940 Aerial showing Trig Road (NoR W1). Middle - 1959 Aerial showing Trig Road North with identified pre-1940 house sites (yellow boundaries) within a 200m buffer of Designation NW1. The WWII Scheduled Gun Emplacement (Green boundary). Right Trig Road Alignment with four remaining site locations (in yellow) of potential pre-1940 construction date (Auckland Council Geomaps)

NW HIF – Redhill Arterial Transport Network

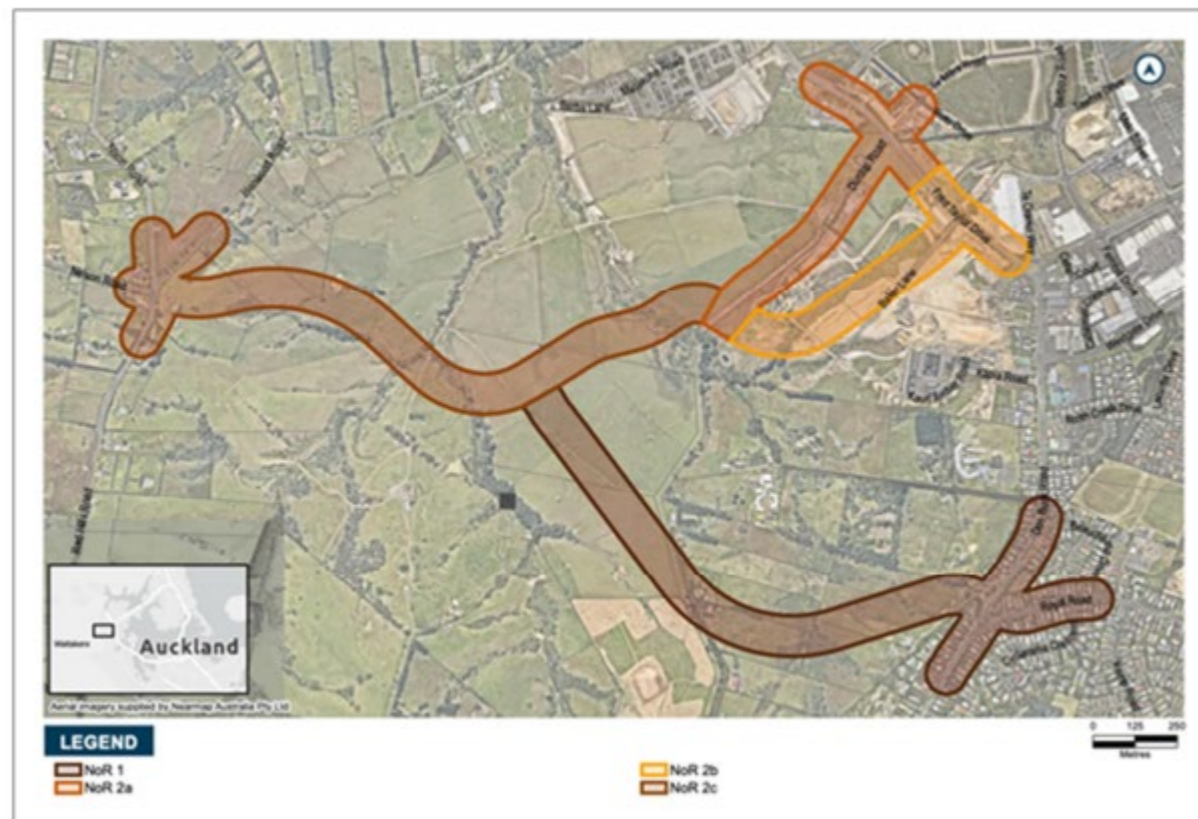



Figure 11 Redhills HIF Overview of NoR corridors

Notice	Project	Description
NoR1	Redhills North-South Arterial Corridor	New urban arterial transport corridor and upgrade of Don Buck and Royal Road intersection.
NoR2a	Redhills East-West Arterial Corridor – Dunlop Road	New urban arterial transport corridor that intersects with Fred Taylor Drive and connects to the remaining East-West corridor (NoR2c) at the intersection with the Redhills North-South arterial corridor.
NoR2b	Redhills East-West Arterial Corridor – Baker Lane	New urban arterial transport corridor that intersects with Fred Taylor Drive and connects to the intersection of the remaining East-West connection and Dunlop Road (NoR2a).
NoR2c	Redhills East-West Arterial Corridor – Nixon Road connection	New urban arterial transport corridor that intersects with the Redhills East West Arterial Corridor – Dunlop Road. This includes the upgrade of the existing Red Hills Road/Nelson Road/Nixon Road intersection, and the existing Nixon Road/Henwood Road intersection

Figure 12 Redhills HIF Overview of NoRs

Table 6 Redhills – Further Information on selected pre-1940 built heritage sites within the proposed designation footprint and 200m buffer.

NoR	Located	CHI ref	Item	Image location / reference	Identified / potential heritage values (where known)	Comment	Recommendation
2b	Within 200m buffer	18372 60 Baker Lane Don Buck road State Highway 16 SH 16 Ngongetepara Stream	Wooden holding dam/sluice		<p>Date of structure undetermined.</p> <p>CHI describes as follows:</p> <p>Located at 60 Baker Lane, near the corner of Don Buck Road and SH 16. The sites is a Senegal tea site which is inspected occasionally by Greg Hoskins (Biosecurity Officer, ARC) so that he can treat any seedling plants which germinate. This is a wooden structure which appears to look like some sort of water holding device (sluice?) Also present are what look to be wooden pilings. There are also reportedly other structures on the property. Greg noticed the structure in January 2001 when he started treating the pest plant and thought it looked like an old canoe buried in the stream bed. He returned to the site at the beginning of April and took the photos attached (18372_1 to 4). Graeme Murdoch noted the presence of the wandering jew plant in the photos indicates a settlement site. Grid reference estimated from aerials, property boundaries and course of stream.</p>	Will not be physically impacted by the designation.	No mitigation is recommended for this site.

2 APPENDIX 1: MODEL AND RECOMMENDED CONDITIONS

Huapei Tavern and Kumeu Goods Shed relocation/adaptation.

For Huapai Tavern (AUP:OP Schedule 14.1 #00482) and Kumeū Railway Goods Shed (AUP:OP Schedule 14.1 #00483) measures and methods shall be identified to:

- A. appropriately avoid, remedy or mitigate adverse construction effects;
- B. from the re-location of the buildings;
- C. appropriately re-locate the buildings within the footprint of designation in a manner that respects the heritage value of the buildings;
- D. identify non-original additions to the Huapai Tavern which may be removed without compromising the heritage values of the building; and
- E. identify long term protection management of heritage elements of the buildings.

Historic Heritage Management Plan (HHAMP)

- (a) A HHMP shall be prepared in consultation with Council, HNZPT and Mana Whenua prior to the Start of Construction for a Stage of Work.
- (b) The objective of the HHMP is to protect historic heritage and to remedy and mitigate any residual effects as far as practicable. To achieve the objective, the HHMP shall identify:
 - (i) Any adverse direct and indirect effects on historic heritage sites and measures to appropriately avoid, remedy or mitigate any such effects, including a tabulated summary of these effects and measures;
 - (ii) Methods for the identification and assessment of potential historic heritage places within the Designation to inform detailed design;
 - (iii) Known historic heritage places and potential archaeological sites within the Designation, including identifying any archaeological sites for which an Archaeological Authority under the HNZPTA will be sought or has been granted;
 - (iv) Any unrecorded archaeological sites or post-1900 heritage sites within the Designation, which shall also be documented and recorded;
 - (v) Roles, responsibilities and contact details of Project personnel, Council and HNZPT representatives, Mana Whenua representatives, and relevant agencies involved with heritage and archaeological matters including surveys, monitoring of Construction Works, compliance with AUP accidental discovery rule, and monitoring of conditions;
 - (vi) Specific areas to be investigated, monitored and recorded to the extent these are directly affected by the Project;
 - (vii) The proposed methodology for investigating and recording post-1900 historic heritage sites (including buildings) that need to be destroyed, demolished or relocated, including details of their condition, measures to mitigate any adverse effects and timeframe for implementing the proposed methodology, in accordance with the HNZPT Archaeological Guidelines Series No.1: Investigation and Recording of Buildings and Standing Structures (November 2018), or any subsequent version;
 - (viii) Methods to acknowledge cultural values identified through Condition 8 where archaeological sites also involve ngā taonga tuku iho (treasures handed down by our ancestors) and where feasible and practicable to do so;
 - (ix) Methods for avoiding, remedying or mitigation adverse effects on historic heritage places and sites within the Designation during Construction Works as far as practicable. These methods shall include, but are not limited to:
 - A. security fencing or hoardings around historic heritage places to protect them from damage during construction or unauthorised access
 - B. measures to mitigate adverse effects on historic heritage sites that achieve positive historic heritage outcomes such as increased public awareness and interpretation signage;
 - C. Training requirements and inductions for contractors and subcontractors on historic heritage places within the Designation, legal obligations relating to accidental discoveries, the AUP Accidental Discovery Rule (E11.6.1). The training shall be undertaken prior to the Start of Construction, under the guidance of a Suitably Qualified Person and Mana Whenua representatives (to the extent the training relates to cultural values identified under Condition 14;
- (c) All historic heritage reports relating to historic heritage investigations (evaluation, excavation and monitoring), shall be submitted to the Manager within 12 months of completion.

ATTACHMENT 09

**SUPPORTING GROWTH ALLIANCE
NORTH-WEST SECTION 92
TRANSPORT RESPONSE**

Memorandum

To:	Auckland Council
From:	Supporting Growth
Date:	3 March 2023
CC:	
Subject:	Section 92: Request for further information (Transport Matters)
File/Ref No:	

The following transport planning information has been provided in response to requests for further information from Auckland Council's transport specialists. In particular more information has been requested in regard to following matters.

Strategic Package 078021

- Further information in relation to the network performance under a do minimum/do nothing scenario, i.e. the growth occurs without the proposed Notices of Requirement (NORs)/Projects in place
- Further information on the assessment against Auckland Unitary Plan (AUP) Policies – E27.2(3)(4)(5)(6)
- Further information in relation to the inter-dependencies of the NORs
- Further information in relation to staging and timing of construction.

Local Package

- Further information in relation to the network performance under a do minimum/do nothing scenario, i.e. the growth occurs without the proposed NORs/Projects in place
- Further information in relation to the inter-dependencies of the NORs.

HIF Package

- Further information in relation to the inter-dependencies of the NORs
- Further information on the interdependence between the four separate Redhills NORs
- Further information to understand the corridors in isolation.

This memorandum

covers these matters for the Assessments of Transport Effects for the NOR packages for North West Whenuapai Arterials, North West Redhills Riverhead Arterials, HIF Trig Road and HIF Redhills Arterials, and North West Strategic.

The matter of reasonable necessity was raised as part of the request for further information. Whether the designation is reasonably necessary for achieving the objectives of the requiring authority for which the designation is sought has been addressed in the Assessment of Environmental Effects (AEE), accompanying each of the NOR packages, as required under Section 171(1)(c) of the Resource Management Act (RMA).

1 Overview

The approach to the North West NOR packages is founded on the development of an integrated network outcome that supports the full implementation of planned growth, as identified in the Auckland Unitary Plan and Future Urban Land Supply Strategy (FULSS). The subsequent transport infrastructure required to support this growth in a manner consistent with current policy direction has been identified and does this by nature of considering an integrated network, result in various inter-relationships and inter-dependencies.

The assessment of transport effects has been undertaken on a whole of network approach, and where available and appropriate, a quantified assessment of effects and interdependencies by corridor has been provided. This network approach has been undertaken within the context that the implementation of each project within the NoRs will be subject to future implementation analysis and decisions, including design and consenting. It is not considered practical, nor necessary to consider every possible combination of land use and project sequencing for this AEE, given the proposed use of future management plans, as discussed below.

There are both inter-dependencies and uncertainty in terms of delivery and staging of both the land use release and associated infrastructure, over the proposed lapse dates for the NOR packages. Therefore, by necessity there is a reliance on management plans to enable Projects to be provided in a manner that will be integrated with the surrounding transport network and land use present at the time of implementation. The key management plan proposed to support this is the Urban Design and Landscape Management Plan (Condition 10). The condition related to this plan is provided at the end of this memo.

This is supported by a statutory requirement both Auckland Transport and Waka Kotahi NZ Transport Agency (Waka Kotahi) have to contribute to *an effective, efficient, and safe (Auckland) land transport system in the public interest*.¹ This requirement will extend to the integration of the identified NORs/Projects with the surrounding transport network in the future environment context.

As such, whilst recognising there is uncertainty / risk with the long-term timeframe for some of the NORs / Projects, it is considered that the proposed conditions, statutory requirements and other internal processes (such as a future Implementation Business Case) that apply to Auckland Transport and Waka Kotahi will support the integration with the wider network and will manage the potential range of effects that have been identified in the assessments.

In addition to this, it is also noted that the designs currently used to inform the designation footprints are an indicative design, that can be further developed (within the context of the NoR Purpose and Conditions) in the future prior to implementation to enable the Projects to be integrated with the surrounding road network. This approach is also managed by the proposed Urban Design and Landscape Management Plan (Condition 10).

The use of this condition enables Auckland Transport and Waka Kotahi to respond to the land use and transport environment at the time of implementation and alter the design accordingly. This may also include changes that result from further work prior to implementation such as detailed design,

¹ <https://www.legislation.govt.nz/act/public/2003/0118/latest/DLM226236.html> and <https://www.legislation.govt.nz/act/public/2009/0032/latest/DLM2322355.html>

resource consent assessments, safety audits, and the exact operating strategy for the corridor (i.e. the need to provide prioritisation for certain modes, such as bus services).

Notwithstanding the above, further consideration has been provided on the inter-relationships between Projects in this memo, as requested. This primarily reiterates and supplements information already provided within the Assessments of Transport Effects for each of the NOR packages.

2 Existing Crash Records

Further information was requested on the existing crash environment within the North West growth area. This has been provided on a per corridor basis below. It is critical to note that while this information has been provided, it is considered that it provides little value within a future urban context due to:

- An objective of each of the NoRs is to support a safe transport network for all users. This is reflected in the interim design with proposed designation footprint sufficient to deliver this.
- The context of the surrounding land use in these areas. In particular the North West growth area for the five years assessed has been a mix of rural, transitioning rural to urban and urban. Accordingly, the roading network reflects these changes, with some roads changing from urban to rural within the time period, and others predicted to change in the future
- Speed limit bylaw changes. Several key corridors have been subject to speed reductions as part of rolling safety initiatives implemented by Auckland Transport and Waka Kotahi
- The time period that has been reviewed is 2015 to 2019. While not the most current data, this is considered an appropriate time period, as this does not include the series of rolling lockdowns due to COVID-19 in 2020 and 2021, and the associated disruption to travel patterns at that time and in the period that followed
- The crash records are reflective of the current transport demand on these corridors. In general, current active mode (walking and cycling) use of these corridors is very low (due to the lack of safe and attractive facilities).

Table 2-1: Total Crashes per Year by Corridor (all crash severity)

Road Corridor	Total Crashes per Year				
Redhills	2015	2016	2017	2018	2019
Fred Taylor Drive	11	18	7	6	8
Don Buck Road	5	11	9	11	9
Whenuapai					
Trig Road	2	1	2	0	4
Brigham Creek Road	16	17	21	11	15
Hobsonville Road	9	15	21	16	24
Kumeū /Riverhead					
Coatesville - Riverhead Highway	8	12	6	5	9
Access Road	2	3	2	1	2
Brigham Creek Interchange	10	10	7	7	7
SH16 - Old Railway Road to Foster Road	15	29	32	22	18

Table 2-2: Vulnerable Road User Crashes per Year and by Corridor

Road Corridor	Vulnerable Road User Crashes per year					
	2015	2016	2017	2018	2019	Total DSIs ²
Redhills						
Fred Taylor Drive	0	2	0	1	0	0
Don Buck Road	0	3	2	1	1	2
Whenuapai						
Trig Road	0	0	0	0	0	0
Brigham Creek Road	2	2	1	4	2	1
Hobsonville Road	3	2	2	3	4	2
Kumeū /Riverhead						
Coatesville - Riverhead Highway	0	3	1	0	1	1
Access Road	0	0	0	0	0	0
Brigham Creek Interchange	0	1	0	3	1	0
SH16 - Old Railway Road to Foster Road	1	2	4	4	1	4

As can be seen, vulnerable road user crashes are variable across the existing network. There are relatively high levels of Death and Serious Injury (DSI) crashes on SH16, reinforcing the current conflicts that are present within this corridor as a result of competing demands for through movements and town centre functionality.³ Hobsonville Road and Don Buck Road records also indicate higher levels of vulnerable road user crashes. Both of these corridors have increasing levels of urbanisation, and intermittent facilities for pedestrians and cyclists resulting in higher conflict levels and a higher risk of serious injuries occurring.

Table 2-3: Summary of Most Common Crash Types by Corridor (from total crashes)

Road Corridor	1	2	3
Redhills			
Fred Taylor Drive	Rear end/obstruction	Crossing/turning	Overtaking crashes
Don Buck Road	Rear end/obstruction	Crossing/turning	Straight road lost control/Head on
Whenuapai			
Trig Road	Bend - Lost control/Head on	Crossing/turning	Rear end/obstruction
Brigham Creek Road	Rear end/obstruction	Bend – Lost control/Head on	Crossing/turning
Hobsonville Road	Crossing/turning	Rear end/obstruction	Bend – Lost control/Head on
Kumeū /Riverhead			

² Total Deaths and Serious Injuries (DSIs) across the five-year period (2015 to 2019)

³ Noting the reported section of SH16 is largely within the existing urban area, which is not part of the separate SH16 Improvements Project

Road Corridor	1	2	3
Coatesville-Riverhead Highway	Rear end/obstruction	Crossing/turning	Bend – Lost control/Head on
Access Road	Bend – Lost control/Head on	Straight road lost control/Head on	Overtaking crashes
SH16 Kumeū -Huapai	Rear end/obstruction	Crossing/turning	Overtaking crashes

The crash records over the five years reported indicate the most common crash types on the existing road corridors are rear/end obstruction, crossing/turning crashes and loss of control. Within the context of the network, specifically rural roads experiencing increasing levels of congestion, and transitioning rural to urban corridors, these crash types are not unexpected. Without the provision of new and upgraded transport corridors, including safe and attractive facilities for active mode and micro-mobility users, these crash types are expected to be exacerbated with increasing pressure on the network. The design of the proposed designation identified for the NORs is consistent with design standards provided by the Auckland Transport Design Manual.

In addition, the designations for the NORs have considered the need to provide appropriate lane widths and, where necessary, medians to enable people to safely manoeuvre to and from the corridor. For example, within the urban sections of SH16 Main Road, where existing property access needs to be maintained, including for heavy vehicles.

3 Likely Future Transport Environment (without the Project)

Further information has been requested on the likely future transport network with and without the proposed Projects. The below tables provide additional information on a scenario where the projected growth in the North West was to occur, and the specific NoR project is not in place.

3.1 Road Safety

The following table provides an assessment of the road safety implications for each corridor should the NOR / Project not proceed.

The NORs for the Rapid Transit Corridor (RTC), and the associated Kumeū and Huapai RTC Stations, are not addressed in the table below. With regard to these NORs, as discussed in the Assessment of Transport Effects, the provision of rapid transit will shift trips from vehicles to public transport, reducing the potential for crashes associated with medium- to longer-distance trips for the Kumeū / Huapai growth area. Moreover, as discussed below, the provision of the RTC and associated stations will increase pedestrian, cycle and other micro-mobility demand to and along the SH16 Main Road corridor, necessitating provision of safe and attractive facilities.

Table 3-1: Road Safety Effects without NOR by Corridor

NOR Corridor	Road Safety Effects without NOR Project
NoRS1: Alternative State Highway	<p>As a new corridor, the road safety implications without the Project are largely on the surrounding road network.</p> <p>The Project will provide a new route that removes strategic trips from other unsuitable parallel rural roads. Without the Project, increasing congestion along the existing state highway corridor (SH16 Main Road) is anticipated to result in increasing use of parallel rural routes by vehicles, including heavy vehicles.</p> <p>The business cases for the Project predicted a significant reduction of 30% (from around 4,750 to 3,350) in the number of daily vehicles (per kilometre) on rural roads within the North West area. This not only enables an increase in people in the North West using more suitable strategic routes or urban connections to undertake their travel, but will provide benefits to recreational users of these rural roads. This includes people who will use these roads for recreational cycling, horse riding or walking their dog.</p> <p>Without the provision of the Alternative State Highway, traffic volumes on the existing SH16 Main Road are expected to reach up to 40,100 vehicles per day to the west of Coatesville-Riverhead Highway and around 23,000 vehicles per day west of Old North Road. Noting that the current constraints on the corridor limit its ability to accommodate further traffic growth, with traffic spreading to parallel rural routes, as discussed above.</p> <p>The traffic demands on SH16 Main Road without the ASH will continue to place greater pressure on the corridor. There will be an increasing importance on the provision of safe, separated walking and cycling facilities on SH16 Main Road, as the surrounding area continues to urbanise and access is required to the town / local centres and proposed Rapid Transit Corridor (RTC) stations.</p>
NoRS2: SH16 Main Road	<p>Without this NoR, the nature of the crash record for vulnerable road users, as shown previously, is unlikely to change. With increasing demand for access, where vulnerable road users continue to use the limited provision of facilities, there is anticipated to be increasing numbers of DSIs.</p> <p>In addition to the ASH, the RTC enables buses to be provided on a separated facility that will support safe crossing facilities to and from the growth areas in Kumeū-Huapai. The NOR for the SH16 Main Road upgrade therefore enables the integration of walking and cycling and the future public transport provision. The SH16 Main Road upgrade includes new crossing facilities at Riverhead Road, Weza Lane, Matua Road, Station Road, Trigg Road, and Matua Road West. Without these crossing facilities, there is a significant safety risk for vulnerable road users crossing SH16 Main Road – even with the ASH and the RTC in place.</p>
NoRS4: Access Road	<p>The existing Access Road is not fit for purpose to support the planned future urban growth, due to the high-speed environment, narrow carriageway and significant increase in conflicts between through traffic, accessing/turning movements and vulnerable road users. These increases in conflicts will lead to increases in DSIs.</p> <p>The expected increase in safety issues is also likely to constrain the attractiveness of walking and cycling, further reinforcing use of vehicles with the resulting high-speed conflicts. Although the speed limit could be reduced, as a safety improvement measure, the existing Access Road will remain unsafe and be unable to safely accommodate future growth due to the type and number of conflicts expected.</p>
NoRW1: Trig Road North and NoR: HIF Trig Road	<p>The existing Trig Road is not fit for purpose to support the planned future urban growth, due to the high-speed environment, narrow carriageway and significant increase in conflicts between through traffic, accessing/turning movements and vulnerable road users. These increases in conflicts will lead to increases in DSI's.</p> <p>The expected increase in safety issues is also likely to constrain the attractiveness of walking and cycling, further reinforcing the use of vehicles with the resulting high-speed conflicts. Although the speed limits have recently been reduced as a safety improvement measure, the existing Trig Road will remain unsafe and be unable to safely accommodate future growth due to the type and number of conflicts expected.</p>

NOR Corridor	Road Safety Effects without NOR Project
	It is also noted that a local primary school has recently been designated by the Ministry of Education further reinforcing the high-risk environment for vulnerable road users without appropriate facilities.
NoRW2: Māmari Road	Māmari Road is an extension to a small cul de sac creating a new corridor. From a road safety perspective, without the Project additional pressure will be placed on the existing network, in particular on Trig Road. As discussed above, Trig Road is not currently fit for purpose to accommodate future urban growth, and without Māmari Road this will place further pressure on Trig Road.
NoRW3: Brigham Creek Road	<p>The existing Brigham Creek Road is not fit for purpose to support the planned future urban growth, due to the high-speed environment, narrow carriageway and significant increase in conflicts between through traffic, accessing/turning movements and vulnerable road users. These increases in conflicts will lead to increases in DSI's.</p> <p>The expected increase in safety issues is also likely to constrain the attractiveness of walking and cycling, further reinforcing use of vehicles with the resulting high-speed conflicts. Although the speed limits have recently been reduced in the town centre as a safety improvement measure, the existing Brigham Creek Road will remain unsafe and be unable to safely accommodate future growth due to the type and number of conflicts expected.</p> <p>It is also noted that the central town centre in Whenuapai will be a significant attractor and safe movement along the corridor by all modes will be increasingly important. Without the Project these movements will be limited, and in particular the safe movement of walking and cycling will be limited. These trips will then be likely undertaken via private vehicle – further reinforcing the conflict between vehicles and vulnerable road users.</p>
NoRW4: Spedding Road	Spedding Road is an extension to a short extent of rural road creating a new corridor. From a road safety perspective, without the Project additional pressure will be placed on the existing network, in particular on Brigham Creek Road. As discussed above Brigham Creek is not currently fit for purpose to accommodate future urban growth, and without Spedding Road this will place further pressure on Brigham Creek Road.
NoRW5 Hobsonville Road NoR: HIF Trig Road	<p>The existing Hobsonville Drive is not fit for purpose to support the planned future urban growth. There are expected to be increasing demands for walking and cycling and vehicle numbers along the corridor which will result in a significant increase in conflicts between through traffic, accessing/turning movements, and vulnerable road users. These increases in conflicts will lead to increases in DSI's.</p> <p>With the proximity of this corridor to Westgate Centre, Hobsonville Centre and West Harbour high crossing demands and demands to travel along the corridor are expected for pedestrians and cyclists. If appropriate facilities to enable crossing and travelling along the corridor are not provided, pedestrians and cyclists will either make high risk decisions or choose to travel by car. Hobsonville Road also has several legacy intersections, including Trig Road and Luckens Drive which are not considered safe for pedestrians to navigate. They also encourage higher speed turning movements which are not appropriate within an urban context.</p>
NoR RE1: Don Buck Road FTN Upgrade	The existing Don Buck Road is not fit for purpose to support the planned future urban growth. There are expected to be increasing demands for walking and cycling and vehicle numbers along the corridor which will result in a significant increase in conflicts between through traffic, accessing/turning movements, and vulnerable road users. These increases in conflicts will lead to increases in DSI's.
NoR RE2: Fred Taylor Drive	The existing Fred Taylor Drive is not fit for purpose to support the planned future urban growth, due to the high-speed environment and significant increase in conflicts between through traffic, accessing/turning movements and vulnerable road users. These increases in conflicts will lead to increases in DSI's. With the proximity of this corridor to Westgate Centre and the Redhills intensive residential developments high crossing demands are expected for pedestrians and cyclists. If appropriate facilities to enable crossing and travelling along the corridor are not provided, pedestrians and cyclists will either make high risk decisions or choose to travel by car.

NOR Corridor	Road Safety Effects without NOR Project
	<p>The expected increase in safety issues is also likely to constrain the attractiveness of walking and cycling, further reinforcing use of vehicles with the resulting high-speed conflicts. Although the speed limit could be reduced as a safety improvement measure, the existing Fred Taylor Drive will remain unsafe and will be unable to safely accommodate future growth due to the type and number of conflicts expected.</p>
<p>NoR R1 Coatesville Riverhead Highway</p>	<p>The existing Coatesville Riverhead Highway is not fit for purpose to support the planned future urban growth, due to the high-speed environment and significant increase in conflicts between through traffic, accessing/turning movements, and vulnerable road users. These increases in conflicts will lead to increases in DSI's.</p> <p>The Coatesville Riverhead corridor has several uncontrolled intersections, including Moontide Road and Old Railway Road, where intersection improvements are enabled through the NOR to poor visibility and narrow carriage way space for waiting vehicles. The five serious crashes on Coatesville Riverhead Highway were all in relation to turning movements at these intersections, including rear end collisions and poor turning decisions.</p> <p>With the Project not in place, crash records are expected to worsen on this corridor as a result of high through volumes making turning movements increasingly hazardous. This also includes waiting at a centre line to turn in a constrained carriageway. It is also noted that the vertical crest at Moontide Road presents a significant safety risk due to poor visibility.</p>
<p>NoR1: Redhills North-South Arterial Corridor</p>	<p>Redhills North South Arterial is a new corridor. From a road safety perspective, without the Project additional pressure will be placed on the existing network, in particular on Don Buck Road and Fred Taylor Drive. These corridors as identified above are already under increasing pressure to facilitate safe movements for all modes. Without this Project, the internal collector network will create a fragmented network that will encourage vehicle use, further increasing pressure on Don Buck Road and Fred Taylor Road in terms of access/turning movements, through movements and walking and cycling access.</p>
<p>NoR2a: Redhills East- West Arterial Corridor – Dunlop Road</p>	<p>Redhills East West Arterial Dunlop Road is a new corridor. From a road safety perspective, without the Project additional pressure will be placed on the existing network, in particular on Don Buck Road and Fred Taylor Drive. These corridors as identified above are already under increasing pressure to facilitate safe movements for all modes. Without this Project, the internal collector network will create a fragmented network that will encourage vehicle use, further increasing pressure on Don Buck Road and Fred Taylor Road in terms of access/turning movements, through movements and walking and cycling access.</p>
<p>NoR2b Redhills East – West Arterial Corridor -Baker Lane</p>	<p>Redhills East West Baker Lane Arterial is a new corridor. From a road safety perspective, without the Project additional pressure will be placed on the existing network, in particular on Don Buck Road and Fred Taylor Drive. These corridors as identified above are already under increasing pressure to facilitate safe movements for all modes. Without this Project, the internal collector network will create a fragmented network that will encourage vehicle use, further increasing pressure on Don Buck Road and Fred Taylor Road in terms of access/turning movements, through movements and walking and cycling access.</p>
<p>NoR2c Redhill East-West Arterial Corridor Nixon Road connection</p>	<p>Redhills East West Arterial Nixon Road is a new corridor. From a road safety perspective, without the Project additional pressure will be placed on the existing network, in particular on Don Buck Road and Fred Taylor Drive. These corridors as identified above are already under increasing pressure to facilitate safe movements for all modes. Without this Project, the internal collector network will create a fragmented network that will encourage vehicle use, further increasing pressure on Don Buck Road and Fred Taylor Road in terms of access/turning movements, through movements and walking and cycling access.</p>

3.2 General Traffic

The following table provides a summary of the expected traffic volumes on the transport network in 2048+ both without and with the Projects in place, together with an assessment of the outcomes expected to arise in the case that the NORs do not proceed. Particular commentary is provided where key interrelationships between projects exists.

In the case of new corridors, the traffic effects of a new corridor not being implemented is largely on the existing road network.

At an area-level, each growth areas has been assessed to consider vehicle to capacity ratios. At a network-level, it can be seen that the overall transport effects for traffic are acceptable, with 5% or less of vehicle kilometres travelled being in peak congestion. These results are summarised in Table 3-23.2 below.

Table 3-2: Vehicle Capacity Ratios – Without NORs compared to With NORS / Projects in place

Growth Area	Without NORs – AM Peak Percentage of vehicles kilometre travelled in peak congestion (>90%)	With NORs in Place – AM Peak Percentage of vehicles kilometre travelled in peak congestion (>90%)
Whenuapai Package	5% in Do-min scenario	3% in Recommended Option
Redhills-Riverhead Package	13% in Do-min scenario	5% in Recommended Option
Kumeū -Huapai, Strategic Package	17% in Do-min scenario	0% in Recommended Option

For all intersections, including interchanges to the state highway network, Auckland Transport and Waka Kotahi will manage the network to achieve and balance a range of outcomes, including traffic efficiency, user safety (for all modes), and prioritising movement by more sustainable modes, such as public transport and active modes. This shift from a singular focus on traffic delay to broader outcomes and prioritisation of more sustainable movements is ongoing and driven by regional and national policy directives. This includes recent policy direction around reallocating road space to favour these broader outcomes, where practicable. Collectively, this requires a broader assessment of needs and priorities of the transport system than just localised vehicle delays at selected intersections.

Mode shift towards public transport is a key outcome of the overall North West network packages, and modal priorities are expected to change with less priority given to general traffic flow. In this regard, the future operating environment is anticipated to tolerate increased delay and queuing for general traffic, at certain intersections, at certain times.

The Transport Design Manual⁴ also reinforces that designing streets for two 30-minute peaks of each weekday leads to very wide streets with excess capacity for the rest of the day. The Manual states that:

“This has a very high spatial footprint and reduces the amenity of the street. This encourages high vehicle speeds during the remaining 23 hours of the day and makes pedestrian crossings difficult and/or dangerous. It may fail to provide a safe and attractive environment during the rest of the day. Vehicle capacity metrics should be established that seek to provide comfortable capacity during the typical hours of the day. Designing for peak hour vehicle capacity requires the construction and maintenance of costly infrastructure. By proactively setting vehicle capacity targets, traffic growth can be contained, while shifting to highly space-efficient modes. This enables a greater portion of space to be given to land use activity”.

The theoretical capacity of a single lane with uninterrupted flow conditions is generally within the range of 1,500 to 2,400 vehicles per hour⁵, noting these can be lower when considered at a corridor level due to various control features in the corridor (such as intersections, crossings etc). The peak period is generally accepted as 10% of the daily flow (vehicles per day (vpd)) of a corridor. The Transport Design Manual also provides indicative lane capacity for vehicles at 1,800 vehicles per hour. These considerations have been taken into account in the assessment provided below.

⁴ Auckland Transport: Transport Design Manual, <https://at.govt.nz/media/1989354/urban-street-and-road-design-guide-1-1-2022.pdf>

⁵ Austroads Guide to Traffic Management Part 3 Traffic Studies and Analysis

Table 3-3: Traffic Effects without NOR by Corridor

NOR Corridor	Without NORs (2048+)	With NORs (2048+)	Assessment of Outcomes without the NoR
NoRS1: Alternative State Highway	N/A	27,700vpd (east of Access Road) 13,900vpd (west of Access Road)	<p>Without NOR S1 in place, the reliance on the existing form of SH16 Main Road (the only east-west strategic traffic route through Kumeū to Helensville) will create increased congestion, stop-start conditions, and unpredictable and unreliable travel times on the SH16 Main Road route, as well as increased conflicting movements. This will compromise reliability, resilience, and safety for all road users.</p> <p>Based on the predicted daily traffic volumes, the existing SH16 Main Road corridor will not have enough capacity to cater for future growth, which will lead to strategic traffic re-routing to existing sub-standard rural roads (such as Old North Road, Old Railway Road). For example, the assessments have identified that the provision of the ASH would reduce 2048+ daily traffic demands from around 15,000 to 10,000vpd along Old North Road.</p> <p>As shown below, volumes of around 23,300vpd west of Old North Road well exceed the generally accepted capacity of a two lane urban road – also noting that the current corridor also serves as a town centre, with high levels of access and turning movements currently provided. With the ASH NOR in place, this daily traffic demand reduces substantially to around 8,000vpd. This includes a 71% reduction in freight traffic on SH16 Main Road.</p> <p>Moreover, the transport modelling for the NORs has predicted that the average travel time for vehicles travelling between Brigham Creek and Waimauku improves in each of the weekday peak periods. Without the NORs, the 2048+ travel times are predicted to be around 55 minutes, 20 and 30 minutes respectively in the weekday AM peak, inter peak, and PM peak. With the NOR, the travel time is predicted to reduce by around 46 minutes, 12 minutes and 22 minutes respectively, also becoming more reliable across the day.</p>
NoRS2: SH16 Main Road	10,800vpd west of Matua Road 23,300vpd west of Old North Road	8,400vpd west of Matua Road 8,000vpd west of Old North Road	<p>Without the NORs in place, the existing capacity along SH16 Main Road will exceed the volumes that could be accommodated by a two-lane urban road, particularly at the eastern end around Access Road, as is currently the case. These demands will be relieved by the implementation of the ASH NOR, the inter-dependencies of which have been discussed in the Assessment of Transport Effects, as well as below.</p>

NOR Corridor	Without NORs (2048+)	With NORs (2048+)	Assessment of Outcomes without the NoR
			<p>With the NORs in place, the proposed two lane arrangement along SH16 Main Road (with additional turning lanes at intersections), is considered to satisfactorily accommodate the predicted traffic demands. As noted previously, the designation along SH16 Main Road includes sufficient space for a median from where vehicles (including trucks) can turn to and from current driveways that are retained along the proposed corridor.</p>
<p>NoRS4: Access Road</p>	<p>15,000 to 18,000vpd (northern section)</p>	<p>9,400vpd (northern section) 21,100vpd (southern section)</p>	<p>The traffic volumes on Access Road range from 9,400vpd to 21,100vpd. The increased volumes on this corridor are largely as a result of access to the Alternative State Highway. Without the Access Road NOR, connections to the ASH will be constrained by the existing narrow two-lane rural carriageway. A four-lane corridor with limited access can efficiently accommodate up to 22,000 vehicles per day and therefore the proposed corridor design meets the forecasted needs.</p> <p>As discussed in section 8.5 of the Assessment of Transport Effects, there is some inter-dependency between the Access Road Upgrade and the implementation of the ASH. Whilst the long-term traffic demands on the northern section, with full implementation of the completed North West Strategic Package corridors are anticipated to be around or below 10,000 vehicles per day, the provision of four lanes has been identified.</p> <p>Typically, this threshold for four vehicle lanes would be in the order of 15,000 vehicles per day or a greater frequency of bus services. As can be seen, without the NORs, this level of demand could occur on the northern section of Access Road connecting with the current SH16 Main Road corridor, depending on the timing of the ASH implementation in relation to the future growth in Kumeū-Huapai. The proposed designation for four vehicles lanes, therefore provides some necessary flexibility to accommodate this outcome, acknowledging this inter-dependency with the ASH timing, particularly in relation to supporting the reliability of bus services in this interim period.</p>
<p>NoRW1: Trig Road North and NoR: HIF Trig Road</p>	<p>21,800vpd</p>	<p>13,800vpd</p>	<p>As shown the volumes on Trig Road are expected to decrease in future with the network in place. This is largely in response to the interrelationship with Māmari Road and Trig Road and the provision of an additional corridor to support strategic north south movements in Whenuapai. It is noted that no additional vehicle carrying capacity is proposed for Trig Road and that without the</p>

NOR Corridor	Without NORs (2048+)	With NORs (2048+)	Assessment of Outcomes without the NoR
			additional supporting network, Trig Road would have poor level of service for vehicles, public transport and freight movements.
NoRW2: Māmari Road	N/A	16,900vpd	Without the Māmari Road corridor, increased pressure will be placed on Trig Road and other surrounding roads. Traffic volumes on Trig Road as shown above are predicted to be in the region of 21,800 vehicles per day. The corridor as proposed provides two lanes of vehicle capacity and two bus lanes (discussed under PT below).
NoRW3: Brigham Creek Road	21,200 (central Section) 32,700 (east section) 35,200 (West section)	12,500 (central section) 26,600 (east section) 22,900 (west section)	<p>Brigham Creek Road is the main spine route travelling though Whenuapai. As shown the expected traffic volumes at each end of the corridor are relatively high, and without the corridor widening a proposed, significant delays and congestion would be expected in particular at the eastern and western extents of the corridor. This is generally due to this corridor connecting to SH16 and SH18 at its furthest extents.</p> <p>The Brigham Creek corridor is currently a two-lane road, and without the designation in place to increase vehicle capacity, efficient movement along the corridor will be compromised. As a key connection through to future business areas in Whenuapai, the corridor is expected to retain a freight function also. The volumes indicated without the NOR in place, include the scenario where Spedding Road is not in place to provide an indication of the traffic effects on Brigham Creek in a scenario of growth and no intervention. Volumes of 35,200 and 32,700 vehicles per day in a two-lane corridor will result in significant congestion on Brigham Creek Road. It is also noted that with the Spedding Road corridor in place, and carrying in the order of 18,400 vehicles per day, volumes on Brigham Creek still remain at over 22,000 vehicles per day. This further reinforces that without the provision for greater capacity on Brigham Creek Road, significant traffic effects can be expected, along with lower levels of amenity and liveability.</p> <p>Wider network assumptions include the SH16 to 18 connections. The provision of this motorway-to-motorway connection provides additional capacity on an east west movement for vehicles travelling from Kumeū to Albany. The connection enables the Brigham Creek corridor to operate as an arterial corridor, supporting local movements – rather than also providing strategic connections. This project also provides for south facing ramps on Northside Drive and an upgraded interchange at SH18. The project has been included within the do minimum modelling scenario given that a</p>

NOR Corridor	Without NORs (2048+)	With NORs (2048+)	Assessment of Outcomes without the NoR
			business case was completed and the project was identified as a key infrastructure element in the Whenuapai Structure Plan ITA. These infrastructure components reduce expected traffic volumes on Brigham Creek in particular, however it is noted that given the Brigham Creek Road is proposed to provide four lanes, this will provide the flexibility in the event that these larger scale projects are delayed.
NoRW4: Spedding Road	N/A	18,400vpd	The Spedding Road connection provides an important east west link across the Whenuapai growth area. Without this connection, greater volumes are expected on Brigham Creek Road, as discussed above.
NoRW5 Hobsonville Road	21,900vpd between SH16 and Luckens Road 18,200vpd between Luckens Road and Brigham Creek Road 17,300 East of Williams Road	20,200vpd between SH16 and Luckens Road 14,900 vpd between Luckens Road and Brigham Creek Road 16,500 vpd east of Williams Road	Hobsonville Road is predicted to be slightly less trafficked in the future, but, as can be seen from the estimated vpd, relatively consistent. The proposed alteration to the existing designation largely provides for the implementation of facilities to support walking and cycling and public transport use. Bus lanes at the western extent are proposed in response to the potential conflicts between relatively high bus services and high traffic volumes. The Spine Road running parallel to Hobsonville Road provides additional east-west capacity, and local access to the local industrial land. As shown, this results in a decrease in traffic volumes on Hobsonville Road in this central portion. The traffic effects without this NOR in place are minimal.
NoR RE1: Don Buck Road FTN Upgrade	24,600vpd	25,500 – 27,000vpd	Don Buck Road is a heavily trafficked route and will continue to be so in the future. As a key spine route in the North West, there are limited alternative routes running north south, aside from the SH16 corridor. Traffic volumes in the future are expected to increase, and Don Buck Road is also a key public transport route connecting to the Westgate. The proposed cross section for this corridor is currently shown as a four-lane arterial including bus priority lanes. Without this Project in place, there will be limited attractive alternative choices for those travelling by car, such as safe walking and cycling

NOR Corridor	Without NORs (2048+)	With NORs (2048+)	Assessment of Outcomes without the NoR
			<p>facilities, and reliable public transport links. This will continue to exacerbate the existing situation of low mode share.</p> <p>In general, the traffic environment is expected to be largely the same with and without the NOR in place. Congestion will be likely on this corridor; however, this is not a result of the NOR specifically. There is future opportunity for AT to consider operational measures to provide the most efficient use of the four-lane corridor. This could include reduced bus priority to enable transit lanes, or peak bus lanes only. These are matters that would be considered as part of standard network management undertaken by Auckland Transport.</p>
NoR RE2: Fred Taylor Drive	19,400 – 23,900vpd	15,000 to 22,000 vpd	<p>Fred Taylor Drive is an existing strategic north south route in Redhills. The corridor currently has two vehicle lanes. Traffic volumes are expected to be at the higher end of the carrying capacity of a two-lane corridor in sections. The provision of bus lanes along this corridor enables vehicles to move along the corridor with reduced friction from a high frequency of buses entering and exiting the traffic lane.</p> <p>The proposed cross section for this corridor is currently shown as a four-lane arterial including bus priority lanes. Without this Project in place, there will be limited attractive alternative choices for those travelling by car, such as safe walking and cycling facilities, and reliable public transport links. This will continue to exacerbate the existing situation of low mode share.</p> <p>In general, the traffic environment is expected to be largely the same with and without the NOR in place.</p>
NoR R1 Coatesville Riverhead Highway	10,000vpd	9,000vpd	<p>There is little effect from a general traffic outcome should the Project not proceed. Expected traffic volumes without the wider network projects in place and with the Project in place are similar and no additional capacity to that existing is proposed. Key projects assumed to be in place include the provision of a roundabout with SH16 and additional capacity between the intersection and SH16 Brigham Creek Interchange. These improvements are assumed to be in place in the do minimum scenario as these projects are funded and underway.</p>

NOR Corridor	Without NORs (2048+)	With NORs (2048+)	Assessment of Outcomes without the NoR
NoR1: Redhills North-South Arterial Corridor	N/A	8,500	<p>As growth increases in the area the current lack of an arterial network will reduce connectivity and result in a heavy reliance on the existing network around Redhills including Fred Taylor Drive and Don Buck Road. Without an arterial network, there will be an increasing reliance on the local and collector network. This will result in longer, less efficient bus networks, and safe cycle connections on desire lines would be limited. Without providing for through movement functions on arterials, there will likely be an increase in traffic utilising lower order corridors such as local and collector roads, with potential adverse effects on amenity and capacity.</p> <p>Specifically in regard to the NoR1 designation, should this not be present, traffic demands of 8,500 vehicles per day will reroute onto the other roads proposed within the Redhills Basin. Given that peak demand flows show high demands to/from the State Highway network, this will place significant pressure on Fred Taylor Drive intersections with Baker Lane, Don Buck Road and Fred Taylor Drive and Fred Taylor Drive through to SH16. By providing access for vehicles at Don Buck Road/Royal Road this provides attractive alternative routes for vehicles to access SH16 via Royal Road and Triangle Road – spreading these demands across the network.</p>
NoR2a: Redhills East-West Arterial Corridor – Dunlop Road	N/A	8,300	<p>As growth increases in the area the current lack of an arterial network will reduce connectivity and result in a heavy reliance on the existing network around Redhills including Fred Taylor Drive and Don Buck Road. Without an arterial network, there will be an increasing reliance on the local and collector network. This will result in longer, less efficient bus networks, and safe cycle connections on desire lines would be limited. Without providing for through movement functions on arterials, there will likely be an increase in traffic utilising lower order corridors such as local and collector roads, with potential adverse effects on amenity and capacity.</p> <p>The Dunlop Road corridor has been identified as a key public transport route that provides a direct linkage from the Redhills town centre to Westgate and RTN connections. Traffic volumes of 8,300 per day enable buses to be integrated within the two-lane corridor. However, if this corridor was not in place, a high proportion of traffic and buses would likely travel on NoR2b. This would result in some 22,700 vehicles within a two-lane corridor. This will result in a corridor that is at capacity, and provides poor levels of service for vehicles and public transport. The performance of the intersection of Baker Lane and Fred Taylor Drive would significantly worsen without provision of more capacity.</p>

NOR Corridor	Without NORs (2048+)	With NORs (2048+)	Assessment of Outcomes without the NoR
			<p>This is turn would have poor walking and cycling outcomes – which are particularly important given the proximity of the intersection to the Westgate centre.</p>
<p>NoR2b Redhills East – West Arterial Corridor - Baker Lane</p>	<p>N/A</p>	<p>14,400</p>	<p>As growth increases in the area the current lack of an arterial network will reduce connectivity and result in a heavy reliance on the existing network around Redhills including Fred Taylor Drive and Don Buck Road. Without an arterial network, there will be an increasing reliance on the local and collector network. This will result in longer, less efficient bus networks, and safe cycle connections on desire lines would be limited. Without providing for through movement functions on arterials, there will likely be an increase in traffic utilising lower order corridors such as local and collector roads, with potential adverse effects on amenity and capacity.</p> <p>The Baker Lane corridor provides a two-lane corridor connecting Fred Taylor Drive and the future Redhills town centre. Without this corridor in place, the predicted traffic volumes would be rerouted on to Dunlop Road. This would have a negative impact on bus movements along this corridor, and the performance of the Dunlop Road and Fred Taylor Drive intersection. The corridor would be at capacity, and the provision of frequent buses attempting to navigate in and out of traffic from stops would reduce corridor efficiencies as well.</p>
<p>NoR2c Redhill East- West Arterial Corridor Nixon Road connection</p>	<p>N/A</p>	<p>11,400</p>	<p>As growth increases in the area the current lack of an arterial network will reduce connectivity and result in a heavy reliance on the existing network around Redhills including Fred Taylor Drive and Don Buck Road. Without an arterial network, there will be an increasing reliance on the local and collector network. This will result in longer, less efficient bus networks, and safe cycle connections on desire lines would be limited. Without providing for through movement functions on arterials, there will likely be an increase in traffic utilising lower order corridors such as local and collector roads, with potential adverse effects on amenity and capacity.</p> <p>The NoR2c corridor through to Nixon Road provides an arterial connection through to Taupaki, and the western suburbs. The provision of this corridor means that vehicles that are travelling from the more western section of Redhills can access the existing arterial network from Nixon Road/Red Hills Road. Without this corridor, this will be rerouted to the North/South arterial. This intersection with</p>

NOR Corridor	Without NORs (2048+)	With NORs (2048+)	Assessment of Outcomes without the NoR
			<p>Royal Road is predicted to experience delays and congestion in the future, and as such opportunities for redistributing traffic across the network would provide in better network outcomes.</p> <p>Alternatively, a collector network would be implemented in a piecemeal fashion by progressive developers. This would result in multiple access points along Red Hills Road, which is proposed to remain predominately rural nature. This will increase conflict points along the corridor and potentially impact on wider network safety outcomes.</p>

3.3 Walking and Cycling

An assessment of walking and cycling outcomes has been provided below in Table 3-5. This assessment considers that the existing facilities form the basis of the do minimum network. In the case of new arterial connections, the assessment considers existing alternatives that are in place and the outcomes for walking and cycling should alternative corridors be utilised.

Overall, walking and cycling demands are expected to significantly increase as a result of the expected growth. A summary of the expected active mode demands derived from the Strategic Active Mode Model is summarised in Table 3-4. Given that finer grain networks, including collector and local roads, are still in development, assessment of these demands on an area basis is considered to be appropriate and can provide an indication of level of likely demands with the Projects in place.

Table 3-4: Active Mode Demands in 2048+

Growth Area	Predicted Daily Active Modes Demand on the Network by Area
Whenuapai Package	3,200 trips
Redhills-Riverhead Package	2,800 trips
Kumeū -Huapai, Strategic Package	1,500 trips on the local network 300 trips on the Regional Active Mode Corridor

Table 3-5: Walking and Cycling Effects by NOR without the Project in Place

NOR Corridor	Existing	Key Attractors	Assessment of Walking and Cycling Outcomes without the NOR
NoRS1: Alternative State Highway	New Corridor	Kumeū-Huapai urban growth area	<p>The ASH enables the reduction in traffic on SH16 Main Road, providing for additional walking and cycling infrastructure commensurate with an urban town centre arterial that also provides access to the Kumeū and Huapai RTC Stations. In addition to this, adjacent to the ASH is the Regional Active Mode Corridor, which enables unimpeded travel from Kumeū to the SH16 Cycleway in the long-term.</p> <p>Without the ASH, traffic volumes on SH16 Main Road are expected to be around 23,300 vpd. This provides a relatively inhospitable environment for walking and cycling. In addition to this, longer cycle trips through to Westgate and beyond will need to be on the urban corridor of SH16 Main Road. While separated facilities are proposed as part of NoRS2 – the facilities are more suited to the urban environment than longer distance trips, as they will be subject to existing vehicle crossings, intersections, and other activities. The overall journey for cyclists on this corridor would be less convenient and attractive for those longer distance trips than using the ASH and Regional Active Mode Corridor.</p>
NoRS2: SH16 Main Road	Range of facilities – on road bike lanes, footpaths, sections with no facilities, shoulder seal.	Kumeū Town Centre Huapai Local Centre Kumeū and Huapai RTC Stations Regional Active Mode Corridor	<p>In an environment without the SH16 Main Road upgrade, the cycling and walking outcomes will be very poor with no facilities in places, and intermittent walking facilities in others. This would result in poor integration with the proposed future wider walking and cycling network.</p> <p>With the SH16 Main Road NOR, there would be around 4.2km of additional cycling facilities along the corridor providing for local access to the Kumeū Town Centre, Huapai Local Centre, and Kumeū and Huapai RTC Stations, including by providing significantly improved and new, walking and cycling crossing facilities (crossing SH16 Main Road) at Riverhead Road, Weza Lane (connecting to RAMC), Matua Road, Station / Tapu Roads, Trigg Road, Matua Road (West).</p> <p>The ability to contribute to mode shift will be severely compromised if key walking and cycling facilities are not provided. This will lead to further reliance on low-occupancy vehicle use, further exacerbating congestion and safety issues both locally and on the wider network.</p>

NOR Corridor	Existing	Key Attractors	Assessment of Walking and Cycling Outcomes without the NOR
NoRS4: Access Road	<p>No facilities outside of existing urban area.</p> <p>Footpaths adjacent to current urban area</p>	<p>Kumeū-Huapai Town Centre</p> <p>Regional Active Mode Corridor</p>	<p>Without the upgrades to Access Road, access to employment and social amenities will be compromised, especially for immediately adjacent land uses. This will include access between residential and employment opportunities in Kumeū and in the indicative industrial activities on Access Road.</p> <p>In addition there will be poor integration with the proposed future wider walking and cycling network, including in particular providing access to the Regional Active Mode Corridor at the proposed interchange on Tawa Road. The ability to contribute to mode shift will be severely compromised if key walking and cycling facilities are not provided. This will lead to further reliance on low-occupancy vehicle use, further exacerbating congestion and safety issues both locally and on the wider network. This will also significantly increase the crash exposure for vulnerable road users as demand increases.</p> <p>The lack of provision for sustainable travel choices will also lead to adverse environmental and health effects.</p>
NoRW1: Trig Road North	Footpath on one side of corridor	<p>Trig Road Primary School</p> <p>Connectivity to Whenuapai Local Centre</p>	<p>Without the upgrade to Trig Road access to employment and social amenities will be compromised, especially for immediately adjacent land uses. This will include access between residential and employment opportunities in Whenuapai to/from Hobsonville Road. Other key land uses include a proposed school on Trig Road.</p> <p>Poor integration with the proposed future wider walking and cycling network.</p> <p>The ability to contribute to mode shift will be severely compromised if key walking and cycling facilities are not provided. This will lead to further reliance on low-occupancy vehicle use, further exacerbating congestion and safety issues both locally and on the wider network.</p> <p>Significantly increase the crash exposure for vulnerable road users as demand increases</p> <p>Significantly increase the risk for DSI's for vulnerable users</p> <p>Lack of provision for sustainable travel choices will lead to adverse environmental and health effects.</p>

NOR Corridor	Existing	Key Attractors	Assessment of Walking and Cycling Outcomes without the NOR
NoRW2: Māmari Road	<p>Predominantly New Corridor</p> <p>No facilities outside of existing urban area.</p> <p>Footpaths adjacent to current urban area</p>	<p>Whenuapai Local Centre</p> <p>Westgate Metropolitan Centre</p> <p>Future RTN connections</p>	<p>The Māmari Road connection is an extension to a small cul de sac corridor. As such without the Project there will be limited north-south walking and cycling connectivity. Pedestrians and cyclists will need to travel via Trig Road. This is located some 750m (direct line) or from the northern section of Māmari Road – this will require a travel distance some 2.8km to reach Northside Drive via Trig Road compared to 1.6km. This is approximately a doubling of required travel distance, which has significant implications for walking and cycling attractiveness.</p> <p>Access to employment and social amenities will be compromised, especially for immediately adjacent land uses. This will include access between residential and employment opportunities in Westgate and Whenuapai. The Māmari Road corridor provides a central spine for walking and cycling connectivity – connecting via Northside Drive (Existing Designation) to the Metropolitan centre at Westgate.</p> <p>Poor integration with the proposed future wider walking and cycling network.</p> <p>The ability to contribute to mode shift will be severely compromised if key walking and cycling facilities are not provided. This will lead to further reliance on low-occupancy vehicle use, further exacerbating congestion and safety issues both locally and on the wider network.</p> <p>Lack of provision for sustainable travel choices leads to adverse environmental and health effects.</p>
NoRW3: Brigham Creek Road	<p>Intermittent facilities including shared path on eastern extent, no facilities on western extent and mixed on road bike lanes, buffered cycle lanes and</p>	<p>Whenuapai Local Centre</p> <p>Westgate Metropolitan Centre</p> <p>Future RTN connections</p>	<p>Access to employment and social amenities will be compromised, especially for immediately adjacent land uses. Brigham Creek Road provides a core east west spine through Whenuapai. This includes connections to the proposed Whenuapai town centre including employment opportunities and local amenities. The most eastern and western sections of Brigham Creek Road connect to employment opportunities at Hobsonville and Westgate.</p> <p>The Brigham Creek corridor provides intermittent facilities, with a range of level of service for pedestrians and cyclists. This includes shared paths, on road bike lanes and footpaths. This varying provision of facilities provides an inconsistent journey experience and is unlikely to encourage less experienced people to travel by bike or foot.</p>

NOR Corridor	Existing	Key Attractors	Assessment of Walking and Cycling Outcomes without the NOR
	<p>footpaths in local centre and recently developed areas.</p>		<p>Poor integration with the proposed future wider walking and cycling network.</p> <p>The ability to contribute to mode shift will be severely compromised if key walking and cycling facilities are not provided. This will lead to further reliance on low-occupancy vehicle use, further exacerbating congestion and safety issues both locally and on the wider network.</p> <p>Significantly increase the crash exposure for vulnerable road users as demand increases</p> <p>Significantly increase the risk for DSI's for vulnerable users</p> <p>Lack of provision for sustainable travel choices will lead to adverse environmental and health effects.</p>
<p>NoRW4: Spedding Road</p>	<p>Predominantly New Corridor</p> <p>No facilities outside of existing urban area.</p>	<p>Westgate Metropolitan Centre</p> <p>Hobsonville Industrial Area</p> <p>Future business parks</p>	<p>The Spedding Road connection is a new corridor. As such without the Project there will be limited east west walking and cycling connectivity. Pedestrians and cyclists will need to travel via Brigham Creek Road (750m north) or Hobsonville Road (1.5km south). Without NoR4, pedestrians utilising these corridors will need to cross SH18 and SH16 via the interchanges for these State Highways. This creates a significant conflict between vehicles and vulnerable road users at busy interchanges such as Brigham Creek Road where 75,900 vpd are expected to utilise this interchange in 2048+. Without Spedding Road in place this number would increase further by some 18,000vpd.</p> <p>Spedding Road provides a local road connection over SH16 and SH18 addressing severance for pedestrians and cyclists in Whenuapai. Without this connection severance will be a significant deterrent for pedestrians and cyclists.</p> <p>Access to employment and social amenities will be compromised, especially for immediately adjacent land uses. This will include access between residential and employment opportunities in Westgate, Whenuapai and Hobsonville.</p> <p>Poor integration with the proposed future wider walking and cycling network.</p> <p>The ability to contribute to mode shift will be severely compromised if key walking and cycling facilities are not provided. This will lead to further reliance on low-occupancy vehicle use, further exacerbating congestion and safety issues both locally and on the wider network.</p>

NOR Corridor	Existing	Key Attractors	Assessment of Walking and Cycling Outcomes without the NOR
			Lack of provision for sustainable travel choices will lead to adverse environmental and health effects.
NoRW5 Hobsonville Road	Intermittent facilities including shared paths, no facilities and mixed on road bike lanes, buffered cycle lanes and footpaths in local centre and recently developed areas.	Hobsonville Town Centre Westgate Metropolitan Centre Hobsonville Point Secondary School	<p>Access to employment and social amenities will be compromised, especially for immediately adjacent land uses. Hobsonville Road provides a core east west spine through Hobsonville and West Harbour. This includes connections to the Hobsonville town centre and Westgate Metropolitan centre including employment opportunities and local amenities.</p> <p>The Brigham Creek corridor provides intermittent facilities, with a range of level of service for pedestrians and cyclists. This includes shared paths, on road bike lanes and footpaths. This varying provision of facilities provides an inconsistent journey experience and is unlikely to encourage less experienced people to travel by bike or foot.</p> <p>Poor integration with the proposed future wider walking and cycling network.</p> <p>The ability to contribute to mode shift will be severely compromised if key walking and cycling facilities are not provided. This will lead to further reliance on low-occupancy vehicle use, further exacerbating congestion and safety issues both locally and on the wider network.</p> <p>Significantly increase the crash exposure for vulnerable road users as demand increases</p> <p>Significantly increase the risk for DSI's for vulnerable users</p>
NoR RE1: Don Buck Road FTN Upgrade	Intermittent facilities including shared paths, no facilities and mixed on road bike lanes, buffered cycle lanes and footpaths in local centre and	Westgate Metropolitan Centre Massey Local Centre Massey High School Massey Community centre	<p>Access to employment and social amenities will be compromised, especially for immediately adjacent land uses. Don Buck Road provides a north-west spine connecting Massey and Westgate.</p> <p>The Don Buck Road corridor provides intermittent facilities, with a range of level of service for pedestrians and cyclists. This includes shared paths, on road bike lanes and footpaths. This varying provision of facilities provides an inconsistent journey experience and is unlikely to encourage less experienced people to travel by bike or foot.</p> <p>Without the Project the ability to contribute to mode shift will be severely compromised. This will lead to further reliance on low-occupancy vehicle use, further exacerbating congestion and safety issues both locally and on the wider network.</p>

NOR Corridor	Existing	Key Attractors	Assessment of Walking and Cycling Outcomes without the NOR
	recently developed areas.		<p>Significantly increase the crash exposure for vulnerable road users as demand increases</p> <p>Significantly increase the risk for DSI's for vulnerable users</p>
NoR RE2: Fred Taylor Drive	Intermittent facilities including shared paths, no facilities and mixed on road bike lanes, buffered cycle lanes and footpaths in local centre and recently developed areas.	<p>Westgate Metropolitan centre</p> <p>Connections to future RTN</p>	<p>Access to employment and social amenities will be compromised, especially for immediately adjacent land uses. Fred Taylor Drove provides a north south spine connecting to Westgate.</p> <p>The Fred Taylor Drive corridor provides intermittent facilities, with a range of level of service for pedestrians and cyclists. This includes shared paths, on road bike lanes and footpaths, and a section of separated facilities. This varying provision of facilities provides an inconsistent journey experience and is unlikely to encourage less experienced people to travel by bike or foot.</p> <p>Without the Project the ability to contribute to mode shift will be severely compromised. This will lead to further reliance on low-occupancy vehicle use, further exacerbating congestion and safety issues both locally and on the wider network.</p> <p>Significantly increase the crash exposure for vulnerable road users as demand increases</p> <p>Significantly increase the risk for DSI's for vulnerable users</p>
NoR R1 Coatesville Riverhead Highway	No facilities	<p>Riverhead Local centre</p> <p>Connections to Regional Active Mode Corridor</p> <p>Westgate Metropolitan centre</p>	<p>Coatesville- Riverhead Highway currently has no walking cycling facilities in place. Without this NOR there will be limited options for connectivity between Riverhead and Westgate.</p> <p>This will result in the ability to contribute to mode shift being severely compromised. This will then lead to further reliance on low-occupancy vehicle use, further exacerbating congestion and safety issues both locally and on the wider network.</p> <p>In addition, there will be a significant increase in the crash exposure for vulnerable road users as demand increases which will also significantly increase the risk for DSI's for vulnerable users. This is particularly critical for Coatesville Riverhead Highway as a large section of the corridor is proposed to be retained as rural land. This land use will result in a lower opportunity for a legible safer speed</p>

NOR Corridor	Existing	Key Attractors	Assessment of Walking and Cycling Outcomes without the NOR
			environment. Therefore, the provision of a dedicated separated facility for walking and cycling is critical on this corridor.
NoR1: Redhills North-South Arterial Corridor	New Corridor	New Redhills Local Centre Westgate Metropolitan centre	<p>Without this corridor increasing pressure will be placed on Don Buck Road and Fred Taylor Drive. Discussions on these corridors are summarised above.</p> <p>Without this corridor access to employment and social amenities will be compromised, especially for immediately adjacent land uses and connections through to Westgate and the existing local centre on Don Buck Road.</p> <p>Without the Project the ability to contribute to mode shift will be compromised. Without a direct and legible arterial network, the collector network will be relied upon to provide walking and cycling connections. These will be less direct and will have competing demands in terms of access and through movements. This will lead to further reliance on low-occupancy vehicle use, further exacerbating congestion and safety issues both locally and on the wider network.</p>
NoR2a: Redhills East- West Arterial Corridor – Dunlop Road	New Corridor	New Redhills Local Centre Westgate Metropolitan centre	<p>Without this corridor increasing pressure will be placed on Don Buck Road and Fred Taylor Drive. Discussions on these corridors are summarised above.</p> <p>Without this corridor access to employment and social amenities will be compromised, especially for immediately adjacent land uses and connections through to Westgate.</p> <p>Without the Project the ability to contribute to mode shift will be compromised. Without a direct and legible arterial network, the collector network will be relied upon to provide walking and cycling connections. These will be less direct and will have competing demands in terms of access and through movements. This will lead to further reliance on low-occupancy vehicle use, further exacerbating congestion and safety issues both locally and on the wider network.</p>
NoR2b Redhills East – West Arterial Corridor -Baker Lane	New Corridor	New Redhills Local Centre	Without this corridor increasing pressure will be placed on Don Buck Road and Fred Taylor Drive. Discussions on these corridors are summarised above.

NOR Corridor	Existing	Key Attractors	Assessment of Walking and Cycling Outcomes without the NOR
		Westgate Metropolitan centre	<p>Without this corridor access to employment and social amenities will be compromised, especially for immediately adjacent land uses and connections through to Westgate.</p> <p>Without the Project the ability to contribute to mode shift will be compromised. Without a direct and legible arterial network, the collector network will be relied upon to provide walking and cycling connections. These will be less direct and will have competing demands in terms of access and through movements. This will lead to further reliance on low-occupancy vehicle use, further exacerbating congestion and safety issues both locally and on the wider network.</p>
NoR2c Redhill East-West Arterial Corridor Nixon Road connection	New Corridor	New Redhills Local Centre Westgate Metropolitan centre	<p>Without this corridor increasing pressure will be placed on Don Buck Road and Fred Taylor Drive. Discussions on these corridors are summarised above.</p> <p>Without this corridor access to employment and social amenities will be compromised, especially for immediately adjacent land uses and connections through to Westgate.</p> <p>Without the Project the ability to contribute to mode shift will be compromised. Without a direct and legible arterial network, the collector network will be relied upon to provide walking and cycling connections. These will be less direct and will have competing demands in terms of access and through movements. This will lead to further reliance on low-occupancy vehicle use, further exacerbating congestion and safety issues both locally and on the wider network.</p>

3.4 Public Transport

In addition to the Rapid Transit Corridor Project, the North West packages also include four NORs for arterial corridor projects which propose the inclusion of public transport priority measures. These separate arterial corridors are:

- Don Buck Road
- Fred Taylor Drive
- Māmari Road
- Hobsonville Road

It is noted that exact operating strategies will be confirmed in the future prior to implementation, and opportunities for priority lanes that incorporate measures for other modes such as freight and transit lanes could also be considered. This will also consider operational timing requirements such as peak hours and shoulder times or all-day bus lanes.

An assessment of the public transport effects with, and without, each of these projects is set out below.

Table 3-6: Public Transport Effects by NOR without the Project in Place

NOR	Proposed PT Measures	Assessment of PT Priority Provision
NoRS3: Rapid Transit Corridor	<p>Dedicated rapid transit corridor from Brigham Creek to Huapai.</p> <p>A bus every two minutes</p>	<p>The Rapid Transit Corridor is designed to provide a reliable, high-capacity transit option to support the growth in the Kumeū-Huapai.</p> <p>The corridor as proposed will integrate the Rapid Transit Corridor along SH16 and will provide a journey time of 61 minutes from the Kumeū to the City Centre with the NOR in place, when compared to 78 minutes without the NOR. It is noted that the without NOR scenario assumes the SH16 Rapid Transit Corridor is in place. Therefore the travel time savings as noted here relate only to the proposed NOR corridor from Westgate to the Kumeū-Huapai.</p> <p>Without this Project, public transport is extremely poor and subject to congestion. Current conditions indicate that travel time can vary between 16 minutes and upwards of 40 minutes to reach Westgate from Huapai. With no dedicated bus priority, buses will continue to experience the same levels of delay and inconsistency in travel time as private vehicles, in conditions along SH16 that are expected to deteriorate without the Rapid Transit Corridor NOR.</p> <p>Page 85 and 86 of the Strategic Assessment of Transport Effects provides an overview of the expected public transport demands from the North West growth area. The expected demands indicate that a double decker bus every two minutes is necessary to accommodate demand.</p>

NOR	Proposed PT Measures	Assessment of PT Priority Provision
		<p>In order to provide reliable and efficient public transport services in this environment dedicated corridors and stations are required. Without the Rapid Transit Corridor and associated stations, patronage will not reach expected levels as service levels will be unattractive and commuters will continue to travel by private vehicle.</p>
<p>NoRW2: Māmari Road</p>	<p>Dedicated Bus Lanes</p> <p>A bus every five minutes in peak commuter period</p>	<p>The Māmari Road corridor is proposed to provide bus lanes in both directions. Traffic volumes on this corridor are in the order of 16,900 vehicles per day, or 1,690 vehicles in the commuter peak. Vehicle volumes of 1,690 per hour are in the upper region of a two-lane corridor, and without dedicated bus lanes buses will need to navigate traffic, turning movements and re-entering into the traffic at stops for boarding and alighting.</p> <p>This indicates a north-south demand on arterial roads of around 28,000 vehicles per day. Without the Māmari Road corridor, all vehicles and public transport would need to travel on Trig Road. A daily volume of 28,000 vehicles, far exceeds the capacity of Trig Road as a two-lane urban road. It is also noted that Trig Road provides north-south vehicle capacity and carries in the order of 13,800 vehicles per day.</p> <p>The provision of bus lanes on Māmari Road also provides reduced travel distance for buses linking Whenuapai to Westgate centre and connecting to the future RTN station at Westgate. In the longer-term buses will be able to access Westgate station via Northside Drive – providing a congestion free connection from Brigham Creek Road through to Westgate. Without Mamari Road, buses from Whenuapai town centre would need to travel via Brigham Creek interchange and Fred Taylor Drive – a distance of some 4.3km compared to the 2.9km along Māmari Road and Northside Drive.</p>
<p>NoRW5 Hobsonville Road</p>	<p>Intersection Improvements</p> <p>Bus lanes between SH16 and Luckens Road</p> <p>Bus every 10 to 12 mins in the peak commute period</p>	<p>Bus lanes have been proposed on Hobsonville Road between SH16 and Luckens Road to provide buses with additional capacity and reliability. Traffic volumes on the section of Hobsonville Road between Luckens Road and SH16 are expected to be some 2,000 vehicles an hour. Without the NOR in place buses would experience significant delays, as this exceeds the typical capacity of a two-lane road.</p> <p>Without the specific public transport interventions in NOW5, buses will need to navigate traffic and also re-enter traffic following boarding and alighting. These</p>

NOR	Proposed PT Measures	Assessment of PT Priority Provision
		<p>movements are difficult on a heavily trafficked route and will also impact on vehicle movements along the corridor.</p> <p>Within the remainder of the corridor, bus advance lanes have been allowed for within the footprint designs to enable buses to move quickly through signals – further increasing attractiveness of public transport travel.</p> <p>Reliable connectivity to the Westgate centre and the rapid transit network stations in the future provides an attractive transport choice for North West commuters. Without priority measures, commuters will find limited value in travelling by public transport.</p>
<p>NoR RE1: Don Buck Road FTN Upgrade</p>	<p>Bus Lanes</p> <p>Bus every five minutes in the peak commuter period</p>	<p>Don Buck Road is currently a heavily trafficked route, and will continue to carry high traffic volumes in the future. Traffic volumes are expected to be in the region of 25,000 vehicles per day. This hourly volume is approximately 2,500 vehicles per hour which exceeds the vehicle capacity of a two-lane road. .</p> <p>The provision of bus lanes will enable higher frequency public transport services to operate with a high degree of reliability. Without the NOR proposed bus lanes, public transport will be subject to congestion, unreliable journey times and poor levels of service.</p> <p>As noted above, there is future opportunity for Auckland Transport to consider operational measures to provide the most efficient use of the four-lane corridor. This could include reduced bus priority to enable transit lanes, or peak period bus lanes only. These are matters that would be considered as part of standard network management undertaken by Auckland Transport.</p>
<p>NoR RE2: Fred Taylor Drive</p>	<p>Bus Lanes</p> <p>Bus every five minutes in the peak commuter period</p>	<p>Bus lanes are proposed to be provided on Fred Taylor Drive. The provision of dedicated and reliable access for local services to the Westgate Metropolitan Centre and the proposed rapid transit network station is critical to support wider public transport objectives related to mode shift.</p> <p>Fred Taylor Drive is expected to carry between 15,000 and 22,000 vehicles per day. These daily volumes indicate peak volumes of between 1,500 and 2,200 vehicles per hour.</p> <p>Vehicle volumes of this magnitude are in the upper region of a two-lane corridor, and without the NOR in place, buses will need to navigate traffic, turning movements and re-entering into the traffic at stops for boarding and</p>

NOR	Proposed PT Measures	Assessment of PT Priority Provision
		alighting. This will have an impact on bus reliability and travel times.

4 Project Interdependencies and Relationships

Further information has been requested on the interdependencies of the Projects. As discussed above, it is noted that the approach to the North West NOR packages is founded on the development of an integrated network within the framework of full growth implementation. The subsequent transport infrastructure required to support this growth in a manner consistent with current policy direction has been identified and does by nature of considering an integrated network, result in various inter-relationships and inter-dependencies.

There are both inter-dependencies and the uncertainty in terms of delivery and staging, of both the land use release and associated infrastructure, over the proposed lapse dates for the NOR packages. Therefore, there is a degree of reliance on management plans to enable Projects to be provided in a manner that will be integrated with the surrounding transport network and land use present at the time of implementation.

This is overarched by the statutory requirements of both Auckland Transport and Waka Kotahi NZ Transport Agency (Waka Kotahi) to contribute to *an effective, efficient, and safe (Auckland) land transport system in the public interest*.⁶ This requirement will extend to the integration of the identified NORs/Projects with the surrounding transport network in the future environment context.

As such, whilst recognising there is this uncertainty / risk with the long-term timeframe for some of the NORs / Projects, it is considered that the proposed conditions and statutory requirements, supported by other internal processes (such as the requirement for an Implementation Business Case) that apply to Auckland Transport and Waka Kotahi will enable the effects to be further considered and addressed prior to implementation.

In addition to this, it is also noted that the designs currently used to inform the designation footprints are considered to be an indicative design, that can be altered to some degree in the future prior to implementation to enable the Projects to be integrated with the surrounding road network. This approach is managed by the proposed Urban Design and Landscape Management Plan condition (Refer to Section 7 below).

Specific details on the inter-dependencies of Projects by mode has been included in the above tables and also generally within the Assessment of Transport Effects for each of the NOR Packages. The table below provides details on how these inter-dependencies can be effectively managed.

⁶ <https://www.legislation.govt.nz/act/public/2003/0118/latest/DLM226236.html> and <https://www.legislation.govt.nz/act/public/2009/0032/latest/DLM2322355.html>

NOR Corridor	Inter-dependencies / relationships	Management of Interdependencies
NoRS1: Alternative State Highway	SH16 Main Road Rapid Transit Corridor (and Regional Active Modes Corridor) Access Road Upgrade SH16 to SH18 Connections Project	<p><u>Within NORs</u></p> <ul style="list-style-type: none"> – Overlapping intersection designations to enable intersection upgrades to be implemented regardless of staging – Condition 10: UDLMP covering integration of the Project with the transport and urban (future urban) environment – Access Road Upgrade designation extent provides for flexibility in relation to the implementation timing of the ASH, as discussed in the Assessment of Transport Effects. <p><u>Standard Practice</u></p> <ul style="list-style-type: none"> – Auckland Transport and Waka Kotahi statutory requirements – Implementation Business Case to confirm Project outcomes – One Network reassessment and Integration with the Network Operating Plan as per standard procedures by Auckland Transport and Waka Kotahi – Detailed Design commensurate with implementation works – Road Safety Audits to ensure appropriate and safe tie ins for all modes.
No2S2: SH16 Main Road	Alternative State Highway Rapid Transit Corridor (and Regional Active Modes Corridor) (and NoRKS and NoRHS: the Kumeū and Huapai Stations) Access Road Upgrade	<p><u>Within NOR</u></p> <ul style="list-style-type: none"> – Overlapping intersection designations to enable intersection upgrades to be implemented regardless of staging – Condition 10: UDLMP covering integration of the Project with the transport and urban (future urban) environment. <p><u>Standard Practice</u></p> <ul style="list-style-type: none"> – Auckland Transport and Waka Kotahi statutory requirements – Implementation Business Case to confirm Project outcomes – Roads and Streets Framework and One Network reassessment to confirm modal priority – Integration with the Network Operating Plan as per standard procedures by Auckland Transport – Detailed Design commensurate with implementation works – Road Safety Audits to ensure appropriate and safe tie ins for all modes.
NoRS3: Rapid Transit Corridor (and NoRKS and NoRHS: the	Alternative State Highway and SH16 Main Road Access Road	<p><u>Within NOR</u></p> <ul style="list-style-type: none"> – Overlapping intersection designations to enable intersection upgrades to be implemented regardless of staging

NOR Corridor	Inter-dependencies / relationships	Management of Interdependencies
Kumeū and Huapai Stations)	North West Rapid Transit Corridor Full Implementation (City Centre to Westgate)	<ul style="list-style-type: none"> – Condition 10: UDLMP covering integration of the Project with the transport and urban (future urban) environment. <p><u>Standard Practice</u></p> <ul style="list-style-type: none"> – Waka Kotahi statutory requirements – Implementation Business Case to confirm Project outcomes – Detailed Design commensurate with implementation works – Road Safety Audits to ensure appropriate and safe tie ins for all modes.
NoRS4: Access Road	Alternative State Highway SH16 Main Road	<p><u>Within NOR</u></p> <ul style="list-style-type: none"> – Overlapping intersection designations to enable intersection upgrades to be implemented regardless of staging – Condition 10: UDLMP covering integration of the Project with the transport and urban (future urban) environment. <p><u>Standard Practice</u></p> <ul style="list-style-type: none"> – Auckland Transport statutory requirements – Implementation Business Case to confirm Project outcomes – Roads and Streets Framework and One Network reassessment to confirm modal priority – Integration with the Network Operating Plan as per standard procedures by Auckland Transport – Detailed Design commensurate with implementation works. – Road Safety Audits to ensure appropriate and safe tie ins for all modes.
NoRW1: Trig Road North and NoR: HIF Trig Road	Māmari Road Brigham Creek Road Hobsonville Road	<p><u>Within NOR</u></p> <ul style="list-style-type: none"> – Overlapping intersection designations at Trig Road/Brigham Creek Road to enable intersection upgrades to be implemented regardless of staging – Hobsonville Road/Trig Road intersection to be included as part of Trig Road works. Design tie ins to be provided at midblock locations – Condition 10: UDLMP covering integration of the Project with the transport and urban (future urban) environment. <p><u>Standard Practice at Implementation</u></p> <ul style="list-style-type: none"> – Auckland Transport statutory requirements – Implementation Business Case to confirm Project outcomes – Roads and Streets Framework and One Network reassessment to confirm modal priority – Integration with the Network Operating Plan as per standard procedures by Auckland Transport

NOR Corridor	Inter-dependencies / relationships	Management of Interdependencies
		<ul style="list-style-type: none"> – Detailed Design commensurate with implementation works. – Road Safety Audits to ensure appropriate and safe tie ins for all modes.
NoRW2: Māmari Road	Trig Road Brigham Creek Road SH16 to SH18 Connections Project	<p><u>Within NOR</u></p> <ul style="list-style-type: none"> – Overlapping intersection designations at Brigham Creek and Māmari Road to enable intersection upgrades to be implemented regardless of staging – Condition 10: UDLMP covering integration of the Project with the transport and urban (future urban) environment. <p><u>Standard Practice</u></p> <ul style="list-style-type: none"> – Auckland Transport statutory requirements – Implementation Business Case to confirm Project outcomes – Roads and Streets Framework and One Network reassessment to confirm modal priority – Integration with the Network Operating Plan as per standard procedures by Auckland Transport – Detailed Design commensurate with implementation works. – Road Safety Audits to ensure appropriate and safe tie ins for all modes.
NoRW3: Brigham Creek Road	Spedding Road SH16 to SH18 Connections Project	<p><u>Within NOR</u></p> <ul style="list-style-type: none"> – Overlapping intersection designations to enable intersection upgrades to be implemented regardless of staging. – Designation footprint sufficient to enable connection with SH18 interchange upgrades or enable Brigham Creek Upgrade and future interchange upgrades. – Condition 10: UDLMP covering integration of the Project with the transport and urban (future urban) environment. This is considered to be particularly relevant on this corridor as development pressure is current and ongoing. <p><u>Standard Practice</u></p> <ul style="list-style-type: none"> – Auckland Transport statutory requirements – Implementation Business Case to confirm Project outcomes – Roads and Streets Framework and One Network reassessment to confirm modal priority – Integration with the Network Operating Plan as per standard procedures by Auckland Transport – Detailed Design commensurate with implementation works. – Road Safety Audits to ensure appropriate and safe tie ins for all modes.

NOR Corridor	Inter-dependencies / relationships	Management of Interdependencies
NoRW4: Spedding Road	Brigham Creek Road Hobsonville Road	<p><u>Within NOR</u></p> <ul style="list-style-type: none"> – Overlapping intersection designations at Fred Taylor Drive and Hobsonville Road to enable intersection upgrades to be implemented regardless of staging. – Condition 10: UDLMP covering integration of the Project with the transport and urban (future urban) environment. Elements of this corridor are proposed to be partially delivered by developers as part of PC69. There is also a section of the corridor between SH18 and Hobsonville Road that has been set aside by developers. <p><u>Standard Practice</u></p> <ul style="list-style-type: none"> – Auckland Transport statutory requirements – Implementation Business Case to confirm Project outcomes – Roads and Streets Framework and One Network reassessment to confirm modal priority – Integration with the Network Operating Plan as per standard procedures by Auckland Transport – Detailed Design commensurate with implementation works. – Road Safety Audits to ensure appropriate and safe tie ins for all modes.
NoRW5 Hobsonville Road NoR: HIF Trig Road	Spedding Road Trig Road	<p><u>Within NOR</u></p> <ul style="list-style-type: none"> – Overlapping intersection designations to enable intersection upgrades to be implemented regardless of staging. In the case of Hobsonville Road this means that should new intersections be made, appropriate tie ins can be provided. – Condition 10: UDLMP covering integration of the Project with the transport and urban (future urban) environment. <p><u>Standard Practice</u></p> <ul style="list-style-type: none"> – Auckland Transport statutory requirements – Implementation Business Case to confirm Project outcomes – Roads and Streets Framework and One Network reassessment to confirm modal priority – Integration with the Network Operating Plan as per standard procedures by Auckland Transport – Detailed Design commensurate with implementation works. – Road Safety Audits to ensure appropriate and safe tie ins for all modes.
NoR RE1: Don Buck Road FTN Upgrade	Fred Taylor Drive Intersection	<p><u>Within NOR</u></p> <ul style="list-style-type: none"> – Overlapping intersection designations to enable intersection upgrades to be implemented regardless of

NOR Corridor	Inter-dependencies / relationships	Management of Interdependencies
	North South Arterial Redhills	<p>staging. This includes the intersection of Don Buck Road with Fred Taylor Drive and with Royal Road.</p> <ul style="list-style-type: none"> – Condition 10: UDLMP covering integration of the Project with the transport and urban (future urban) environment. <p><u>Standard Practice</u></p> <ul style="list-style-type: none"> – Auckland Transport statutory requirements – Implementation Business Case to confirm Project outcomes – Roads and Streets Framework and One Network reassessment to confirm modal priority – Integration with the Network Operating Plan as per standard procedures by Auckland Transport – Detailed Design commensurate with implementation works. – Road Safety Audits to ensure appropriate and safe tie ins for all modes.
NoR RE2: Fred Taylor Drive	Spedding Road intersection East West Arterial Redhills (Baker Lane) East West Arterial Redhills (Dunlop Road)	<p><u>Within NOR</u></p> <ul style="list-style-type: none"> – Overlapping intersection designations to enable intersection upgrades to be implemented regardless of staging. This includes with Dunlop Road, Baker Lane, Spedding Road. – Condition 10: UDLMP covering integration of the Project with the transport and urban (future urban) environment. <p><u>Standard Practice</u></p> <ul style="list-style-type: none"> – Auckland Transport statutory requirements – Implementation Business Case to confirm Project outcomes – Roads and Streets Framework and One Network reassessment to confirm modal priority – Integration with the Network Operating Plan as per standard procedures by Auckland Transport – Detailed Design commensurate with implementation works. – Road Safety Audits to ensure appropriate and safe tie ins for all modes.
NoR R1 Coatesville Riverhead Highway	SH16 Brigham Creek to Waimauku Improvements Project	<p><u>Within NOR</u></p> <ul style="list-style-type: none"> – Design completed to integrate with Waka Kotahi SH16 Brigham Creek to Waimauku Improvements Project. Overlapping designation not provided, as works on SH16 not within Project scope. – Condition 10: UDLMP covering integration of the Project with the transport and urban (future urban) environment. This will consider walking and cycling connectivity in the case that the intersection upgrades do not proceed the Project as expected.

NOR Corridor	Inter-dependencies / relationships	Management of Interdependencies
		<p><u>Standard Practice</u></p> <ul style="list-style-type: none"> – Auckland Transport statutory requirements – Implementation Business Case to confirm Project outcomes – Roads and Streets Framework and One Network reassessment to confirm modal priority – Integration with the Network Operating Plan as per standard procedures by Auckland Transport – Detailed Design commensurate with implementation works. – Road Safety Audits to ensure appropriate and safe tie ins for all modes.
NoR1: Redhills North-South Arterial Corridor	Don Buck Road East West Arterial Redhills (All sections)	<p><u>Within NOR</u></p> <ul style="list-style-type: none"> – Overlapping intersection designations to enable intersection upgrades to be implemented regardless of staging. This includes the intersection of Royal Road and Don Buck Road. – Condition 10: UDLMP covering integration of the Project with the transport and urban (future urban) environment. <p><u>Standard Practice</u></p> <ul style="list-style-type: none"> – Auckland Transport statutory requirements – Roads and Streets Framework and One Network reassessment to confirm modal priority – Integration with the Network Operating Plan as per standard procedures by Auckland Transport – Detailed Design commensurate with implementation works. – Road Safety Audits to ensure appropriate and safe tie ins for all modes.
NoR2a: Redhills East- West Arterial Corridor – Dunlop Road	Fred Taylor Drive Don Buck Road	<p><u>Within NOR</u></p> <ul style="list-style-type: none"> – Overlapping intersection designations at Fred Taylor Drive to enable intersection upgrades to be implemented regardless of staging. – Condition 10: UDLMP covering integration of the Project with the transport and urban (future urban) environment. <p><u>Standard Practice</u></p> <ul style="list-style-type: none"> – Auckland Transport statutory requirements – Roads and Streets Framework and One Network reassessment to confirm modal priority – Integration with the Network Operating Plan as per standard procedures by Auckland Transport – Detailed Design commensurate with implementation works. – Road Safety Audits to ensure appropriate and safe tie ins for all modes.

NOR Corridor	Inter-dependencies / relationships	Management of Interdependencies
NoR2b Redhills East – West Arterial Corridor - Baker Lane	Fred Taylor Drive East – West Arterial (Dunlop Road) East- West Arterial Corridor (Nixon Road connection)	<u>Within NOR</u> <ul style="list-style-type: none"> – Overlapping intersection designations at Fred Taylor Drive to enable intersection upgrades to be implemented regardless of staging. – Condition 10: UDLMP covering integration of the Project with the transport and urban (future urban) environment. <u>Standard Practice</u> <ul style="list-style-type: none"> – Auckland Transport statutory requirements – Roads and Streets Framework and One Network reassessment to confirm modal priority – Integration with the Network Operating Plan as per standard procedures by Auckland Transport – Detailed Design commensurate with implementation works. – Road Safety Audits to ensure appropriate and safe tie ins for all modes.
NoR2c Redhill East- West Arterial Corridor Nixon Road connection	Fred Taylor Drive East West Arterial (Baker Lane) East – West Arterial (Dunlop Road)	<u>Within NOR</u> <ul style="list-style-type: none"> – Overlapping intersection designations not provided for this corridor. – Condition 10: UDLMP covering integration of the Project with the transport and urban (future urban) environment. <u>Standard Practice</u> <ul style="list-style-type: none"> – Auckland Transport statutory requirements – Roads and Streets Framework and One Network reassessment to confirm modal priority – Integration with the Network Operating Plan as per standard procedures by Auckland Transport – Detailed Design commensurate with implementation works. – Road Safety Audits to ensure appropriate and safe tie ins for all modes.

5 Auckland Unitary Plan Assessment

An assessment against the key Objectives and Policies of the AUP:OP has been provided in Section 29 of the NW Local Arterial Package, Section 28 of the NW Strategic Package and Appendix B to the AEEs for HIF Trig Road and HIF Redhills Arterials. We provide a further assessment to the specific Chapter E27 Objectives below, as requested.

AUP:OP Objective Ref.	Objective	Assessment
E27.2(3)	Parking and loading supports urban growth	The approach to parking on the arterial corridors will be considered at the detailed design stage. Parking provision will

AUP:OP Objective Ref.	Objective	Assessment
	and the quality compact urban form	be in line with the Auckland Transport Parking Strategy and Auckland Unitary Plan requirements at the time of implementation.
E27.2(4)	The provision of safe and efficient parking, loading and access is commensurate with the character, scale and intensity of the zone	The approach to parking will be considered at the detailed design stage and will be in line with the Auckland Transport Parking Strategy and Auckland Unitary Plan requirements at the time of implementation.
E27.2(5)	Pedestrian safety and amenity along public footpaths is prioritised.	An objective for all NoRs is to support a safe transport network for all users. All corridors provide active mode facilities which will meet Auckland Transport and Waka Kotahi design requirements at the time of implementation in accordance with the Urban and Landscape Design Management Plan condition.
E27.2(6)	Road/rail crossings operate safely with neighbouring land use and development.	There is sufficient footprint within the Rapid Transit Corridor designation to replace existing level crossings on Matua Rd West and Boord Crescent with bridges. Where the NoR crosses the North Auckland Line, level crossings are not proposed in the indicative design in order to support safety outcomes.

6 Construction Traffic Management

Further information was requested in relation to the effects of the staging and timing of construction of the Strategic Package.

The Construction Traffic Management Plans (CTMPs), required to be prepared for the construction phase, will consider the detailed mitigation measures to manage construction traffic. The CTMPs will extend over the full construction period of any of the proposed Projects and will be prepared and approved prior to construction. These CTMPs will identify any adverse effects and mitigation measures required for each stage with a greater level of detail. Most critically, the CTMPs will be based on the prevailing context during construction, including traffic patterns, bus services, adjacent land use changes, impacts of wider projects and policies and the specific construction methodology.

It is considered that preparing detailed mitigation measures now would be speculative and potentially inaccurate as we do not have sufficient certainty in regard to the construction methodology and future transport environment (during construction phase, i.e. approximately 15 years from now). It is noted that the proposed approach of confirming specific mitigations for each stage of works at the time of implementation has been utilised successfully in multiple large projects including Ara Tuhono – Puhoi to Warkworth, SH20 Waterview Tunnel and the Northern Corridor project.

Mitigation measures such as behavioural change mechanisms and travel planning measures are likely to be necessary and, if required, will be part of future CTMPs. Identifying mitigation measures

for the construction phase now could potentially limit other mitigation methods that may be considered / available in the future.

The Construction Traffic Management Plan condition (refer to Section 7 below) records these requirements, including a very clearly stated objective to avoid, remedy or mitigate, as far as is practical, the effects of construction. As such, we do not consider that additional analysis is required at this stage to understand how the construction effects would be managed via the Conditions.

7 Proposed Conditions

The following conditions have been proposed.

Condition 10: Urban and Landscape Design Management Plan (ULDMP)

- a) A ULDMP shall be prepared prior to the Start of Construction for a Stage of Work.
- b) Mana Whenua shall be invited to participate in the development of the ULDMP(s) to provide input into relevant cultural landscape and design matters including how desired outcomes for management of potential effects on cultural sites, landscapes and values identified and discussed in accordance with Condition 8(c) may be reflected in the ULDMP. The objective of the ULDMP(s) is to:
 - i. Integration of the Project's permanent works into the surrounding landscape and urban context; and
 - ii. Ensure that the Project manages potential adverse landscape and visual effects as far as practicable and contributes to a quality urban environment.
- c) The ULDMP shall be prepared in general accordance with:
 - i. Waka Kotahi Urban Design Guidelines: Bridging the Gap (2013) or any subsequent updated version;
 - ii. Waka Kotahi Landscape Guidelines (2013) or any subsequent updated version;
 - iii. Waka Kotahi P39 Standard Specification for Highway Landscape Treatments (2013) or any subsequent updated version; and
- d) To achieve the objective, the ULDMP(s) shall provide details of how the project:
 - i. Is designed to integrate with the adjacent urban (or proposed urban) and landscape context, including the surrounding existing or proposed topography, urban environment (i.e. centres and density of built form), natural environment, landscape character and open space zones (including Fred Taylor Park);
 - ii. Provides appropriate walking and cycling connectivity to, and interfaces with, existing or proposed adjacent land uses, public transport infrastructure and walking and cycling connections;
 - iii. Promotes inclusive access (where appropriate); and
 - iv. Promotes a sense of personal safety by aligning with best practice guidelines, such as:
 - a. Crime Prevention Through Environmental Design (CPTED) principles;
 - b. Safety in Design (SID) requirements; and
 - c. Maintenance in Design (MID) requirements and anti-vandalism / anti-graffiti measures.
- e) The ULDMP(s) shall include:

- i. a concept plan – which depicts the overall landscape and urban design concept, and explain the rationale for the landscape and urban design proposals;
 - ii. developed design concepts, including principles for walking and cycling facilities and public transport; and
 - iii. landscape and urban design details – that cover the following:
 - a. Road design – elements such as intersection form, carriageway gradient and associated earthworks contouring including cut and fill batters and the interface with adjacent land uses, benching, spoil disposal sites, median width and treatment, roadside width and treatment;
 - b. Roadside elements – such as lighting, fencing, wayfinding and signage;
 - c. Architectural and landscape treatment of all major structures, including bridges and retaining walls;
 - d. Architectural and landscape treatment of noise barriers;
 - e. Landscape treatment of permanent stormwater control wetlands and swales;
 - f. Integration of passenger transport;
 - g. Pedestrian and cycle facilities including paths, road crossings and dedicated pedestrian / cycle bridges or underpasses;
 - h. Historic heritage places with reference to the HHMP;
 - i. Reinstatement of construction and site compound areas, driveways, accessways and fences;
- f) The ULDMP shall also include the following planting details and maintenance requirements:
- i. planting design details including:
 - a. identification of existing trees and vegetation that will be retained with reference to the Tree Management Plan and Ecological Management Plan. Where practicable, mature trees and native vegetation should be retained;
 - b. street trees, shrubs and ground cover suitable for berms;
 - c. treatment of fill slopes to integrate with adjacent land use, streams, riparian margins and open space zones;
 - d. planting of stormwater wetlands;
 - e. identification of vegetation to be retained and any planting requirements under Conditions 23 and 24;
 - f. integration of any planting requirements required by conditions of any resource consents for the project; and
 - g. re-instatement planting of construction and site compound areas as appropriate.
 - ii. 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 Work; and
 - iii. detailed specifications relating to the following:
 - a. weed control and clearance;
 - b. pest animal management (to support plant establishment);
 - c. ground preparation (top soiling and decompaction);
 - d. mulching; and
 - e. plant sourcing and planting, including hydroseeding and grassing, and use of eco-sourced species.

Condition 18: Construction Traffic Management Plan (CTMP)

- a) A CTMP shall be prepared prior to the Start of Construction for a Stage of Work.
- b) The objective of the CTMP is to avoid, remedy or mitigate, as far as practicable, adverse construction traffic effects. To achieve this objective, the CTMP shall include:
 - i. methods to manage the effects of temporary traffic management activities on traffic;
 - ii. measures to ensure the safety of all transport users;
 - iii. the estimated numbers, frequencies, routes and timing of traffic movements, including any specific non-working or non-movement hours to manage vehicular and pedestrian traffic near schools or to manage traffic congestion;
 - iv. site access routes and access points for heavy vehicles, the size and location of parking areas for plant, construction vehicles and the vehicles of workers and visitors;
 - v. identification of detour routes and other methods to ensure the safe management and maintenance of traffic flows, including pedestrians and cyclists, on existing roads;
 - vi. methods to maintain vehicle access to property and / or private roads where practicable, or to provide alternative access arrangements when it will not be;
 - vii. the management approach to loads on heavy vehicles, including covering loads of fine material, the use of wheel-wash facilities at site exit points and the timely removal of any material deposited or spilled on public roads; and
 - viii. methods that will be undertaken to communicate traffic management measures to affected road users (e.g. residents / public / stakeholders / emergency services).
 - ix. Auditing, monitoring and reporting requirements relating to traffic management activities shall be undertaken in accordance with the Waka Kotahi Code of Practice for Temporary Traffic Management.

ATTACHMENT 10

**SUPPORTING GROWTH ALLIANCE
SOCIAL IMPACT ASSESSMENT ADDENDUM**

North West Strategic Social Impact Assessment Addendum

January 2023

Version 1

Document Status

Responsibility	Name
Author	Kelly Bingham
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Revision Status

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0.1	20/01/23	Issue to Council

Disclaimer

This is a draft document for review by specified persons at Auckland Transport and the New Zealand Transport Agency. This draft will subsequently be updated following consideration of the comments from the persons at Auckland Transport and the New Zealand Transport Agency. This document is therefore still in a draft form and is subject to change. The document should not be disclosed in response to requests under the Official Information Act 1982 or Local Government Official Information and Meetings Act 1987 without seeking legal advice.

1 Introduction

This addendum responds to review comments on the soft lodgement draft of the North West Strategic Social Impact Assessment (SIA).

The bulk of the original SIA was completed by October 2022. A soft-lodgement review was undertaken in November 2022. In addition, other technical assessments were completed in November/December 2022 that the SIA relied on and engagement with stakeholders and the wider community has continued in parallel.

This addendum should be read in conjunction with the SIA. Where this assessment supersedes and/or updates information in the SIA, this has been expressly noted.

This addendum forms part of the suite of technical reports that inform the Assessment of Effects on the Environment (AEE) and supports the Notices of Requirement for:

- Alternative State Highway (ASH) including Brigham Creek Interchange: NoR S1
- SH16 Main Road Upgrade: NoR S2
- Rapid Transit Corridor (RTC) including the Regional Active Mode Corridor (RAMC): NoR S3
- Kumeu Rapid Transit Station: NoR KS
- Huapai Rapi Transit Station: NoR HS
- Access Road Upgrade: NoR S4

For additional Project information reference should be made to the AEE. Note Section 24 Property and Land Use relates to directly impacted private properties and the approach to managing effects.

2 Assumptions and Exclusions of SIA

The soft lodgement review noted that while the SIA sets out assumptions and exclusions relating to the social area of influence (see section 3.3.1 of the SIA), there were no assumptions and exclusions set out for the overall report. Assumptions and exclusions have therefore been noted in this addendum (noting some of the assumptions listed below are also listed in section 3.3.1 of the SIA).

The following assumptions have informed the SIA:

- The SIA has been based on the drawings and the construction methodology for each NoR provided in the AEE report
- The SIA is based on current information. The SIA covers five proposed designations (and Projects within these) which are not anticipated to be built for up to 20 years. There may be notable changes to the design and nature of the projects (within the designation envelope) during detailed design which could potentially alter the extent or likelihood of some social impacts
- At the time that the SIA was prepared, conversations regarding mitigation (for Fred Taylor Park and Huapai Domain) were occurring between Auckland Council and Te Tupu Ngātahi. It is assumed that these conversations will continue and that a preferred mitigation option will be developed during detailed design.
- This SIA is in part informed by consultation carried out up to the date of report preparation. It is recognised that the consultation process is on-going.
- It is assumed that the Projects will be constructed in a staged and planned manner

- The full build out of all projects will occur by 2048
- For those parts of the community that are live zoned currently, both construction and operation will occur in the 'existing' environment.
- Land zoned as Future Urban Zone (FUZ) will be urbanised in the future
- Construction of Projects will likely occur in parallel with the urbanisation of FUZ land (although much of this urbanisation may have already occurred given the long term nature of the Projects.
- Plan changes, re-zoning and development staging is likely to follow the approximate timings set out in the Urban Land Supply Strategy 2017
- Early land use and transport integration work has been done in the Kumeū – Huapai and Riverhead town centres (see the Auckland Council Spatial Land Use Strategy) but any further integration work will be done after these NoRs have been lodged (e.g. structure planning and any Council-led plan changes). This will involve collaboration with Auckland Council, AT and Waka Kotahi.

The following exclusions are noted:

- Economic impacts were not assessed as part of this SIA, except for where changes in employment / business activity may have social impacts on the community.
- Cultural impacts were not assessed as part of this SIA.
- Property acquisition processes are dealt with under the Public Works Act. Impacts of property acquisition are not assessed in this SIA except where they relate to social impacts on the remaining community (i.e. people moving out of the area and altering the character of the community).

3 Impact assessment table

The following table outlines each of the impacts identified in the SIA in greater detail, including the anticipated duration, scale and impacted stakeholders for each impact. It does not change the overall impact ratings given in the SIA, but aims to provide additional clarity on the nature of each impact, as requested in the soft lodgement review. Where the overall impact ratings have changed since the submitted SIA was drafted, this is noted in the footnotes.

This table should be read alongside the impact assessment sections of the SIA (sections 5.1 to 7.6) and the methodology outlined in section 3.4 of the SIA.

An anticipated 'duration' is provided in this table for each potential impact; the following scale is used to measure likely duration:

Short term: 0-12 months

Medium term: 1-5 years

Sustained: 5+ years

In the impact assessment section of the SIA (sections, 5.1 to 7.6), impacts on 'sustaining oneself' were assessed. The soft lodgement review noted that these impacts could likely be considered under the categories of 'way of life' and/or 'community cohesion' instead of in a standalone category, and as such impacts on 'sustaining oneself' (i.e. people's ability to obtain their daily needs) have been considered under these two categories in the tables below.

3.1 Regional impacts (for all NoRs)

This table should be read alongside section 7.2 of the SIA.

Impact category	Impact	NoRs	Who	Nature of effect	Scale	Likelihood	Duration	Impact rating without mitigation	Recommended mitigation	Impact rating with mitigation
Route Protection Phase										
Fears and aspirations	NoRs positively contributing to / confirming people's aspirations for the region (re. reducing traffic congestion and improving resilience of network)	All NoRs	People across the region with aspirations regarding traffic congestion / network resilience (particularly those who regularly travel through the North West), including Local Boards and decision makers.	Positive	Moderate	Moderate	Sustained	Moderate positive	N/A	N/A
Construction Phase										
Way of life	Increase in traffic congestion/delays due to construction – more difficult for people to move around the area.	Main Road NoR (NoR S2)	People across the region who move through the North West to access recreation, employment, education etc – particularly those who do so semi-regularly.	Negative	Moderate	High	Medium	Moderate negative	Retaining one lane in each direction where possible (as recommended in Integrated Transport Assessment) Constructing ASH prior to Main Road works would provide an	Low-moderate negative

Impact category	Impact	NoRs	Who	Nature of effect	Scale	Likelihood	Duration	Impact rating without mitigation	Recommended mitigation	Impact rating with mitigation
									<p>alternative route through the area, minimizing congestion along Main Road.</p> <p>Provision of information to the regional community to allow them to plan ahead for construction works.</p>	
Operation Phase										
Way of life	Reduction of traffic congestion and improved resilience of the transport network will make it easier for people to move around the area and will free up time for other activities (less time in traffic).	All NoRs	People across the region who move through the North West to access recreation, employment, education etc – particularly those who do so semi-regularly.	Positive	Moderate - High	High	Sustained	High positive	N/A	N/A
Community cohesion	Improved transport network will make it easier for people to connect to their communities both within the North West and across Auckland.	All NoRs	People across the region who move through the North West to connect with friends/family or access community amenities - particularly those who do so semi-regularly.	Positive	Moderate - High	High	Sustained	High positive	N/A	N/A
	Improved transport network will make it easier for people from across Auckland to utilize community assets such as the Kumeū Community Centre and Showgrounds	All NoRs	People from across the region who attend events at Kumeū Community Centre of Kumeū Showgrounds	Positive	Moderate	High	Sustained	Moderate positive ¹	N/A	N/A
Health and wellbeing	Increased opportunities for walking and cycling, with associated health benefits.	RAMC/RTC, Access Road, Main Road	People across the North West who choose to walk or cycle throughout the	Positive	Moderate	Moderate	Sustained	Moderate positive ²	N/A	N/A

¹ This was given a 'high positive' impact rating in the SIA but has been changed to moderate positive to reflect the fact that impacts will be limited to those who travel from across Auckland to access community assets in Kumeū.

² This impact rating was originally 'high positive' in the SIA and has since been changed to 'moderate positive', acknowledging that walking and cycling benefits may be limited (at a regional scale) to those who are happy to walk/cycle longer distances.

Impact category	Impact	NoRs	Who	Nature of effect	Scale	Likelihood	Duration	Impact rating without mitigation	Recommended mitigation	Impact rating with mitigation
			area (or who are unable/do not drive)							
	Reduction in traffic along Main Road will contribute to a safer street environment (more pedestrian/cyclist friendly) – reduced health risks for cyclists and pedestrians using this road.	Main Road	People across the North West who walk/cycle along Main Road semi regularly	Positive	Moderate	High	Sustained	Moderate positive ³	N/A	N/A
Fears and aspirations	NoRs positively contributing to / confirming people's aspirations for the region (re. reducing traffic congestion and improving resilience of network and transport choice)	All NoRs (noting some ASH may adversely impact on some people's aspirations as noted below)	People across the region with aspirations regarding traffic congestion / network resilience (particularly those who regularly travel through the North West), including Local Boards and decision makers.	Positive	Moderate	Moderate	Sustained	Moderate positive ⁴	N/A	N/A
	ASH adversely impacting some people's aspirations regarding sustainability (new state highway not aligning with people's aspirations to reduce car dependence)	ASH	People across the region, including decision makers, with aspirations regarding reducing car dependence and carbon emissions.	Negative	Moderate	Moderate	Sustained	Moderate negative ⁵	Delivery of all NoRs as a package will overall improve transport choice and help people to shift away	Low – moderate negative

3.2 NoR S1 (Alternative State Highway incl Brigham Creek Interchange)

This table should be read alongside section 7.3 of the SIA.

³ This impact rating was originally 'high positive' in the SIA but has been changed to moderate positive, acknowledging that those living in the regional community (i.e. the wider Auckland community) are not likely to visit Main Road frequently; benefits of an improved Main Road streetscape are therefore more limited for this regional group.

⁴ This impact rating was originally 'high positive' in the SIA but has been changed to moderate positive, acknowledging that across the region, the number of people who have aspirations for the Kumeū – Huapai area may be limited (i.e. these positive benefits may not be widely experienced across the region).

⁵ This impact rating was originally 'high positive' in the SIA but has been changed to moderate positive, acknowledging that amongst the regional community, the number of people who have aspirations for the Kumeū – Huapai area may be limited (i.e. the positive benefits will be limited in terms of the number of people impacted).

Impact category	Impact	Who	Nature of effect	Scale	Likelihood	Duration	Impact rating without mitigation	Recommended mitigation	Impact rating with mitigation
Route Protection Phase									
Fears and aspirations	NoR delivering on people's aspirations for the future of their community	Landowners and businesses in the local and wider communities	Positive	Low	Moderate	Sustained	Low positive	N/A	N/A
Health and wellbeing	Stress and anxiety for some landowners and businesses who are uncertain about the nature and timing of land acquisition	Impacted landowners and businesses in the rural zoned parts of the local community	Negative	Moderate – High (increasing in severity the longer uncertainty remains)	High	Medium term - sustained	Moderate negative	The designation itself may alleviate some anxiety and will provide landowners and business owners some ability to plan for the future, as the extent of the project and its impacts will be known (noting that there will still be some uncertainty around timing and funding). Provision of accurate, up to date information about property acquisition and what to expect during route protection phase and beyond. Dedicated contact number for queries during route protection phase.	Low negative
		Impacted landowners and businesses in the future urban zoned parts of the local community	Negative	Low (noting these areas are undergoing change anyway so will likely be more tolerance for change / uncertainty)	High	Medium term - sustained	Low negative ⁶		Very low negative
	Certainty (and reduced stress) about the future of the area for some landowners and businesses – allowing people to plan ahead with certainty	Impacted landowners and businesses in the local community	Positive	Low	Moderate	Sustained	Low positive	N/A	N/A
Community cohesion	Changes to community character as people move away from the area due to acquisition	Landowners in the rural zoned parts of the local community	Negative	Low – Moderate	Moderate	Medium	Low – moderate negative (noting communities change over time naturally and while this may exacerbate changes in community character, some change would likely	Provision of information about the project well in advance of acquisition occurring, so that people can understand and feel prepared for changes.	Low negative

⁶ In the SIA, impacts on the local community were assessed 'overall' as being moderate negative. This impact rating has been changed to 'low negative' to acknowledge that the urban parts of the community may experience less change than those in the rural parts of the community.

							occur over time anyway)		
Construction Phase									
Way of life	Disruption to traffic during construction could make it more difficult for people to go about their daily activities (largely limited to interchanges (Foster Road and Brigham Creek) as most construction will be offline)	People in the wider and local community moving through the area for their daily activities (work, education, recreation etc).	Negative	Very low	High	Short term	Low negative	Construction Management Plan should set out measures to manage and minimize traffic congestion where possible. Likely traffic diversions / delays should be clearly communicated to the community well in advance so that people can plan ahead.	Negligible – very low negative
	Reduction in people's ability to use Fred Taylor Park for both organized and informal recreation during construction period (two playing fields are within the current designation envelope)	People in the wider and local community who use Fred Taylor Park for informal recreation. West Coast Rangers football club and members.	Negative	Low - moderate	High	Medium	Moderate negative	Conversations are currently underway with Auckland Council to determine how best to mitigate impacts on Fred Taylor Park – a preferred solution will be determined following detailed design.	Low negative
	Construction noise and vibration could cause people to temporarily change their daily routines to avoid noise (i.e. avoiding working from home or spending less time in the garden)	People in the local community within close proximity to the designation corridor	Negative	Low - moderate	Moderate	Short term (weeks)	Very low negative	Construction Management Plan should set out measures to manage and minimize construction noise where practicable. Clear communication about the upcoming construction period should be provided to local residents so that they are mentally prepared for the works and have a chance to ask questions about the construction period.	Very low negative
Community cohesion	Disruption to traffic during construction could make it more difficult for people to connect to other people and services in	People in the wider and local community moving through the area to visit	Negative	Very low	High	Short term	Very low negative	Construction Management Plan should set out measures to	Negligible – very low negative

	the community (largely limited to interchanges (Foster Road and Brigham Creek) as most construction will be offline)	family and friends and connect to community services.						manage and minimize traffic congestion where possible. Likely traffic diversions / delays should be clearly communicated to the community well in advance so that people can plan ahead.	
Health and wellbeing	Temporary reduction in people's ability to use Fred Taylor Park for informal recreation - impacts on people's mental and physical health if their ability to exercise is reduced.	People in the wider and local community who use Fred Taylor Park for informal recreation. West Coast Rangers football club and members.	Negative	Low - moderate	Moderate	Medium	Low - moderate	Conversations are currently underway with Auckland Council to determine how best to mitigate impacts on Fred Taylor Park – a preferred solution will be determined following detailed design.	Low negative
	Construction noise and vibration could cause temporary stress and anxiety for some local residents, particularly if it disrupts daily activities such as working from home or sleeping.	People in the local community within close proximity to the designation corridor	Negative	Low - moderate	Moderate	Short term (weeks)	Low negative	Construction Management Plan should set out measures to manage and minimize construction noise where practicable. Clear communication about the upcoming construction period should be provided to local residents so that they are mentally prepared for the works and have a chance to ask questions about the construction period.	Very low negative
Quality of environment	Temporary change in quality of environment due to construction noise and vibration – from a quiet rural environment to one characterized by construction noise and busy-ness.	People in the local community within close proximity to the designation corridor	Negative	Low-moderate	High	Medium term	Low – moderate negative	Construction Management Plan should set out measures to manage and minimize construction noise where practicable. Clear communication about the upcoming construction period should be provided to local	Low negative

									residents so that they are mentally prepared for the works and have a chance to ask questions about the construction period.	
Operation Phase										
Way of life	ASH will facilitate easier movement around the community, making it easier for people to go about their daily activities such as accessing work, education and recreation.	People in the wider and local communities who travel throughout the community regularly	Positive	Low	Moderate	Sustained	Low positive	N/A		N/A
	By redirecting some traffic away from Main Road, traffic congestion on Main Road may reduce – if this reduces people’s commuting time they will have more time freed up for other activities.		Positive	Low	Moderate	Sustained	Low positive	N/A		N/A
	Reducing traffic congestion along Main Road will make it easier to safely access businesses and services in Kumeū - Huapai	Business owners in Kumeū – Huapai and members of the wider and local community who shop along Main Road	Positive	Low	Moderate	Sustained	Low positive	N/A		N/A
	Permanent acquisition of two training fields at Fred Taylor Park will reduce the amount of space that the community has for informal recreation	Members of the local and wider community who use Fred Taylor Park for informal recreation	Negative	Very low (noting remainder of park will still be available)	High	Sustained	Very low negative ⁷	Conversations are currently underway with Auckland Council to determine how best to mitigate impacts on Fred Taylor Park – a preferred solution will be determined following detailed design.		Negligible – very low negative
	Permanent acquisition of two training fields at Fred Taylor Park will reduce the amount of space that the West Coast Rangers club has for training and game days (noting the Club can also use Huapai Domain)	Members of the West Coast Rangers football club	Negative	Very low (noting remainder of park and Huapai Domain will	High	Sustained	Very low negative ⁸	Conversations are currently underway with Auckland Council to determine how best to mitigate impacts on Fred Taylor Park – a preferred solution will be		Negligible – very low negative

⁷ This was originally assessed as 'low negative' but has been changed to 'very low negative' in recognition of the fact that the remainder of the park will still be available for use.

⁸ This was originally assessed as 'low negative' but has been changed to 'very low negative' in recognition of the fact that the remainder of the park will still be available for use.

				still be available)				determined following detailed design.	
Community cohesion	ASH will facilitate easier movement around the community, making it easier for people to connect to others in the community (friends and family) and access community and social services	People in the wider and local communities who travel throughout the community regularly	Positive	Low	Moderate	Sustained	Low positive	N/A	N/A
	The ASH could create a sense of severance between parts of the rural community on either side of the corridor	People in the local community in the rural areas along the corridor	Negative	Low	Moderate	Sustained	Low negative	Provision of information about the project well in advance of acquisition could help the community to understand and mentally prepare for any changes in their community	Very low – low negative
Fears and aspirations	ASH will help to realise people’s aspirations around making it easier for people to get around the community, and reducing traffic congestion along SH16	People in the wider and local communities	Positive	Low	Moderate	Sustained	Low positive	N/A	N/A
Health and wellbeing	Provision of walking and cycling infrastructure along the ASH will make it easier for people to incorporate exercise into their daily activities (benefits for both mental and physical health)	People in the wider and local communities who are able to walk/cycle for exercise	Positive	Low	Moderate – High	Sustained	Low positive	N/A	N/A
	Permanent acquisition of two training fields at Fred Taylor Park may reduce the local community’s ability to use the park for informal exercise	Members of the local and wider community who use Fred Taylor Park for informal recreation	Negative	Very low (noting remainder of park will still be available)	Moderate	Sustained	Very low negative	Conversations are currently underway with Auckland Council to determine how best to mitigate impacts on Fred Taylor Park – a preferred solution will be determined following detailed design.	Negligible – very low negative
Quality of environment	A reduction in traffic (particularly large vehicles) along Main Road could improve the quality of the environment for those living along SH16 / Main Road (less noise, busy-ness and vibration)	Members of the local community living along SH16/Main Road in close proximity to the road corridor	Positive	Very low (noting these people will still live alongside a road so will still experience noise and traffic)	Low - moderate	Sustained	Low positive	N/A	N/A

	A permanent increase in ambient noise (from having a new state highway running through a previously quiet rural area) in the rural zoned areas along the corridor may detract from the quality and amenity of the environment.	Members of the local community living in rural zoned areas in close proximity to the designation	Negative	Low	Moderate - High	Sustained	Moderate negative ⁹	Noise barriers (as recommended in Operational Noise report) would reduce noise levels and associated disruption. Planting along the corridor (as recommended in the Landscape Assessment) could reduce the visual dominance of the ASH	
	A permanent increase in ambient noise in the FUZ zoned areas along the corridor may detract from the quality and amenity of the environment – noting these areas will be urbanised by the time the ASH is operational, so will have higher levels of ambient noise than at present.	Members of the local community living in urban zoned areas in close proximity to the designation	Negative	Very low	Low - moderate	Sustained	Very low negative	Planting along corridor could somewhat reduce ambient noise	Very low negative

3.3 NoR S2 (SH16 Main Road Upgrade)

This table should be read alongside section 7.4 of the SIA. Changes to the original SIA are acknowledged in footnotes.

Impact category	Impact	Who	Nature of effect	Scale	Likelihood	Duration	Impact rating without mitigation	Recommended mitigation	Impact rating with mitigation
Route Protection Phase									
Fears and aspirations	Route protection could help people feel that their aspirations for the area are being realised in regards to reducing traffic congestion and making Main Road a safer, more pleasant/attractive space.	People in the wider community with aspirations relating to improving Main Road	Positive	Low	Moderate	Medium term – sustained	Low positive	N/A	N/A
		People in the local community with aspirations relating to improving Main Road	Positive	Moderate (given local community likely experiences issues with Main Road more regularly than wider community)	Moderate - High	Medium term - sustained	Moderate positive	N/A	N/A

⁹ This was originally a 'low negative' impact rating in the SIA but has been changed to moderate negative, acknowledging the sustained duration of the change.

<p>Quality of environment</p>	<p>Business owners may decide not to renew leases due to uncertainty about when they will need to relocate – this could reduce the amenity and quality of environment of Main Road if there are vacant properties for a period of time</p> <p>This is related to the timing of the transport network route protection and structure planning/plan changes, including those associated with bringing forward land uses identified in the Spatial Land Use Strategy - North West. Structure Planning will give more certainty on land use but is not scheduled till 2028. Until more certainty on land use is given this impact will be experienced.</p>	<p>People in both the wider and local community, particularly those who regularly shop along Main Road</p>	<p>Negative</p>	<p>Moderate (noting this could be low depending on how many business owners a) feel uncertain and b) act on this)</p>	<p>Low</p>	<p>Medium term - sustained</p>	<p>Moderate¹⁰ negative</p>	<p>The designation itself may alleviate some anxiety and will provide landowners and business owners some ability to plan for the future, as the extent of the project and its impacts will be known (noting that there will still be some uncertainty around timing and funding).</p> <p>Provision of regular updates to businesses about likely timeframes for acquisition, and clearly communicating that these projects are not planned for implementation in the short term could reduce the likelihood of businesses vacating early.</p> <p>Supporting Growth and Auckland Council collaboration and continued communication and engagement with the community on structure planning and /or other land use plans.</p>	<p>Low-Moderate¹¹ negative</p>
<p>Way of life</p>	<p>Vacant businesses (see the above row) could mean that people need to travel further afield to access goods and services</p>	<p>People in both the wider and local community, particularly those who regularly shop along Main Road</p>	<p>Negative</p>	<p>Low</p>	<p>Low</p>	<p>Medium term - sustained</p>	<p>Very low - Low negative¹²</p>	<p>Provision of regular updates to businesses about likely timeframes for acquisition, and clearly communicating that these projects are not planned for implementation in the short term could reduce the likelihood of businesses vacating early.</p>	<p>Very low negative</p>
<p>Health and wellbeing</p>	<p>Business owners could experience stress and anxiety due to the uncertainty of the future of their business along Main Road (i.e. when they will need to relocate and how this aligns with their current/future lease agreement)¹³</p> <p>This is related to the timing of the transport network route protection and</p>	<p>Business owners along Main Road</p>	<p>Negative</p>	<p>Moderate</p>	<p>Moderate</p>	<p>Medium - sustained</p>	<p>Moderate negative¹⁴</p>	<p>Provision of regular updates to businesses about likely timeframes for acquisition, and clearly communicating that these projects are not planned for implementation in the short term.</p> <p>The designation itself may alleviate some anxiety and will provide</p>	<p>Low negative¹⁵</p>

¹⁰ These concerns have been raised by Kumeū business owners in a meeting with Te Tupu Ngātahi in late 2022, as such the rating for this impact rating from the SIA as increased from Low to Moderate.

¹¹ This impact rating from the SIA has increased from very-low to low-moderate, and is dependent on land use and planning outcomes

¹² This was originally given a 'low negative' impact rating but has been changed to very low – low negative, acknowledging the low likelihood of this occurring.

¹³ These concerns have been raised by Kumeū business owners in a meeting with Te Tupu Ngātahi in late 2022, as such the rating for this impact rating from the SIA as increased from Low-Moderate to Moderate.

¹⁴ This was originally given a 'low-moderate' impact rating but has been changed to moderate following feedback received from Kumeū business owners (see the above footnote).

¹⁵ The rating for this impact from the SIA as increased from very low negative to low negative

structure planning/plan changes, including those associated with bringing forward land uses identified in the Spatial Land Use Strategy - North West. Structure Planning will give more certainty on land use but is not scheduled till 2028. Until more certainty on land use is given this impact will be experienced.

landowners and business owners some ability to plan for the future, as the extent of the project and its impacts will be known (noting that there will still be some uncertainty around timing and funding).

Supporting Growth and Auckland Council collaboration and continued communication and engagement with the community on structure planning and /or other land use plans.

Construction Phase

Way of life	Construction traffic, delays and diversions could make it more difficult for people to move through the area for their daily needs – SH16 is already regularly congested so any further delays could lead to very long journey times for some people.	People in the wider and local community who use Main Road to move around the community or who access goods/services/employment along Main Road	Negative	Moderate (noting Main Road is a well-used part of the network)	High	Medium	Moderate negative	Preparation of a CTMP which identifies measures to minimize traffic delays where possible.	Low negative
	Closures or congestion on Main Road could mean that people need to travel further afield to access goods and services that they would normally obtain on Main Road	People in the wider and local community who shop along Main Road	Negative	Low	Moderate	Medium	Low negative	Clear communications to the community about upcoming construction periods so that they have time to plan ahead.	Very low negative
	Construction noise, vibration and traffic may change the way some people go about their daily activities (i.e. avoiding working from home or spending less time outdoors)	People in the local community who live in close proximity to Main Road	Negative	Moderate	Moderate - High	Short term (impacts only likely to be concentrated outside each property for a short length of time)	Low – moderate negative ¹⁶	Preparation of a CTMP which identifies measures to minimize traffic delays where possible. Preparation of a Construction Noise and Vibration Plan which identifies measures to minimize construction noise where possible	Low negative
							Clear communications to the community about upcoming		

¹⁶ This was originally given a 'moderate negative' impact rating but has been changed to low negative, acknowledging the likely short time frame that this impact would be experienced for.

								construction periods so that they have time to plan ahead.	
Community cohesion	Construction traffic/delays could make it harder for people to visit family, friends and access community services and facilities (such as activities at Huapai Domain or Kumeū Community Centre)	People in the wider and local community who use Main Road to move around the community or to attend community facilities like Huapai Domain	Negative	Moderate	High	Medium	Moderate negative	Preparation of a CTMP which identifies measures to minimize traffic delays where possible. Clear communications to the community about upcoming construction periods so that they have time to plan ahead. Specific comms to community facilities (schools, Domain, football and cricket clubs etc) to allow them to advise their members of the need to allow extra travel time. Dedicated 24/7 complaints and queries phone line for people to ask questions and raise concerns.	Low negative
Health and wellbeing	Construction noise, vibration and traffic may cause stress and anxiety for people living along Main Road, particularly if activities like sleeping and working are impacted	People in the local community who live in close proximity to Main Road	Negative	Moderate	Moderate - High	Short term (impacts only likely to be concentrated outside each property for a short length of time)	Low – moderate negative	Preparation of a CTMP which identifies measures to minimize traffic delays where possible. Preparation of a Construction Noise and Vibration Plan which identifies measures to minimize construction noise where possible Clear communications to the community about upcoming construction periods so that they have time to plan ahead.	Low negative

	Business owners could experience stress and anxiety if patronage decreases for an ongoing period during construction	Businesses in the local community along Main Road	Negative	Moderate	Moderate	Medium - sustained	Moderate negative ¹⁷	Preparation of a CTMP which identifies measures to minimize traffic delays where possible. Clear communications to businesses about construction timeframes – so that they can communicate this to their customers and plan ahead. Consideration of how to embed broader outcomes into the Project by considering innovative ways to support local businesses throughout the construction period.	Low negative
Quality of environment	Construction noise, vibration and traffic may temporarily reduce the quality of environment for people living along Main Road	People in the local community who live in close proximity to Main Road	Negative	Moderate	Moderate - High	Short term (impacts only likely to be concentrated outside each property for a short length of time)	Low – moderate negative	Preparation of a CTMP which identifies measures to minimize traffic delays where possible. Preparation of a Construction Noise and Vibration Plan which identifies measures to minimize construction noise where possible Clear communications to the community about upcoming construction periods so that they have time to plan ahead.	Low negative
Operation Phase									
Way of life	Upgrades will make it easier for people to travel to or through Main Road	People in the wider and local community who regularly or semi-regularly	Positive	Moderate	High	Sustained	Moderate positive	N/A	N/A

¹⁷ This was originally given a low-moderate negative impact but has been changed to moderate negative, acknowledging feedback provided in a meeting between Kumeū property owners and Te Tupu Ngātahi where property owners raised concerns about the project causing stress and anxiety for businesses.

	(particularly on bike or by foot) to meet their daily needs	travel to or through Main Road – particularly those who walk or cycle								
Community cohesion	People may spend more time on Main Road if there is more space for pedestrians – more opportunities for socializing and unplanned interactions	People in the wider and local community who regularly or semi-regularly travel to or through Main Road	Positive	Moderate	Low - moderate	Sustained	Moderate positive	N/A		N/A
	Upgrades will make it easier for pedestrians and cyclists to travel through the area to connect to friends and family	People in the wider and local community who regularly or semi-regularly walk or bike to/through Main Road	Positive	Low - Moderate	Moderate	Sustained	Moderate positive	N/A		N/A
Fears and aspirations	Upgrades will positively contribute to the community’s aspirations to create a more pedestrian friendly/safer/more pleasant Main Road environment, and to have a neighbourhood that it easier to get around	People in the wider and local community with aspirations for the improvement of Main Road, including business owners and local boards	Positive	Moderate – high	High	Sustained	High positive	N/A		N/A
Health and wellbeing	Provision of dedicated walking and cycling facilities will improve safety for people walking and cycling through the area (physical safety benefits as well as a potential reduction in stress/anxiety when navigating Main Road on bike/by foot)	People in the wider and local community who regularly or semi-regularly walk or bike to/through Main Road	Positive	Moderate	High	Sustained	Moderate positive ¹⁸	N/A		N/A
Quality of environment	Upgrades (particularly the provision of more space for pedestrians) could contribute to a more enjoyable street environment along Main Road	People in the wider and local community who visit Main Road regularly	Positive	Low	Moderate	Sustained	Low positive	N/A		N/A

3.4 NoR S3 (Rapid Transit Corridor and Regional Active Mode Corridor), NoR KS (Kumeū Rapid Transit Station), NoR HS (Huapai Rapid Transit Station)

This section should be read alongside section 7.5 of the SIA.

¹⁸ This was originally rated as 'low positive' but has been changed to moderate, acknowledging the high likelihood of this impact being realised.

Impact category	Impact	Who	Nature of effect	Scale	Likelihood	Duration	Impact rating without mitigation	Recommended mitigation	Impact rating with mitigation
Route Protection Phase									
Fears and aspirations	Community members will have confirmation that there are plans in place to improve public transport and active mode infrastructure through Kumeū, and to reduce traffic congestion along SH16.	People within the wider and local communities	Positive	Low – moderate	Low – moderate	Sustained	Low – moderate positive	N/A	N/A
	Business owners may feel that their aspirations for the future are being realised if they have confirmation that people will eventually be able to travel to and from the local community easier.	Business owners within the local community but outside of the designation envelope (i.e. not being acquired)	Positive	Low	Low-moderate	Sustained	Low – moderate positive	N/A	N/A
Quality of environment	<p>Business owners within the designation envelope may decide not to renew leases due to uncertainty about when they will need to relocate – this could reduce the amenity and quality of environment of Main Road if there are vacant properties for a period of time</p> <p>This is related to the timing of the transport network route protection and structure planning/plan changes, including those associated with bringing forward land uses identified in the Spatial Land Use Strategy - North West. Structure Planning will give more certainty on land use but is not scheduled till 2028. Until more certainty on land use is given this impact will be experienced</p>	People in both the wider and local community, particularly those who regularly shop along Main Road	Negative	Moderate (noting this could be low ¹⁹ depending on how many business owners a) feel uncertain and b) act on this)	Low	Medium term - sustained	Moderate ²⁰	<p>Provision of regular updates to businesses about likely timeframes for acquisition, and clearly communicating that these projects are not planned for implementation in the short term could reduce the likelihood of businesses vacating early.</p> <p>The designation itself may alleviate some anxiety and will provide landowners and business owners some ability to plan for the future, as the extent of the project and its impacts will be known (noting that there will still be some uncertainty around timing and funding).</p>	Low negative ²¹

¹⁹ This impact rating from the SIA as increased from Low-Moderate to Moderate following feedback received from the business community

²⁰ These concerns have been raised by Kumeū business owners in a meeting with Te Tupu Ngātahi in late 2022, as such the rating for this impact rating from the SIA as increased from Low to Moderate.

²¹ The rating for this impact from the SIA as increased from very low negative to low negative

								Supporting Growth and Auckland Council collaboration and continued communication and engagement with the community on structure planning and /or other land use plans.		
Way of life	Vacant businesses could mean that people need to travel further afield to access goods and services	People in both the wider and local community, particularly those who regularly shop along Main Road	Negative	Low		Low	Medium term - sustained	Very low - Low negative ²²	Provision of regular updates to businesses about likely timeframes for acquisition, and clearly communicating that these projects are not planned for implementation in the short term could reduce the likelihood of businesses vacating early.	Very low negative
Community cohesion	Changes to community character as people relocate from area due to acquisition	Landowners in the rural zoned parts of the local community	Negative	Low – Moderate		Moderate	Medium	Low – moderate negative (noting communities change over time naturally and while this may exacerbate changes in community character, some change would likely occur over time anyway)	Provision of information about the project well in advance of acquisition occurring, so that people can understand and feel prepared for changes.	Low negative
Health and wellbeing	Business owners could experience stress and anxiety due to the uncertainty of the future of their business along Main Road (i.e. when they will need to relocate and how this	Business owners along Main Road	Negative	Moderate		Moderate	Medium - sustained	Moderate negative ²⁴	Provision of regular updates to businesses about likely timeframes for acquisition, and clearly communicating that these projects are not planned	Very low – low negative

²² This was originally rated low negative, but has been changed to very low – low negative acknowledging the low likelihood of this occurring (i.e. for this impact to be realised, business owners would need to not renew leases along Main Road and these businesses would need to not be replaced by others).

²⁴ This was originally given a 'low-moderate' impact rating but has been changed to moderate following feedback received from Kumeū business owners (see the above footnote).

<p>aligns with their current/future lease agreement)²³</p> <p>This is related to the timing of the transport network route protection and structure planning/plan changes, including those associated with bringing forward land uses identified in the Spatial Land Use Strategy - North West. Structure Planning will give more certainty on land use but is not scheduled till 2028. Until more certainty on land use is given this impact will be experienced.</p>							<p>for implementation in the short term.</p> <p>The designation itself may alleviate some anxiety and will provide landowners and business owners some ability to plan for the future, as the extent of the project and its impacts will be known (noting that there will still be some uncertainty around timing and funding).</p> <p>Supporting Growth and Auckland Council collaboration and continued communication and engagement with the community on structure planning and /or other land use plans.</p>	
<p>Landowners / renters within the designation envelope could feel stress, uncertainty and anxiety if they do not have enough clarity around the anticipated timing of construction and acquisition.</p>	<p>Landowners or people living/renting within the designation envelope in the local community</p>	<p>Negative</p>	<p>Low – moderate (increasing in scale the longer uncertainty persists)</p>	<p>Moderate</p>	<p>Medium - sustained</p>	<p>Moderate negative</p>	<p>The designation itself may alleviate some anxiety and will provide landowners and business owners some ability to plan for the future, as the extent of the project and its impacts will be known (noting that there will still be some uncertainty around timing and funding).</p> <p>Provision of accurate, up to date information about property acquisition and what to expect during route protection phase and beyond.</p> <p>Dedicated contact number for queries during route protection phase.</p>	<p>Low negative</p>

²³ These concerns have been raised by Kumeū business owners in a meeting with Te Tupu Ngātahi in late 2022, as such the rating for this impact rating from the SIA as increased from Low-Moderate to Moderate.

Construction Phase									
Way of life	Most construction will occur offline, but delays/diversions/congestion may occur at key interchanges which could make it more difficult (on top of existing traffic congestion) for people to use SH16 to go about their daily activities	People in the wider and local community who use SH16 as a transport route regularly or semi-regularly	Negative	Low - moderate	High	Short term	Low - moderate negative	Preparation of a traffic management plan which identifies measures to minimize/mitigate any traffic disruption Clear comms to the community in advance of construction works to allow them to plan ahead Dissemination of a dedicated 24/7 complaints and queries phone number for the construction period	Low negative
	Parts of Huapai Domain will be unable to be used during construction, and access from SH16 will be closed to the public. The park may be temporarily out of action for both informal and formal recreation, including for Kumeū Cricket Club and/or West Coast Rangers Football Club.	People in the wider and local community who use Huapai Domain for formal or informal recreation including West Coast Rangers Football Club and Kumeū Cricket Club	High	High (noting Huapai Domain is well used by two sports clubs plus many other users)	High	Medium	High negative	Discussions are currently underway with Auckland Council Parks – a preferred mitigation option for Huapai Domain will be finalized during detailed design. It is recommended that West Coast Rangers and Kumeū Cricket Club are consulted on the draft mitigation option. Clear signposting of alternative access to Huapai Domain if SH16 access is closed.	Low - moderate negative

	Construction noise, vibration and traffic congestion could change the way people go about their daily activities (i.e. avoiding working from home) – likely a temporary impact for weeks – months	People living in the local community in close proximity to the designation envelope	Negative	Moderate		Moderate - High	Short term (impacts only likely to be concentrated outside each property for a short length of time)	Low – moderate negative	Preparation of a CTMP which identifies measures to minimize traffic delays where possible. Preparation of a Construction Noise and Vibration Plan which identifies measures to minimize construction noise where possible Clear communications to the community about upcoming construction periods so that they have time to plan ahead.	Low negative
Community cohesion	Construction impacts at key interchanges could make it harder for people to move around the area to visit family and friends / connect to community facilities and services	People in the wider and local community who use SH16 as a transport route regularly or semi-regularly	Negative	Low - moderate		High	Short term	Low - moderate negative	Preparation of a traffic management plan which identifies measures to minimize/mitigate any traffic disruption Clear comms to the community in advance of construction works to allow them to plan ahead Dissemination of a dedicated 24/7 complaints and queries phone number for the construction period	Low negative
	Temporarily inability to use Huapai Domain for organized and / or informal recreation could limit people’s ability to connect to others through sport and recreation.	People in the wider and local community who use Huapai Domain for formal	Negative Negative	High (noting Huapai Domain is well used by two sports clubs plus many other users)		Moderate - high	Medium	Moderate negative	Discussions are currently underway with Auckland Council Parks – a preferred mitigation option for Huapai Domain will be	Low negative.

Health and wellbeing	Temporarily inability to use Huapai Domain for organized and / or informal recreation could limit people's opportunities for exercise.	or informal recreation including West Coast Rangers Football Club and Kumeū Cricket Club						finalized during detailed design.		
								It is recommended that West Coast Rangers and Kumeū Cricket Club are consulted on the draft mitigation option.		
								Clear signposting of alternative access to Huapai Domain if SH16 access is closed.		
	Construction noise, vibration and traffic congestion could adversely impact residents health and wellbeing by causing stress and anxiety, particularly if activities like sleeping are disrupted (a temporary impact)	People living in the local community in close proximity to the designation envelope	Negative	Moderate		Moderate - High	Short term (impacts only likely to be concentrated outside each property for a short length of time)	Low – moderate negative	Preparation of a CTMP which identifies measures to minimize traffic delays where possible.	Low negative
								Preparation of a Construction Noise and Vibration Plan which identifies measures to minimize construction noise where possible		
								Clear communications to the community about upcoming construction periods so that they have time to plan ahead.		
	If business patronage along Main Road reduces temporarily during construction (as a result of additional traffic congestion / diversions, noise and vibration), business owners could experience stress and anxiety about their ability to continue operating.	Business owners along Main Road	Negative	Moderate		Moderate	Short - medium	Moderate negative	Preparation of a CTMP which identifies measures to minimize traffic delays where possible.	Low negative
								Preparation of a Construction Noise and		

								<p>Vibration Plan which identifies measures to minimize construction noise where possible.</p> <p>Clear communications to the community about upcoming construction periods so that they have time to plan ahead.</p> <p>Consider how broader outcomes could be achieved through the project by exploring options to support businesses through the construction period.</p>	
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Quality of environment	Construction noise, vibration and traffic congestion could temporarily detract from the quality of environment both along Main Road and in the rural parts of the corridor	People living in the local community in close proximity to the designation envelope	Negative	Moderate	Moderate - High	Short term (impacts only likely to be concentrated outside each property/area for a short length of time)	Low – moderate negative	<p>Preparation of a CTMP which identifies measures to minimize traffic delays where possible.</p> <p>Preparation of a Construction Noise and Vibration Plan which identifies measures to minimize construction noise where possible</p> <p>Clear communications to the community about upcoming construction periods so that they have time to plan ahead.</p>	Low negative
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Operation Phase

Way of life	RTC and RAMC will facilitate easier movement around the North West, allowing people to go about their daily routines more easily (both through the provision of additional transport options, and the likely reduction in traffic congestion as a result of people moving from cars to public and active transport modes.	People in both the wider and local community moving around the North West	Positive	High	High	Sustained	High positive	N/A	N/A
	Provision of the Kumeū and Huapai Rapid Transit Stations will allow people to more easily access work, employment, goods and services in both town centres.	People in both the wider and local community moving around the North West	Positive	High	High	Sustained	High positive	N/A	N/A
	Reduction in available land at Huapai Domain (designation envelope covers a section of the Domain which includes parts of football fields, tennis courts, club rooms and carparks) will mean less space for organized and informal recreation at the Domain, which is currently very well used.	Users of Huapai Domain from both the wider and local communities. Kumeū Cricket Club West Coast Rangers Football Club	Negative	High	High	Sustained	High negative	At the time this SIA was prepared discussions were underway with Auckland Council around appropriate mitigation for Huapai Domain - such as a reconfiguration of facilities at the Domain to allow activities to continue. In addition to these ongoing conversations it is recommended that the West Coast Rangers and Kumeū Cricket Clubs are consulted to understand their needs with regards to the Domain and how these can be incorporated into the design of the preferred solution.	Low negative
Community cohesion	Additional transport choices and reduced congestion will make it easier for people to move through the area to	People in both the wider and local community moving around	Positive	High	High	Sustained	High positive	N/A	N/A

	connect with family and friends and access community services / facilities	the North West (particularly those who cannot or do not drive)								
	Loss of available space at Huapai Domain could reduce the ability for the community to connect through organized and informal sport. In particular, removal of the existing clubroom facility (which is within the designation envelope) would mean the loss of an informal community hub for sports clubs and community events.	Users of Huapai Domain from both the wider and local communities. Kumeū Cricket Club West Coast Rangers Football Club	Negative	High		High	Sustained	High negative	At the time this SIA was prepared discussions were underway with Auckland Council around appropriate mitigation for Huapai Domain - such as a reconfiguration of facilities at the Domain to allow activities to continue. In addition to these ongoing conversations it is recommended that the West Coast Rangers and Kumeū Cricket Clubs are consulted to understand their needs with regards to the Domain and how these can be incorporated into the design of the preferred solution.	Low negative
	The RTC/RAMC could create a sense of severance between parts of the rural community on either side of the corridor	People in the local community in the rural areas along the corridor	Negative	Low		Moderate	Sustained	Low negative	Provision of information about the project well in advance of acquisition could help the community to understand and mentally prepare for any changes in their community	Very low – low negative
	Huapai Tavern is within the designation envelope and will need to be removed – this could impact people’s ability to connect with others in the community if this well-used informal community hub is removed.	People in the wider and local community who regularly use Huapai Tavern for connecting with family and friends	Negative	Low		Moderate	Sustained	Low negative	It is understood that Huapai Tavern will be relocated closer to the proposed Kumeū Station location and will therefore still be able to be used by the community.	Negligible – very low negative
Fears and aspirations	RTC and RAMC will help to realise the community’s aspirations around making it easier to get around the	People in the wider and local community who have aspirations	Positive	Moderate		Moderate	Sustained	Moderate positive	N/A	N/A

	region, and improving the streetscape in Kumeū – Huapai town centre.	for the Kumeū – Huapai area.								
Health and wellbeing	Provision of walking and cycling facilities will make it easier for people to incorporate exercise into their daily activities	Pedestrians and cyclists in both the wider and local community	Positive	Moderate		High	Sustained	Moderate positive	N/A	N/A
	Loss of available space at Huapai Domain could result in fewer opportunities for people to exercise through both formal and informal recreation.	Users of Huapai Domain from both the wider and local communities. Kumeū Cricket Club West Coast Rangers Football Club	Negative	High		High	Sustained	High negative	At the time this SIA was prepared discussions were underway with Auckland Council around appropriate mitigation for Huapai Domain - such as a reconfiguration of facilities at the Domain to allow activities to continue. In addition to these ongoing conversations it is recommended that the West Coast Rangers and Kumeū Cricket Clubs are consulted to understand their needs with regards to the Domain and how these can be incorporated into the design of the preferred solution.	Low negative
Quality of environment	Reduction in traffic congestion and creation of a safer, more pedestrian friendly streetscape (alongside the Main Road upgrades) may improve the quality of environment / amenity of the Kumeū and Huapai town centres.	People in both the wider and local community who spend time in Kumeū and Huapai town centres.	Positive	Moderate		Moderate	Sustained	Moderate positive	N/A	N/A
	For those in the rural parts of the local community, the RTC corridor will alter some peoples' outlook from a quiet rural area to views of a major transport corridor – this could impact some people's perception of the amenity and quality of the surrounding environment.	People in the rural parts of the local community with views over the corridor	Negative	Low		High	Sustained	Low negative	Visual screening (i.e. through landscaping) could minimize adverse impacts on people's outlook.	

Potential for traffic congestion at peak times around Huapai Rapid Transit Station and the 500 car park and ride could adversely impact quality of environment for people living in close proximity to the station.	People in the local community living in close proximity to Huapai Rapid Transit Station	Negative	Low	Low - moderate	Sustained	Low negative	Traffic Management Plan should include consideration of whether traffic flows to/from Huapai Rapid Transit Station need to be managed	Very low negative.
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3.5 NoR S4 (Access Road Upgrade)

This table should be read alongside section 7.6 of the SIA. In the original SIA, a high level write-up of Access Road was provided (this was deemed appropriate (as opposed to a more detailed impact assessment table) given the small scale of the Access Road NoR compared to the other, larger NoRs assessed in the rest of the SIA). The write-up discussed potential impacts, but did not give a specific impact rating for each one. The table below provides impact ratings for the impacts identified in the SIA.

Impact category	Impact	Who	Nature of effect	Scale	Likelihood	Duration	Impact rating without mitigation	Recommended mitigation	Impact rating with mitigation
Route Protection Phase									
Health and wellbeing	Uncertainty for landowners and businesses within designation envelope (re when acquisition will be occurring and how it will impact them) could cause stress and anxiety	Landowners and businesses in the local community who are within the designation envelope	Negative	Moderate	Moderate	Medium - Sustained	Moderate negative	<p>The designation itself may alleviate some anxiety and will provide landowners and business owners some ability to plan for the future, as the extent of the project and its impacts will be known (noting that there will still be some uncertainty around timing and funding).</p> <p>Provision of accurate, up to date information about property acquisition and what to expect during route protection phase and beyond.</p> <p>Dedicated phone number for concerns and queries during the route protection phase.</p>	Low negative
Construction Phase									

Way of life	Construction noise and vibration could cause people to temporarily change their daily routines to avoid noise (i.e. avoiding working from home or spending less time in the garden)	People in the local community within close proximity to the designation corridor	Negative	Low - moderate	Moderate	Short term	Low negative	Construction Management Plan should set out measures to manage and minimize construction noise where practicable.	Very low negative
								Clear communication about the upcoming construction period should be provided to local residents so that they are mentally prepared for the works and have a chance to ask questions about the construction period.	
	Construction traffic, delays and diversions could make it more difficult for people to move through the area for their daily needs, particularly to access businesses and services along Access Road such as Kumeū Showgrounds, Kumeū Community Centre and the Kumeū Industrial area.	People in the wider and local community who regularly travel along Access Road or travel to and from services/businesses on Access Road	Negative	Moderate (noting there is an industrial complex off Access Road and several community facilities such as the Community Centre and Showgrounds)	High	Medium	Moderate negative	Preparation of a CTMP which identifies measures to minimize traffic delays where possible.	Low negative
								Where possible, construction timeline should take into account (and avoid) any major events at the Showgrounds)	
								Clear communications to the community about upcoming construction periods so that they have time to plan ahead.	
								Dedicated 24/7 complaints and queries phone line for people to ask questions and raise concerns.	
	Potential for activities at the Kumeū Community Centre to be temporarily paused if construction blocks access to the Centre, is too noisy for classes to occur in the Centre or removes access to carparking	Kumeū Community Centre	Negative	High	Moderate	Short – medium term	Moderate - high negative	Construction Management Plan which outlines measures to minimize disruption where possible.	Low – moderate negative
		People from the wider and local community who							

		attend events/activities at Kumeū Community Centre						Clear communications with the Community Centre in advance of the construction works so that they can plan ahead for any disruption.	
Community cohesion	If Kumeū Community Centre is temporarily unusable during construction, people could lose opportunities to connect with others through events and regular classes/sports activities at the Centre	People from the wider and local community who attend events/activities at Kumeū Community Centre	Negative	Moderate	Moderate	Short – medium term	Moderate negative	Construction Management Plan which outlines measures to minimize disruption where possible.	Low – moderate negative
								Clear communications with the Community Centre in advance of the construction works so that they can plan ahead for any disruption and minimize the likelihood of classes needing to be cancelled.	
Health and wellbeing	Construction noise and vibration could cause stress and anxiety for some residents in close proximity to the construction works (temporarily) particularly if noise and vibration disrupt activities such as sleeping.	People in the local community living in close proximity to the corridor.	Negative	Moderate	Moderate	Short term	Moderate negative	Construction Management Plan which outlines measures to minimize disruption where possible.	
Quality of environment	Construction noise and vibration could temporarily reduce people’s quality of environment.	People in the local community within close proximity to the designation corridor	Negative	Low - moderate	Moderate	Short term (weeks)	Low negative	Construction Management Plan should set out measures to manage and minimize construction noise where practicable.	Very low negative
								Clear communication about the upcoming construction period should be provided to local residents so that they are mentally prepared for the works and have a chance to ask questions about the construction period.	
Operation Phase									

Way of life	Upgrades will improve connectivity between ASH and SH16, improving the resilience of the overall network and making it easier for people to move around the area to access work, employment, education etc.	People in both the wider and local community who use Access Road to travel through the North West or to access business/services/facilities along Access Road.	Positive	High	High	Sustained	High positive	N/A	N/A
	Removal of carparking from the Kumeū Community Centre may limit some people's ability to access the centre and attend events/activities – particularly the elderly or those with mobility issues	People in both the wider and local community who attend events/activities/meetings at Kumeū Community Centre, particularly those who need to drive or be driven rather than using public or active modes.	Negative	Moderate	High	Sustained	Moderate negative	Explore opportunities to relocate the carparks at the Centre to ensure people who need to drive to the Centre are still able to do so. Prioritise maintaining wheelchair access to the Centre.	Very low negative
Community cohesion	Removal of carparking from the Kumeū Community Centre may limit some people's ability to access the centre – particularly the elderly or those with mobility issues. This could limit some people's opportunities for connecting with others in the community	People in both the wider and local community who attend events/activities/meetings at Kumeū Community Centre, particularly those who need to drive or be driven rather than using public or active modes.	Negative	Moderate	High	Sustained	Moderate negative	Explore opportunities to relocate the carparks at the Centre to ensure people who need to drive to the Centre are still able to do so. Prioritise maintaining wheelchair access to the Centre.	Very low negative
Health and wellbeing	Provision of walking and cycling infrastructure will make it easier for people to incorporate exercise into their daily routines	Pedestrians and cyclists in both the wider and local communities	Positive	Low	High	Sustained	Low-moderate positive	N/A	N/A

4 Additional information on existing environment

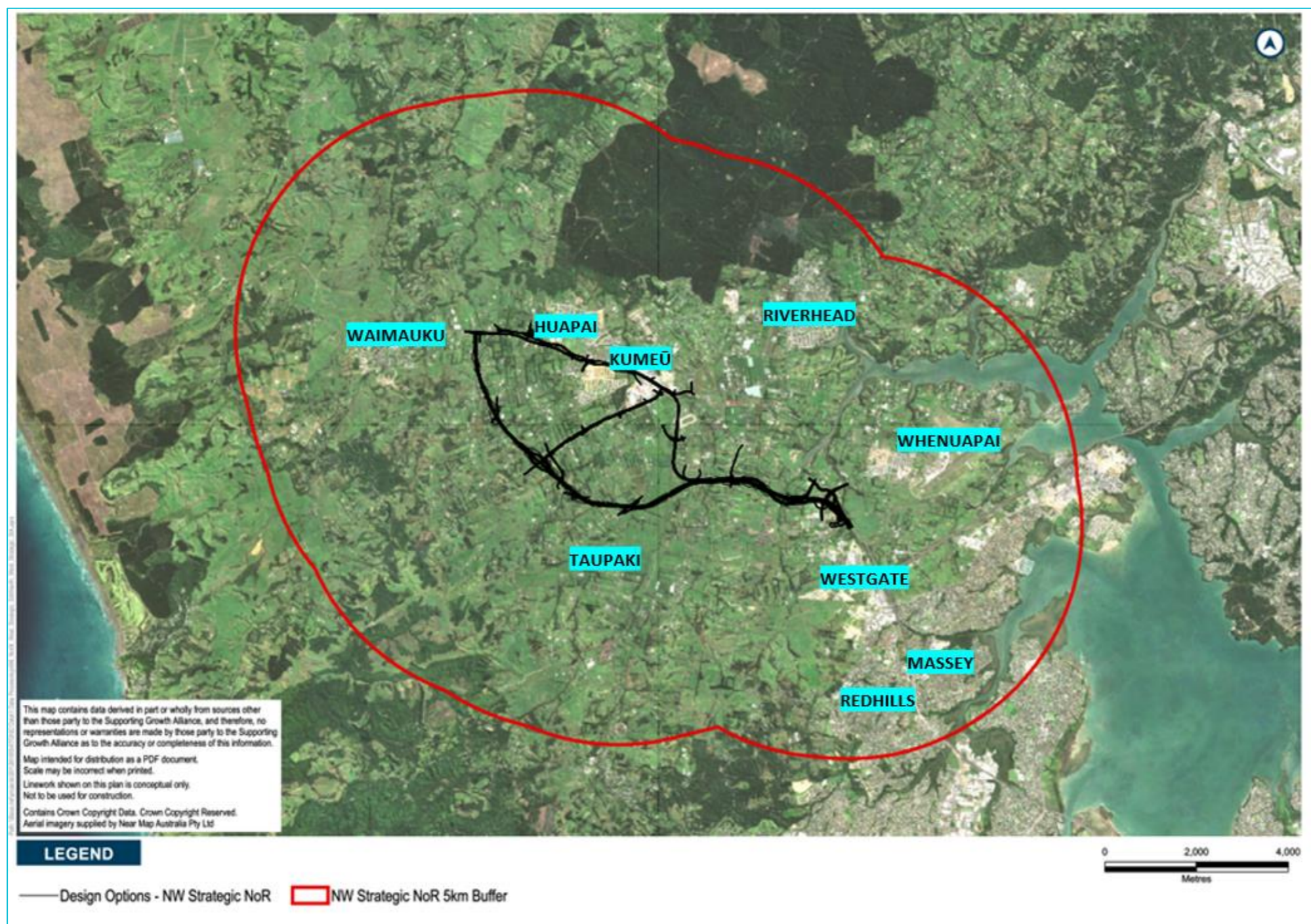
The table below provides additional information on the existing environment as requested for NoRs S1, S2 and S3:

NoR	Additional information requested	Response
NoR S1 - ASH	Extent of the corridor	Approx 11km long (50m wide corridor to accommodate a four-lane dual carriageway and separated walking and cycling infrastructure)
	Description of how rural properties are used	<p>As per table 9.3 of the Assessment of Environmental Effects:</p> <p>The corridor traverses through Rural Countryside Living, Mixed Rural and Rural Production Zones. The Countryside Living zone provides for rural lifestyle activities and is characterised by low-rise large lot residential, agricultural and viticultural land activities.</p> <p>The Auckland Unitary Plan (H19.3.1) states that Rural Production Zones in Auckland's North are characterised by large rural properties, low intensity settlement and an environment less modified by humans than other zones in the north. The Rural Production Zone provides for activities such as forestry, greenhouses and intensive farming.</p> <p>The Auckland Unitary Plan (H19.4.1) states that the Mixed Rural Zone provides for rural production generally on smaller rural sites</p>
NoR S2 – Main Road	Extent of corridor	Approx 4.5km long (between Old Railway Road and Foster Road) – widening the existing 20m wide corridor to 24m wide.
	Description of how rural properties are used	<p>As per table 9.5 of the Assessment of Environmental Effects:</p> <p>The western portion of the Project within rural zoned land is characterised by pastoral and arable fields and rural residential properties. The rural area at the eastern end of Main Road is characterised primarily by viticulture fields.</p>
NoR S3 – RTC and RAMC	Extent of corridor	Approx 9.5km long . The RTC will be approx. 14m wide, increasing to 20m wide where the active mode corridor abuts the corridor.
	Description of how rural properties are used	<p>As per table 9.6 of the Assessment of Environmental Effects:</p> <p>The rural section is characterised by larger plots and agricultural land use, as well as some lifestyle blocks. With the FUZ, most existing land uses are also rural, with land use predominantly for viticulture and agriculture.</p>

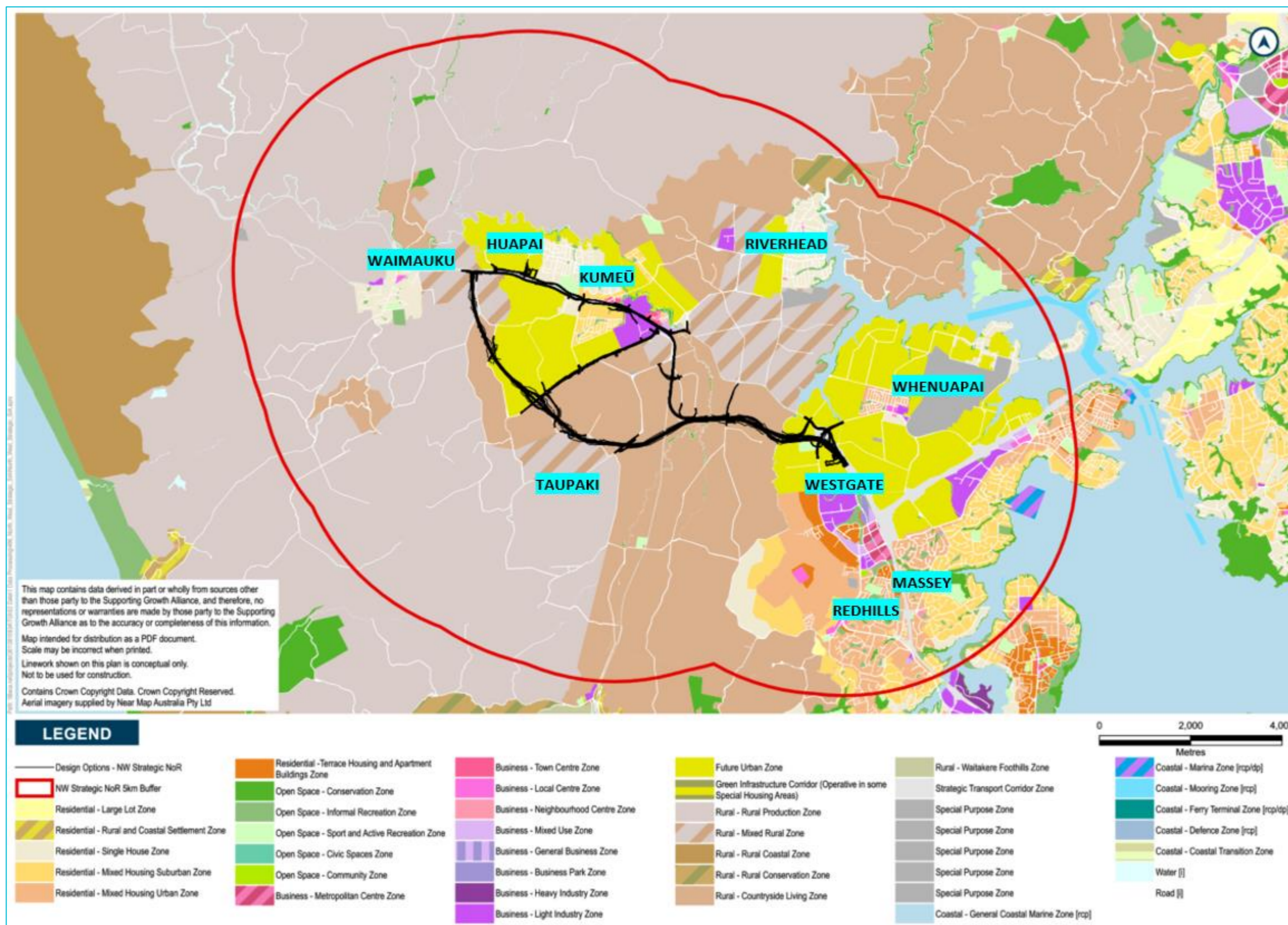
4.1 Updated maps

The review comments included requests to update the maps in the SIA to be more useful to the reader, including adding the names of communities and any other key points of interest.

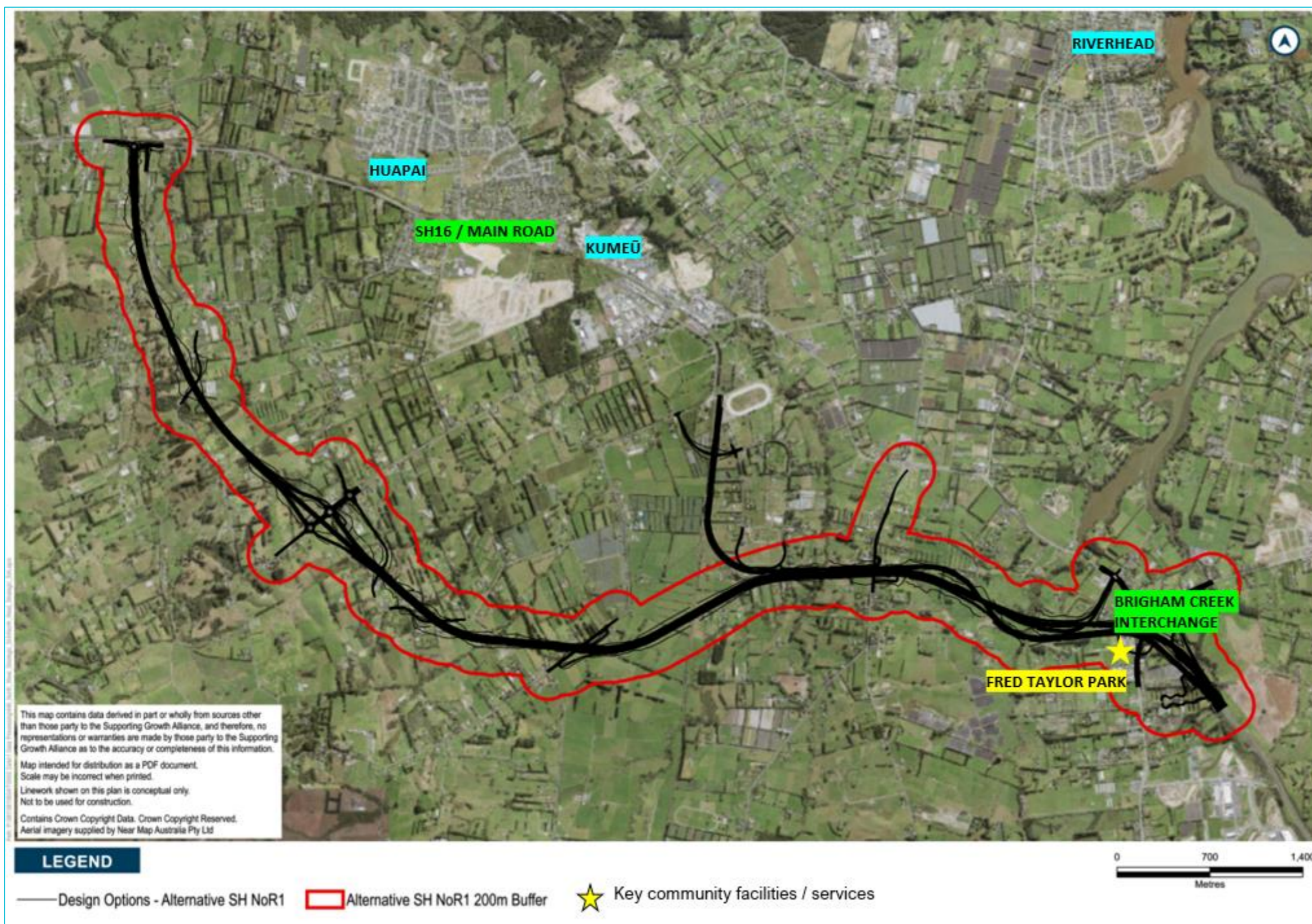
4.1.1 Updated Figure 3.2 – Extent of wider community



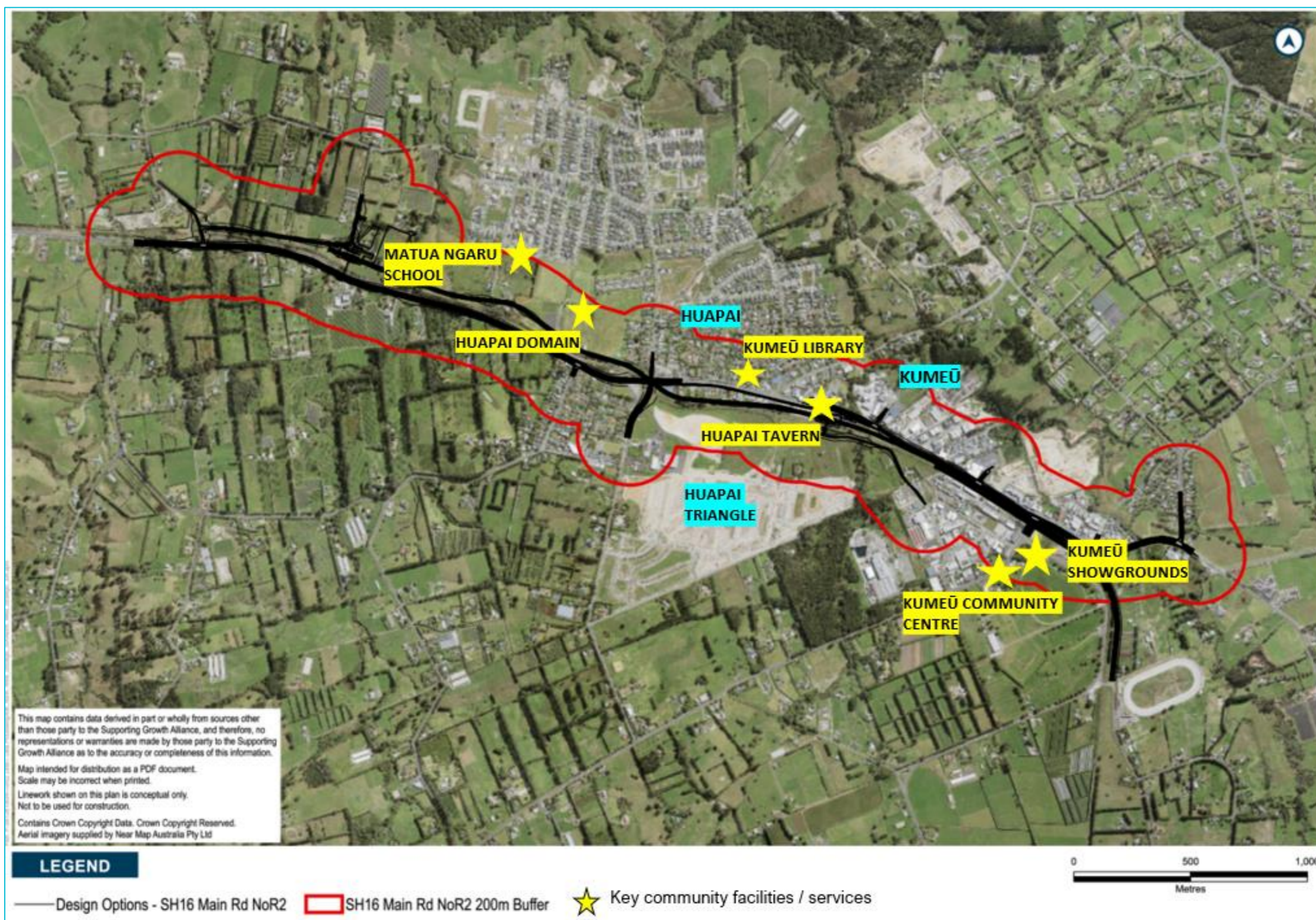
4.1.2 Updated Figure 3.4 – current zoning of wider community



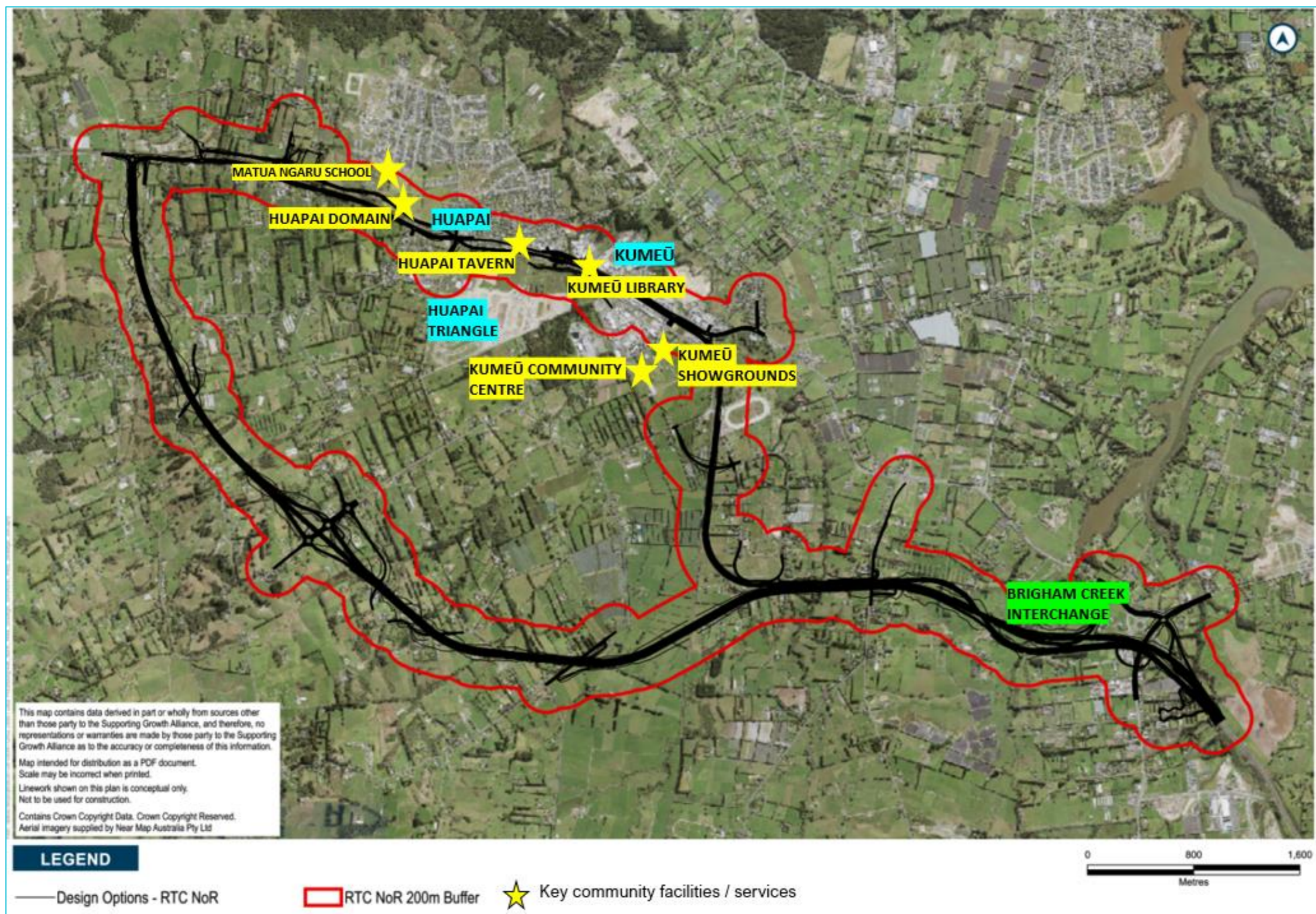
4.1.3 Updated Figure 3.6 – Alternative State Highway local community



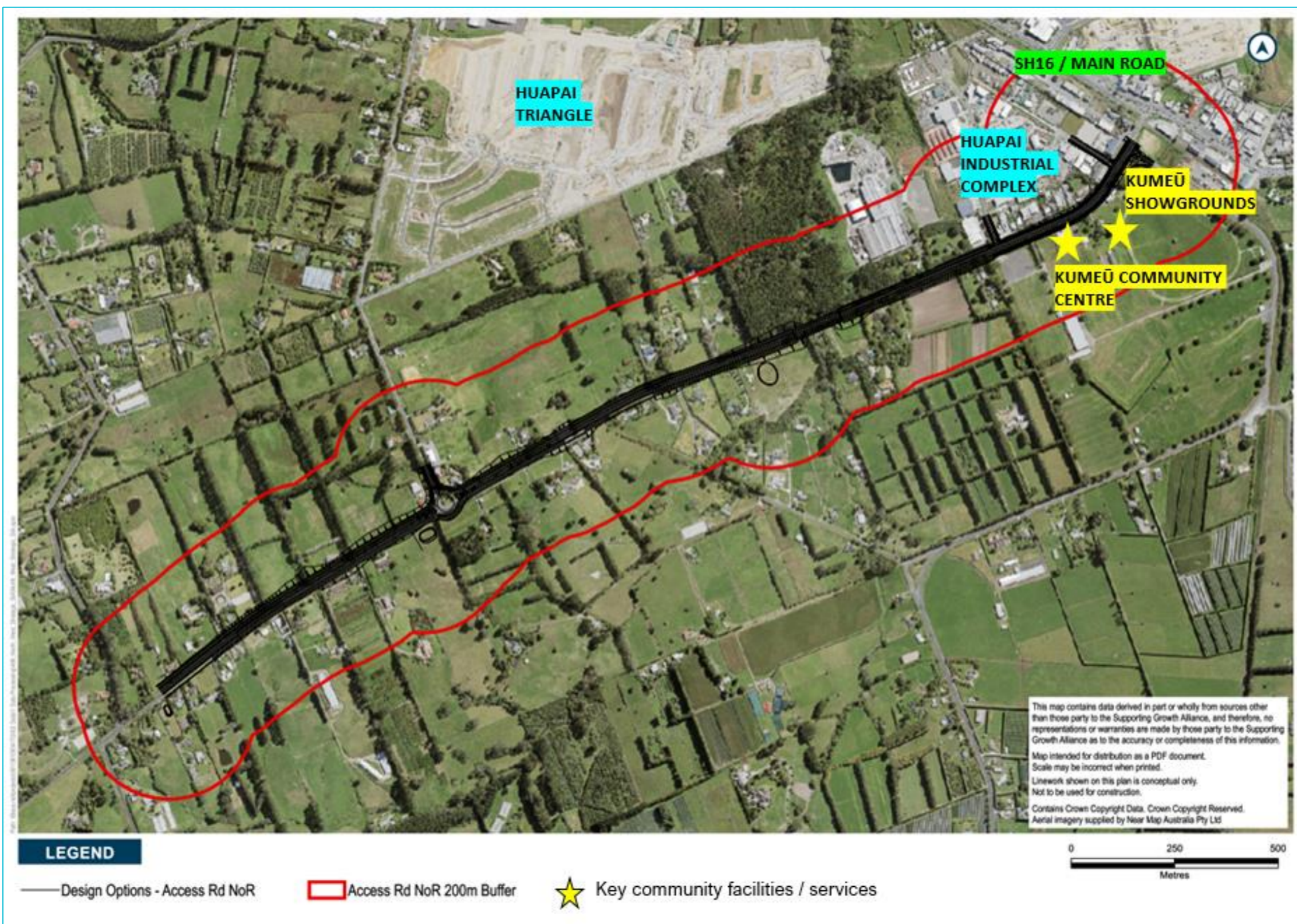
4.1.4 Updated Figure 3.7 – Main Road Upgrade local community



4.1.5 Updated Figure 3.8 – RTC and RAMC local community



4.1.6 Updated Figure 3.9 – Access Road local community



5 Additional demographic analysis

The following table provides additional demographic data about Riverhead (using 2018 Census data), which was unintentionally left out of the demographic analysis in the SIA (section 6 and Appendix B of the SIA):

Census Area	Population	Population change 2013 - 2018	Total private dwellings	Usual residence one year ago	Means of travel to work	Means of travel to education
Riverhead	2802	51.39%	867	Same as usual residence: 75% (NZ average 79%) Elsewhere in New Zealand: 21.3% (NZ average 15.6%) Not born one year ago: 2.2% (NZ average 1.6%) Overseas: 1.4% (NZ average 3.6%)	Private or company vehicle: 81.3% Work from home: 11.7% Bus: 2% Bike: 0.2% Walk or jog: 1.1% Train: 0.4%	Private vehicle: 54.7% Study at home: 6.6% Bus (school or public): 18.5% Bike: 3.3% Walk or jog: 14% Train: 0.8%

Key observations from these demographics are as follows:

- The population of Riverhead has dramatically increased between 2013 and 2018
- The proportion of people who lived elsewhere in NZ prior to the Census year is higher than the New Zealand average, indicating people moving in to the area at above average levels (which aligns with the significant increase in population over this time).
- Public transport use and active transport use are lower than the Auckland average; for example 2% of people in Riverhead commute using a public bus compared to 7% for Auckland. Similarly, 1% of people in Riverhead walk or jog to work compared to 4.3% for Auckland.
- For travel to education, travel by bus is much more common (compared to people travelling to work) however the bulk of these students travel by school bus rather than public bus (14.8%

of students in Riverhead travel to school by school bus, compared to 3.7% who travel by public bus).

- These findings (regarding travel to work and education) largely align with the other Census areas considered as part of this SIA, in that compared to the Auckland average there are lower rates of public transport and active mode use, and higher rates of private vehicle use. Working from home is more common in both Riverhead and other parts of the North West than for the rest of Auckland, noting that these figures are from 2018 and working from home patterns may have changed substantially since then as a result of the Covid-19 pandemic.

5.1 Employment

This section provides additional detail on the key economic / employment sectors in each of the Census areas that make up the wider community.

	% of residents employed full time	% of residents unemployed	Most common occupations	Median income
Auckland average	51.9%	4.1%	1. Professionals (25.9%) 2. Managers (18.1%) 3. Clerical and administrative workers (12.6%)	\$34,400
Riverhead	61.8%	2.3%	1. Professionals (27.4%) 2. Managers (24.6%) 3. Clerical and administrative workers (12.6%)	\$52,000
Kumeū – Rural West	52.9%	1.5%	1. Managers (24.1%) 2. Professionals (20%) 3. Technicians and trade workers (15.3%)	\$38,300
Kumeū – Rural East	51.5%	2.5%	1. Managers (28%) 2. Professionals (17.2%) 3. Clerical and administrative workers (12.4%)	\$35,200
Kumeū - Huapai	62.4%	2.2%	1. Managers (24.8%) 2. Professionals (23.1%) 3. Clerical and administrative workers (14.5%)	\$47,800
Whenuapai	59.3%	3%	1. Professionals (21.6%)	\$43,800

			2. Managers (20.8%) 3. Technicians and trade workers (16%)	
Taupaki	51.5%	2.3%	1. Managers (23.9%) 2. Professionals (21.2%) 3. Technicians and trade workers (15.4%)	\$37,200
Waimauku	56.3%	1.7%	1. Managers (25.6%) 2. Professionals (23.6%) 3. Technicians and trade workers (12.6%)	\$45,400
Waipatukahu	54.1%	3.2%	1. Managers (28.1%) 2. Professionals (19%) 3. Technicians and trade workers (12%)	\$40,500

Key observations from this data are as follows:

- Employment rates are above the Auckland average in all census area units, and are highest in Kumeū - Huapai. Unemployment is lower than the Auckland average across all Census area units; the areas with highest unemployment are Waiapukahu and Whenuapai.
- The most common occupations are similar across most census area units and are similar to the Auckland average, with both managers and professionals being amongst the 3 most common professions across all census units. In 5 of the census area units, technicians and trade workers make up one of the top three most common occupations. In all census areas there was a higher proportion of 'managers' than the Auckland average; this could potentially be a reflection of much of the area being rural and people managing their own farms and lifestyle blocks.
- Median incomes across all census areas are higher than the Auckland average. The more rural parts of the wider community typically have slightly lower incomes (Kumeū Rural East and Rural West, Taupaki, Waipatukahu) compared to the more urban / urbanising areas such as Whenuapai and Riverhead.

6 Integration with other technical assessments

The table below summarises the three technical assessments that are the most relevant in the assessment of social impacts; the Construction Noise and Vibration Assessment, the Operational Noise Report and the Integrated Transport Assessment. For each report, the key findings of relevance to social impacts are listed, and a brief overview is then given of how these findings have been integrated into the Social Impact Assessment.

Technical assessment	Key findings of relevance to social impacts	How this has influenced the report
Construction noise and vibration assessment	<p>NoR S1 (ASH):</p> <ul style="list-style-type: none"> Rural buildings and dwellings are typically located 20-60m from the designation corridor boundary (with some exceptions). Most works will be a sufficient distance from buildings so that most of time, daytime noise criterion (70dB) will be complied with. Construction noise could intermittently be as high as 80dB at those dwellings in closest proximity to the earthworks – but this will be for a limited duration as construction will be staged. Inside the closest dwellings, noise levels could reach 55 to 60 dB which could be high enough to result in some behaviour changes such as avoiding rooms facing the noise source. The construction will be staged so exceedances will be of a limited duration. <p>Mitigation recommended:</p> <ul style="list-style-type: none"> While noise levels will be within daytime criterion most of the time, the Construction Noise and Vibration management plan will set out a management framework to manage intermittent high noise and vibration levels, including monitoring and reporting requirements, a procedure for handling complaints and a procedure for reviewing the CNVMP throughout the works. <hr/> <p>NoR S2 (Main Road):</p> <ul style="list-style-type: none"> Main Road is an existing State Highway corridor so has a higher level of ambient noise than surrounding rural areas Construction could intermittently be as high as 80dB at the closest dwellings when earthworks are occurring in close proximity – but the duration of this would be a matter of hours or (at most) days Inside the closest dwellings, noise levels could reach 55 to 60 dB which could be high enough to result in some behaviour changes such as avoiding rooms facing the noise source. The construction will be staged so exceedances will be of a limited duration. Most works will be a sufficient distance from buildings so that most of time, daytime noise criterion (70dB) will be complied with. <p>Mitigation recommended:</p> <ul style="list-style-type: none"> While noise levels will be within daytime criterion most of the time, the Construction Noise and Vibration management plan will set out a management framework to manage intermittent high noise and vibration levels, including monitoring and reporting requirements, a procedure for handling complaints and a procedure for reviewing the CNVMP throughout the works. <hr/> <p>NoR S3, KS and HS (Rapid Transit Corridor, Active Mode Corridor, Rapid Transit Stations):</p> <ul style="list-style-type: none"> Construction noise could intermittently be as high as 80dB at those dwellings in closest proximity to the earthworks – but this will be for a limited duration as construction will be staged. Inside the closest dwellings, noise levels could reach 55 to 60 dB which could be high enough to result in some behaviour changes such as avoiding rooms facing the noise source. The construction will be staged so exceedances will be of a limited duration. Most works will be a sufficient distance from buildings so that most of time, daytime noise criterion (70dB) will be complied with. 	<ul style="list-style-type: none"> Construction phase impact ratings for each NoR have taken into account the findings of the noise report. The report acknowledges that within the local community for each NoR, construction noise and vibration may temporarily impact: <ul style="list-style-type: none"> The character of the community and quality of the environment (particularly in rural parts of the local community, whereby people may perceive a temporary change from a quiet rural environment to one characterized by higher levels of noise and activity) People's daily routines (i.e. spending more time indoors or less time to avoid construction noise) People's health and wellbeing (if construction noise causes stress and anxiety) Drawing on the findings of the noise report, it is acknowledged in the SIA that these impacts would only be experienced by individual properties close to the designation boundary (i.e. within the 'local community'), for short periods of time due to the linear/staged nature of construction. In addition, the SIA acknowledges that the noise-related impacts listed above may be more significant for those in the rural parts of the community (who are used to a quieter environment) than for those in the urban / urbanizing parts of the community which typically have higher levels of noise and activity. Mitigation measures recommended for each NoR align with those proposed in the noise report. In addition, the SIA recommends that local residents receive clear communications about the timing and nature of construction so that they understand how this is likely to impact them, and what mitigation measures will be in place.

- Station construction noise will occur over a more sustained duration and several buildings are likely to experience noise levels up to 75dB

Mitigation recommended:

While noise levels will be within daytime criterion most of the time, the Construction Noise and Vibration management plan will set out a management framework to manage intermittent high noise and vibration levels, including monitoring and reporting requirements, a procedure for handling complaints and a procedure for reviewing the CNVMP throughout the works.

NoR S4 (Access Road):

- There are a large number of dwellings along Access Road which will be affected by construction noise given their proximity to the designation boundary.
- Predicted noise could be intermittently as high as 80dB at the closest dwellings when there are earthworks in close proximity.
- Inside the closest dwellings, noise levels could reach 55 to 60 dB which could be high enough to result in some behaviour changes such as avoiding rooms facing the noise source. The construction will be staged so exceedances will be of a limited duration.
- Overall, the majority of works for most of the time are predicted to comply with the 70dB daytime noise criterion.

Mitigation recommended:

While noise levels will be within daytime criterion most of the time, the Construction Noise and Vibration management plan will set out a management framework to manage intermittent high noise and vibration levels, including monitoring and reporting requirements, a procedure for handling complaints and a procedure for reviewing the CNVMP throughout the works.

Operational Noise

NoR S1 (Alternative State Highway):

- The introduction of a new major road into a low noise, largely rural environment will result in significant noise level increases for some
- One third of PPFs (generally those adjacent to the new road) will receive noticeable to significant noise level increases, but with mitigation the resultant noise levels will be acceptable for residential use.

Mitigation recommended:

- Installation of 2.4m high roadside boundaries along the ASH

NoR S2 (Main Road):

- The establishment of walking and cycling facilities along Main Road is not anticipated to cause any appreciable change in noise levels
- No mitigation is proposed with this in mind
- Noise levels may *reduce* in the Main Road area as a result of the North West Strategic Package being implemented, as traffic will be redistributed across the area and may reduce along Main Road.

NoR S3, HS and KS (RTC, AMC and Rapid Transit Stations)

- Minimal impacts on the overall noise environment are predicted, given that rapid transit will be co-located with existing transport routes and will only add marginally to the overall noise level of the road.

- Construction phase impact ratings for each NoR have taken into account the findings of the noise report.
- For the ASH, the SIA acknowledges (drawing on the operational noise report) that the addition of a new highway into a largely rural area will change the environment/community character (including through increases in noise levels).
- The SIA does not report any anticipated adverse noise related impacts for NoRs 2, 3 or 4, drawing on the operational noise report's findings that there will not be noticeable increases in noise due to the project.

	<ul style="list-style-type: none"> With regards to the two transit stations, the closest sensitive receivers are at significant distances and therefore it is not anticipated that station noise will have any significant effect on the overall noise environment. <p>Mitigation recommended:</p> <ul style="list-style-type: none"> No specific mitigation is recommended, provided the road is kept maintained in a smooth and even condition. <p>NoR S4 (Access Road):</p> <ul style="list-style-type: none"> With the proposed mitigation (2m boundary fences) in place, only one receiver (a double storey dwelling on Tawa Road) is predicted to receive noise levels above Category B. The noise level along Access Road is anticipated to <i>reduce</i> by an average of 3 dB as a result of the North West Strategic Package being in place. 	
<p>Transport</p>	<p>NoR S1 (ASH):</p> <ul style="list-style-type: none"> During construction there will be some temporary disruption to people’s travel patters – but these will mostly be limited to interfaces with the surrounding network given the bulk of construction will occur offline. Traffic at these interfaces will be able to be appropriately managed through a Construction Traffic Management Plan. Access to three properties along Brigham Creek Road will be temporarily impacted during construction; a temporary access road will be required to maintain access to these properties and this can be provided for through the CTMP process. Once operational, the ASH will provide considerable positive transport effects. Any potential adverse effects on local roads (where these cross the ASH corridor) have been adequately addressed by grade separation and, where necessary, realignment of local roads. Property effects (in relation to access driveways and private access roads) can be specifically considered as part of further design, as well as through the CTMP. 	<p>The SIA has assessed potential impacts bearing in mind the findings of the transport assessment:</p> <ul style="list-style-type: none"> For the ASH, the SIA notes that impacts will be minimized by the fact that construction is largely occurring offline, but also acknowledges that there will be some disruption at key interfaces such as Brigham Road. The SIA also notes that once operational, the ASH will provide positive effects by improving connectivity around the region. In regards to mitigation, the SIA recommends (as per the transport assessment) that a CTMP is prepared which identifies and sets out mitigation and management measures for any identified impacts.
	<p>NoR S2 (Main Road):</p> <ul style="list-style-type: none"> During construction, temporary disruption to travel patterns will be inevitable given that Main Road is currently a significant transport corridor. The proposed staged construction methodology will mean that the entire corridor is not impacted at the same time, but will still result in reduced vehicle speeds and potentially reduced capacity at intersections. Once operational, the upgrades will provide considerable positive transport effects. Property effects (in relation to access driveways and private access roads) can be specifically considered as part of further design, as well as through the CTMP. <p>Recommended mitigation:</p> <ul style="list-style-type: none"> Maintaining two-way traffic with a minimum of one lane in each direction along the corridor will be ‘essential’ to minimize adverse effects during construction. Outside of busier periods (i.e. overnight) there would be potential for one-way operation such as stop-go signs for certain construction activities. Temporary effects on the surrounding network could be appropriately managed through a CTMP which outlines these measures. Impacts would be substantially reduced if the ASH was provided before works on Main Road began, as this would provide an alternative route for traffic to travel through Kumeū and Huapai. 	<p>The SIA has assessed potential impacts bearing in mind the findings of the transport assessment:</p> <ul style="list-style-type: none"> It is acknowledged that SH16 is a major transport corridor and that without mitigation, there could be significant impacts on people’s way of life if it becomes more difficult for people to move through the area during the construction period. These impacts are noted as likely being more significant for the local community who use Main Road more frequently. Drawing on the transport assessment, the SIA notes that any temporary road closures that do not allow two-way traffic would be particularly disruptive. In regards to mitigation, the SIA identifies the need for a CTMP which will outline any mitigation and management processes that will be put in place; in addition the SIA recommends that the community should be kept informed of these plans well in advance so that they can plan ahead for any disruption. Drawing on the transport assessment, the SIA acknowledges property access as a potential temporary construction impact and recommends that temporary access is provided wherever existing accessways are blocked by construction works. Once operational, the SIA notes that there will be positive impacts in terms of transport, as people will be able to move through and around the area more easily.
	<p>NoR S3, HS, KS (RTC, AMC, Rapid Transit Stations):</p> <ul style="list-style-type: none"> During construction, temporary disruption to typical travel patterns will be inevitable given the scale of the project. However the predominantly offline construction of the RTC/RAMC means that adverse effects will largely be limited to identified interfaces with the surrounding network, where they can be appropriately managed through a CTMP. Once operational, the upgrades will provide considerable positive transport effects. 	<p>The SIA has assessed potential impacts bearing in mind the findings of the transport assessment:</p> <ul style="list-style-type: none"> The SIA notes that impacts will be minimized by the fact that construction is largely occurring offline, but also acknowledges that there will be some disruption at key interfaces which could make it temporarily more difficult for people to move around the area.

- Property effects (in relation to access driveways and private access roads) can be specifically considered as part of further design, as well as through the CTMP.

Recommended mitigation:

- Impacts on access to the Huapai Domain and Kumeū Fire Station can be addressed by viable mitigation solutions with the agreement of FENZ and Auckland Council parks
- Maintaining two-way traffic with a minimum of one lane in each direction along the corridor will appropriately minimize adverse effects during construction. Outside of busier periods (i.e. overnight) there would be potential for one-way operation such as stop-go signs for certain construction activities. Temporary effects on the surrounding network could be appropriately managed through a CTMP which outlines these measures.

NoR S4 (Access Road):

- Once operational, the upgrades will provide considerable positive transport effects.
- Property effects (in relation to access driveways and private access roads) can be specifically considered as part of further design, as well as through the CTMP.
- During construction, temporary disruption to typical travel patterns will be inevitable. However it is considered that adverse effects can be appropriately managed through a CTMP.

Recommended mitigation:

- Adverse effects on the Kumeū Community Centre and Showgrounds can be addressed by developing viable mitigation solutions with the agreement of the Showgrounds and Community Centre.

- The SIA notes (as acknowledged in the transport assessment) that Huapai Domain may be temporarily impacted if construction limits access to the domain for park users.
- The SIA also notes that once operational, the RTC and AMC will provide positive effects by improving connectivity around the region.
- In regards to mitigation, the SIA recommends (as per the transport assessment) that a CTMP is prepared which identifies and sets out mitigation and management measures for any identified impacts.

The SIA has assessed potential impacts bearing in mind the findings of the transport assessment:

- The SIA notes that during the construction phase, there will be disruption to the way people are able to move around the area. In particular, access impacts for Kumeū Community Centre and Kumeū Showgrounds are noted as having the potential to impact operations at each of these facilities.
- The SIA notes (as acknowledged in the transport assessment) that Huapai Domain may be temporarily impacted if construction limits access to the domain for park users.
- The SIA also notes that once operational, the RTC and AMC will provide positive effects by improving connectivity around the region.

In regards to mitigation, the SIA recommends (as per the transport assessment) that a CTMP is prepared which identifies and sets out mitigation and management measures for any identified impacts, and also recommends that mitigation options take into account the schedules and needs of the Community Centre and Showgrounds, to minimize impacts on these facilities where possible.

7 Summary of engagement

The SIA has been informed by a series of interviews undertaken by the authors of this report (the social research team), and engagement carried out by the communications & engagement team Te Tupu Ngātahi. Engagement is summarised in the Assessment of Environmental Effects and the 2021 Te Tupu Ngātahi Engagement Summary Report. A summary of engagement is included below:

7.1 Te Tupu Ngātahi engagement

The following parties have been engaged with by Te Tupu Ngātahi between 2021 and 2022:

- Landowners ((engaged through letters, drop-in sessions, one-on-one meetings, Social Pinpoint, feedback forms, phone calls and emails)
- Mana whenua (Ngāi Tai ki Tāmaki, Ngā Maunga Whakahii o Kaipara, Ngāti Manuhiri, Ngāti Maru, Ngāti Te Ata, Te Ākitai Waiohua, Te Kawerau ā Maki, Ngāti Paoa Trust Board, Ngāti Whanaunga)
- KiwiRail
- Auckland Council (including the Parks and Plans and Places teams)
- Elected Members and Local Boards (Upper Harbour Local Board, Rodney Local Board, Henderson and Massey Local Board)
- Ministry of Education
- New Zealand Defence Force
- Kāinga Ora
- Fire and Emergency New Zealand
- New Zealand Automobile Association
- Watercare Services Ltd
- Utility owners (Transpower, Vector, First Gas, Spark)
- Atlas Concrete
- Better Transport Incorporated
- Developers (Oyster Capital, Cabra Development Ltd, Liberty Property Trustees, Hugh Green Group, Woolworths New Zealand, Roscrea No 2 Trustee Limited, Neil Group)
- Future-Kumeū

Findings from this engagement are summarised more thoroughly in the Assessment of Environmental Effects and Engagement Summary Report, however key themes are highlighted below:

- Most stakeholders were keen to see solutions that would reduce traffic congestion and make it easier to get around the area. SH16 is seen as a particular problem by many people given it is often very congested.
- There is support for public and active transport solutions (in addition to road upgrades) to make it easier for people to get around on foot or using public transport
- There is support for public and active transport solutions (in addition to road upgrades) to make it easier for people to get around on foot or using public transport
- Landowners were typically supportive of the projects and were supportive of solutions to reduce traffic congestion and make public and active modes more accessible for people. People are keen to see better options for commuting to and from the city centre, and safer connections around the community (i.e. to and from schools).
- Separated walking and cycling facilities were supported by landowners for safety reasons

- The main concerns expressed by the public were around certainty and timing of the projects. Firstly, people are keen to see traffic congestion in the area reduced as soon as possible, and some people were concerned that solutions would not be delivered for years. Secondly, some members of the public feel frustrated about a lack of certainty over when and where transport projects in the area will be occurring, particularly where their property is potentially affected and there is uncertainty around how the projects will affect their property value and/or property access.
- Other concerns raised by some landowners included:
 - Loss of amenity and rural character (people do not want to live next to a busy motorway)
 - Acquisition potentially disrupting people's plans for their future (i.e. people who were planning on retiring in their current home but are now unsure whether they will be able to remain)
 - Traffic and noise disruption during construction
 - Some scepticism around people using cycleways as there are low rates of walking and cycling currently.
 - Flooding effects within Kumeu Huapai
- Business owners were typically supportive of the projects (noting that they will help to provide for anticipated growth in the area and reduce traffic congestion) but were keen for effects on their operations to be minimised. Some business owners were also keen for the ASH to be accelerated. Some business and property owners have expressed a concern that Main Road business owners could lose money during the route protection phase if there is uncertainty around the future of Main Road, as well as experiencing general stress and anxiety about the future of their businesses.

7.2 Engagement led by the social research team

The social research team interviewed a number of additional stakeholders and community facility owners to understand potential impacts on these groups. A large number of parties had already been engaged by Te Tupu Ngātahi (see section 6.1) and it was additionally noted that large parts of the wider community are anticipated to undergo significant change in future. As such, the social research team focused on interviewing important community facilities which were anticipated to remain within the community in the coming decades.

The social research team interviewed:

- West Coast Rangers Football Club
- Kumeū Showgrounds
- Kumeū Community Centre
- Matua Ngāru School
- Kumeū Cricket Club (noting this interview was run by members of the Te Tupu Ngātahi project team rather than the social research team, but questions were provided by the social research team).

High level findings from each interview are summarised below:

Interview	Findings
Kumeū Cricket Club	<ul style="list-style-type: none"> • Club is located in Huapai Domain and has been running since the 1950s • The club serves a wide catchment with people coming from all over West Auckland • The Club mostly uses the Domain over summer – in summer the club operates most nights for trainings, and for games on weekends.

	<ul style="list-style-type: none"> • The clubrooms are used by the Club and also rented out to community groups. There are plans to extend the building, improve the changing rooms and/or provide a multisport indoor facility at the domain. • Club are not supportive of the projects impacting the Domain as this would impact their operations. The clubrooms have been around for a long time and are important / of heritage value to the community, so even if a new building was provided there would still be impacts on people.
Kumeū Community Centre	<ul style="list-style-type: none"> • The Community Centre is located on Access Road and was opened in 1981. Consists of one 'small' hall with a kitchen and one larger hall suitable for indoor sports, as well as a smaller meeting room used by the Lions Club. • Well used by the community – in use 4-5 nights per week and booked up on the weekends well in advance. Most events have between 40-100 people at them. • Range of events offered at the Centre – parties, meetings, line dancing, church, indoor netball, Lions Club etc. • No plans to physically expand the facilities but would like to grow the number of events at the Centre and the number of people attending events. • Vehicle access to the centre, and the carpark out the front, are important – lots of people attending events are elderly and need to drive or be driven. • In terms of project impacts – designation would remove two rows of carparks which might result in some events not going ahead at all if there is not enough parking for everyone. There is a lack of other large community halls in the area so if the Centre couldn't be used it would be a big loss to the whole community. • In terms of mitigation – would like their carparks provided elsewhere (i.e at the side or back of the Centre) and some noise barriers installed as the road will be closer to the Centre once the upgrades have occurred. • Can see the benefits of the wider package of upgrades but not sure that it would positively impact the Centre much – most people drive there and think it's unlikely that people will switch to public transport, walking or cycling.
Kumeū Showgrounds	<ul style="list-style-type: none"> • Located on Access Road – 34 hectare site used for a wide range of events: Kumeū Show, Folk Festival, Hot Rod Show, monthly farmers markets, fireworks displays etc. • Very well used community resource – people come from all over Auckland for events and often stay in the area (or stay on the site in campervans) when they are here. There is no comparable facility in Auckland and with ASB Showgrounds being uncertain over its future, it is likely that Kumeū Showgrounds will host even more events in future. • Traffic congestion is a problem all the time, but especially when there are big events on. Getting to the point where it is potentially deterring people from coming to events at the Showgrounds

	<ul style="list-style-type: none"> • Supportive of the projects reducing traffic congestion and making it easier for people to get to and from Kumeū. Some concerns about access during construction – if congestion is already an issue, any disruption from construction could make it even harder for people to get to and from events. • Biggest concern is about the loss of parking (designation envelope covers part of the existing gravel carpark) – the carpark is always at capacity for events so they wouldn't be able to function with a reduced number of carparks, but have limited space to extend the carpark (extending it into the paddocks would mean less space for livestock and shows).
Matua Ngaru School	<ul style="list-style-type: none"> • Primary and intermediate school which opened in 2019 and shares a boundary with Huapai Domain • Primarily serves the new subdivisions in Kumeū, with very few students being from the 'rural' parts of the community. • Anticipating to grow from 413 students to 1000 over the coming years • Supportive of a solution to traffic congestion – but would like to see this now rather than in the future. • Not confident that the RTN would change how students get to school – for most parents it would still be quicker to drop kids on their drive to work rather than walk them to the station and then start their own commute • Huapai Domain is well used by the school for sports and tournaments. If the school needs to add extra buildings to deal with roll growth, they may have to use the Domain for break space for the students
West Coast Rangers Football Club	<ul style="list-style-type: none"> • Newly formed football club which formed as part of a merger between Waitakere City and Nor West United clubs. Operates out of both Huapai Domain and Fred Taylor Park. • 5th largest club in Auckland – 1400 members and currently seeing 'exponential' growth • Currently working with Cricket Club to privately fund a new clubhouse and better changing rooms at Huapai Domain – at Fred Taylor Park they would like to add floodlights and tiger turf • Supportive of the projects but unsure people would use public or active transport to get to games – think cars will remain popular. • Not too concerned about the existing clubhouse being impacted by the designation given how far away the projects are – even if they built a clubhouse now and construction on the RTN started in 20 years, they would still get 15 years of use out of the new facility.

ATTACHMENT 11

**SUPPORTING GROWTH ALLIANCE
NORTH-WEST SECTION 92
NOISE VIBRATION MEMO**

Memorandum

To:	Auckland Council
From:	Supporting Growth (Siiri Wilkening, Claire Drewery SGA Noise Specialists)
Date:	06 March 2023
Subject:	Section 92: Request for further information (Operational Noise Matters)

The following Operational Noise Assessment information has been provided in response to requests for further information from Auckland Council's noise specialist. More information has been requested in regard to following matters.

- Noise effects on future receiving environment / Future Urban Zone
- Health effects that might be experienced as a result of noise levels
- Annoyance effects

Noise effects on future receiving environment / Future Urban Zone

Areas identified for future development such as the FUZ will need to be integrated with the transportation network developed by Te Tupu Ngātahi. There is no certainty about what such development will look like. Structure plans, where available, give a general indication of future uses; however, the final form, location and sensitivity of the future receivers is not known. For these reasons, the noise level contours provided with the traffic noise reports can be used by future developers to gain an understanding of the treatment that noise sensitive activities may require in order to provide a suitable internal noise environment. Table 1 gives an indication which acoustic treatment may be included should noise sensitive activities be established within certain traffic noise levels.

Table 1 Noise Levels and possible treatment of new sensitive activities

Noise level range (dB $L_{Aeq(24h)}$)	Possible treatment of new sensitive activities (to achieve an internal noise level of 40 dB $L_{Aeq(24h)}$)
<55	No specific treatment is required. An internal noise level of 40 dB $L_{Aeq(24h)}$ can be achieved with windows open for ventilation
55 – 60	Windows may need to be closed at times. Therefore, alternative ventilation and a means of cooling may be required. Sensitive activities could be designed to face away from the road, e.g. having garages, bathrooms and hallways face the road.
60 – 65	Windows will need to be closed to achieve 40 dB $L_{Aeq(24h)}$ inside. Alternative ventilation and a means of cooling are required. Sensitive activities could be designed to face away from the road, e.g. having garages, bathrooms and hallways face the road. Less sensitive activities could be placed in these levels, e.g. shops, offices or similar.

Noise level range (dB LAeq(24h))	Possible treatment of new sensitive activities (to achieve an internal noise level of 40 dB LAeq(24h))
65 – 70	Not generally suited for noise sensitive use unless significant mitigation is included in the building envelope (e.g. heavy façade materials, non-openable windows, laminated double glazing etc). Less or non-noise sensitive uses are better suited for this environment. Buildings fronting the road could be used for shielding sensitive uses, e.g. a row of shops shielding dwellings behind.
>70	Not suited for noise sensitive uses.

Health effects that might be experienced as a result of noise levels

Our assessment of effects on people is generally quantitative, relating to the noise level received in the future, the change in noise level experienced due to the Project and the number of people potentially highly annoyed by ongoing long term traffic noise. There are also several qualitative aspects that affect how people perceive the acoustic effects of a Project.

The World Health Organisation has identified that noise levels above 50 dB LAeq may cause adverse health effects. Exposures to high noise levels can result in a reduction in sleep quality, awakenings, annoyance, lack of concentration, which in turn can lead to an impact on people's health. This means that as levels increase further, more focus is applied to management, mitigation and landuse planning to reduce effects.

We consider that the 50 dB LAeq threshold is not an appropriate noise limit in the context of the Project assessed but provides an indication of overall effects in addition to the quantitative assessment undertaken. Most PPFs currently experience similar or higher noise levels from existing roads, and the Projects enable the design and implementation of mitigation.

Based on the above, most of the Projects provide for low noise road surface either as part of the project or as a mitigation option. In addition, it is recommended that the noise contours identified through our assessment:

- A. Be appended to the conditions of the designation for information purposes to assist developers of adjacent land; and
- B. If possible be uploaded to the Auckland Council GIS/AUP:OP viewer so that this data is publicly available to both land developers and potential home buyers.

We consider that the availability of the noise contours will assist in future land use integration with road infrastructure by informing future development of likely noise levels.

Future urban development (of which the Project will be a component of) will result in a change in noise environment especially where the Project constitutes a New Road in accordance with NZS 6806. Where a new noise source is introduced into an area that is currently not (or only little) affected by continuous man-made noise sources such as traffic, effects may be more pronounced. While the

noise levels can generally be reduced to a reasonable level with the mitigation proposed, the change in character will be clearly noticeable and may cause annoyance to people in the area. In addition, noise levels will increase above existing levels. However, where the area surrounding these Projects is earmarked for development (e.g. FUZ or structure plans), existing noise levels may not accurately represent the future situation when the road will be built. Future residents may have different expectations as they will move into a different environment.

Nevertheless, future uses in the FUZ or similar development area must take account of the traffic noise levels and manage them appropriately. Noise contour maps and a table showing relevant responses to traffic noise levels that can be used by developers when planning their development are included in Appendix 1.

Another aspect of people's reaction to a Project relates to habituation, i.e. "getting used to" the change and level in noise environment. This occurs over time. Any change in environment due to the introduction of a new road or moving of a road source from one location to another, may cause initial disturbance to people. However, over time, people become accustomed to the sound (both level and location), pay less attention to it and the response will diminish.

Annoyance effects

Annoyance can be caused by several aspects of a project, e.g. the change in the character or level of noise, potential loss of quiet, people's perception of a project, and people's ability to give feedback and influence a project, amongst others. Annoyance Assessment Graphs are included in Appendix 2 for each Notice of Requirement (except NoR 2a Redhills – East-West Arterial – Dunlop Road where there are no PPFs). The graphs show two aspects of the annoyance assessment:

- the number of PPFs in each narrow noise band, and
- the number of people potentially highly annoyed.

Since a higher percentage of people may be highly annoyed at higher noise levels, this may result in more people being annoyed despite a smaller number of PPFs being in the high noise bands. The graphs show the shift of the number of PPFs without and with the Project and the redistribution of number of people highly annoyed.

Appendix 1 Noise Contours Map

Appendix 2 Annoyance Assessment Graphs

Figure 1 NOR W1 Trig Road (North)

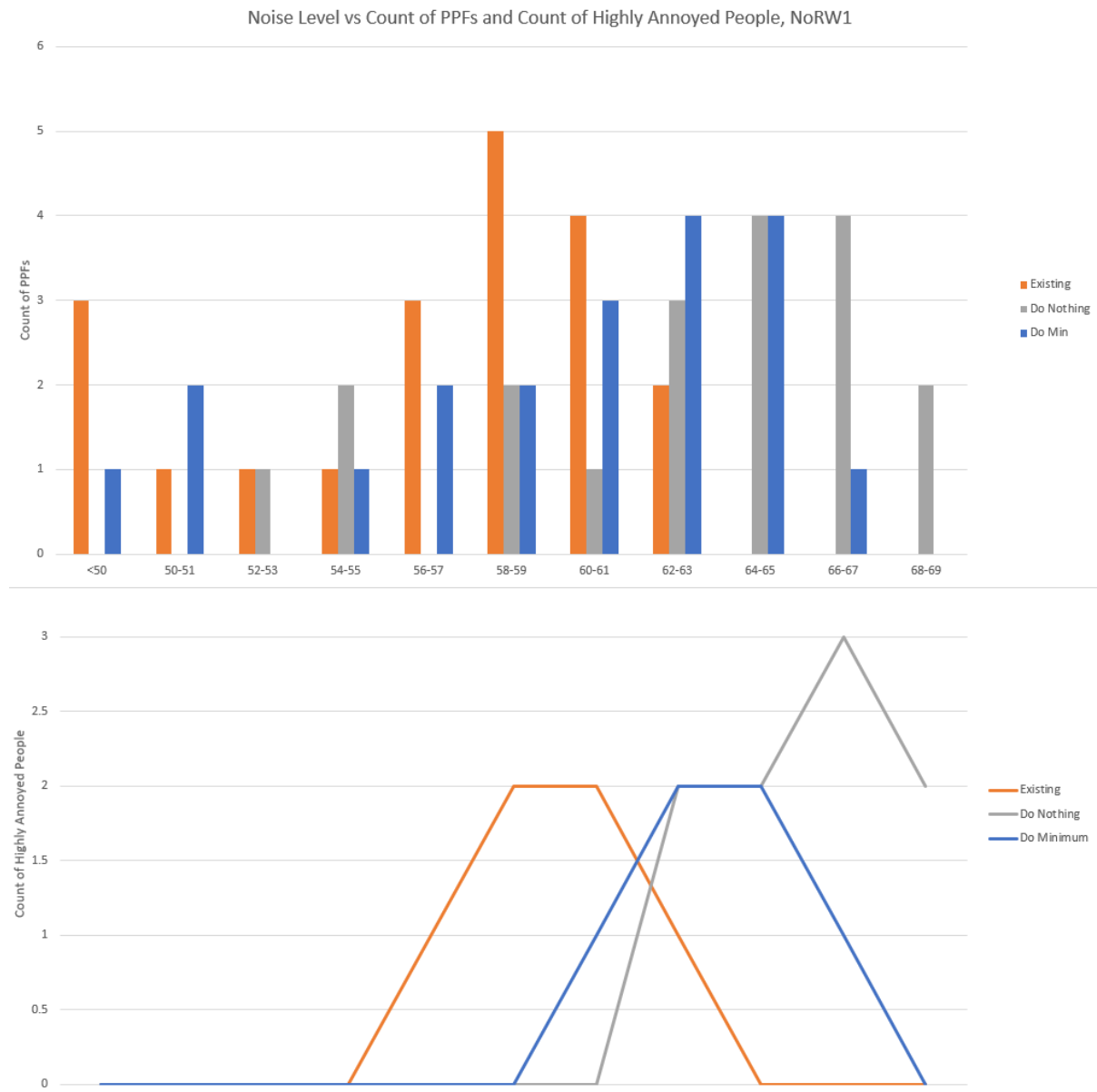


Figure 2 NOR W2 Māmari Road

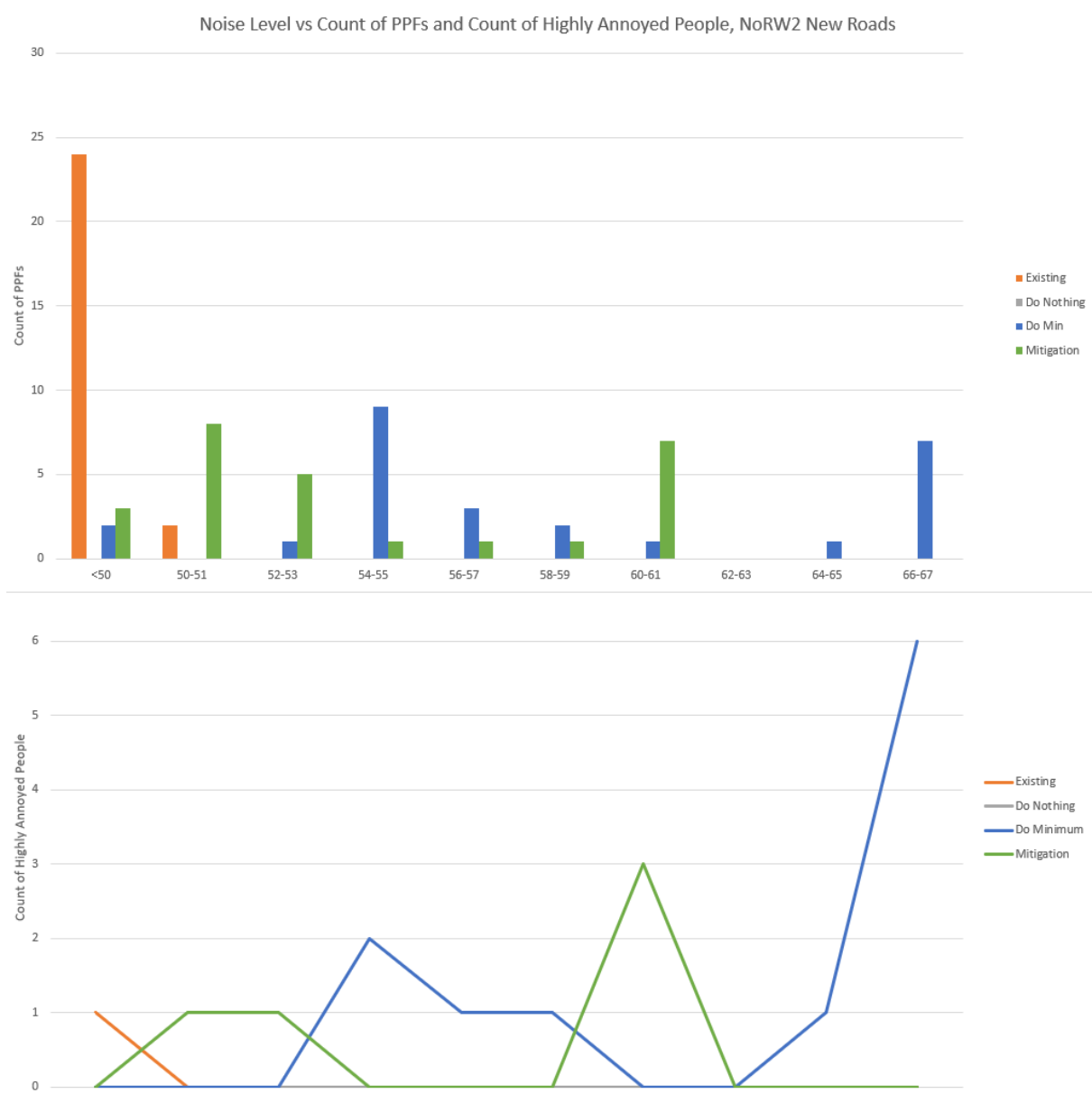


Figure 3 NOR W2 Māmari Road

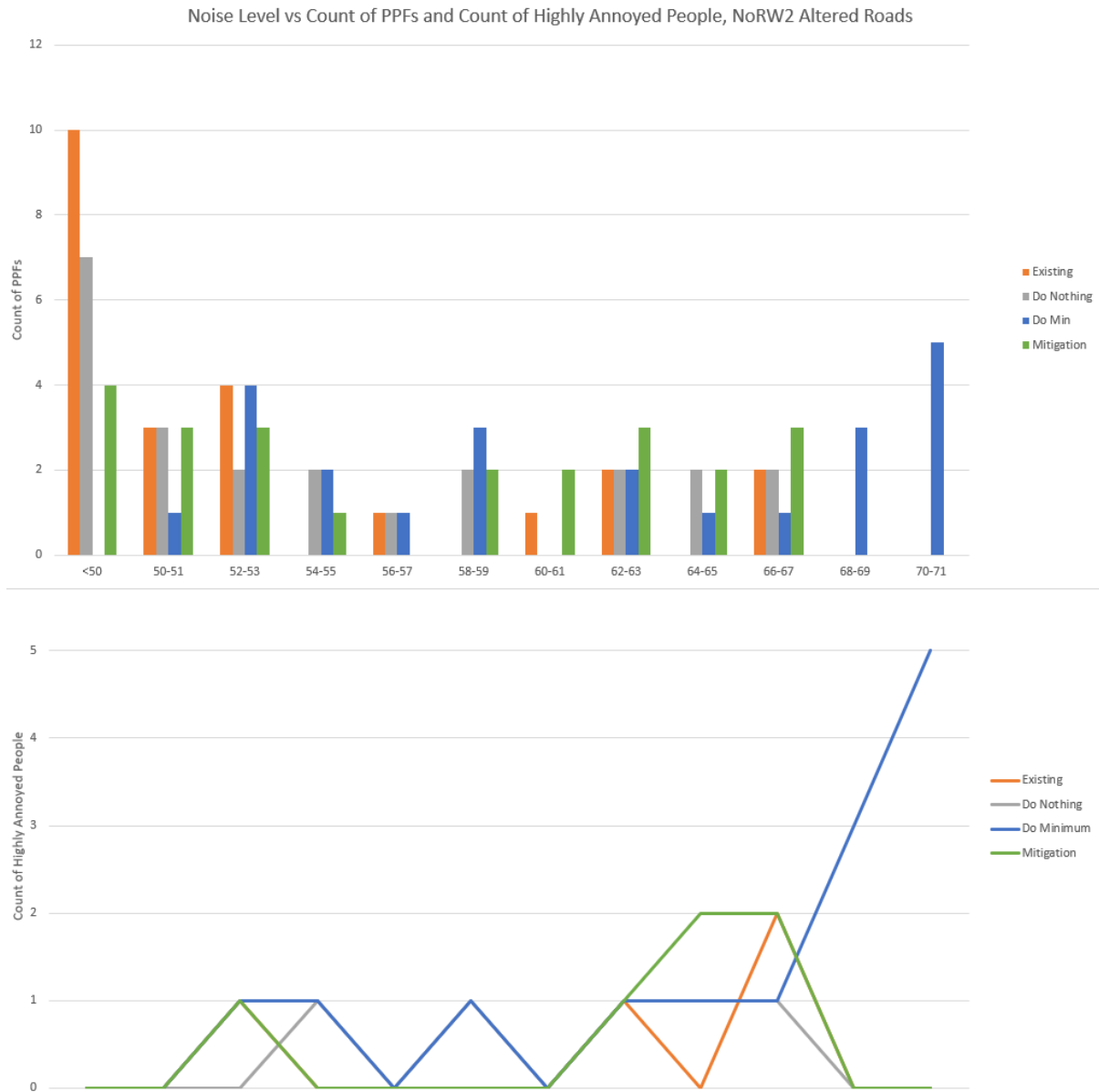


Figure 4 NOR W3 Brigham Creek Road

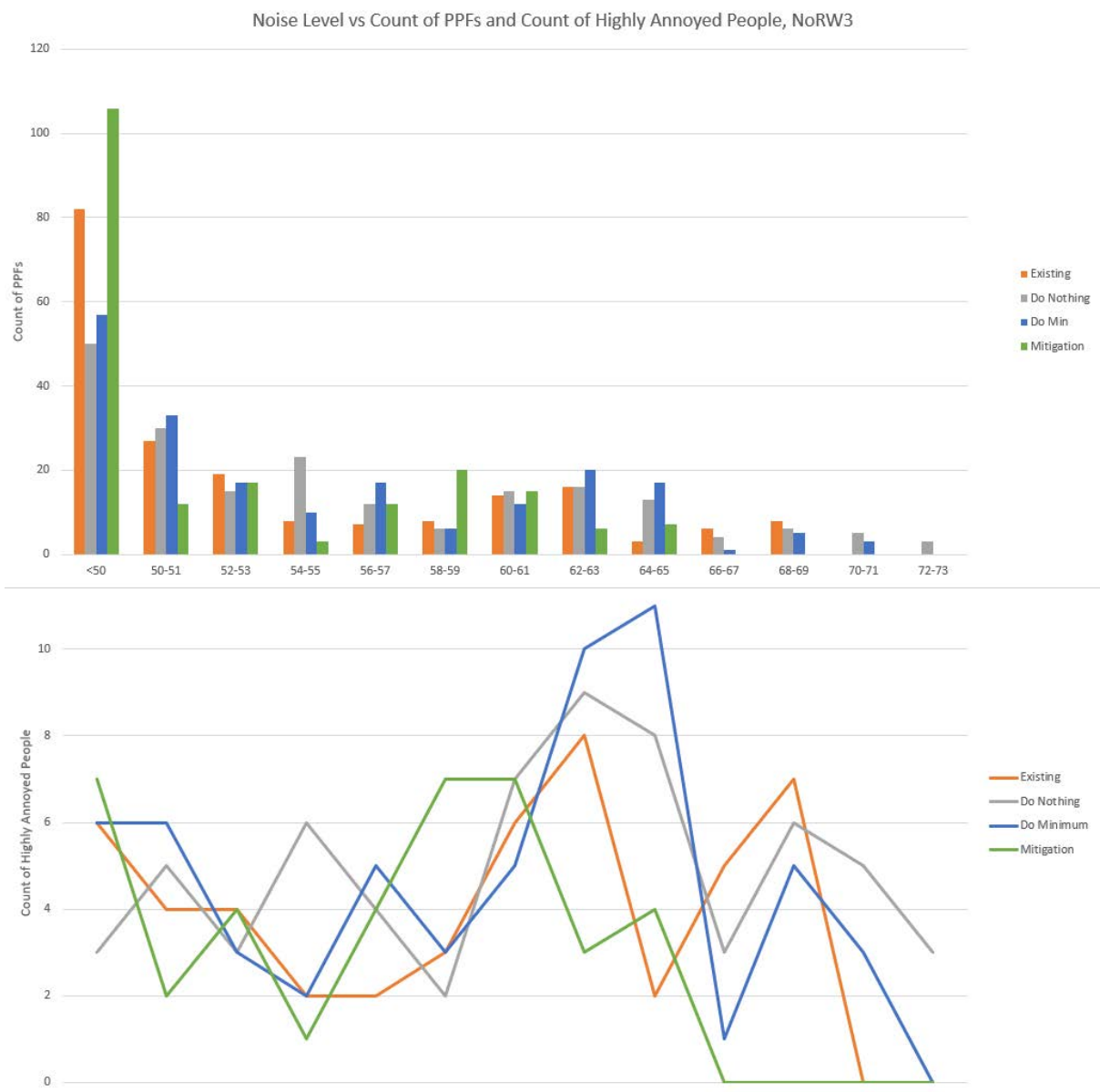


Figure 5 NOR W4 Spedding Road

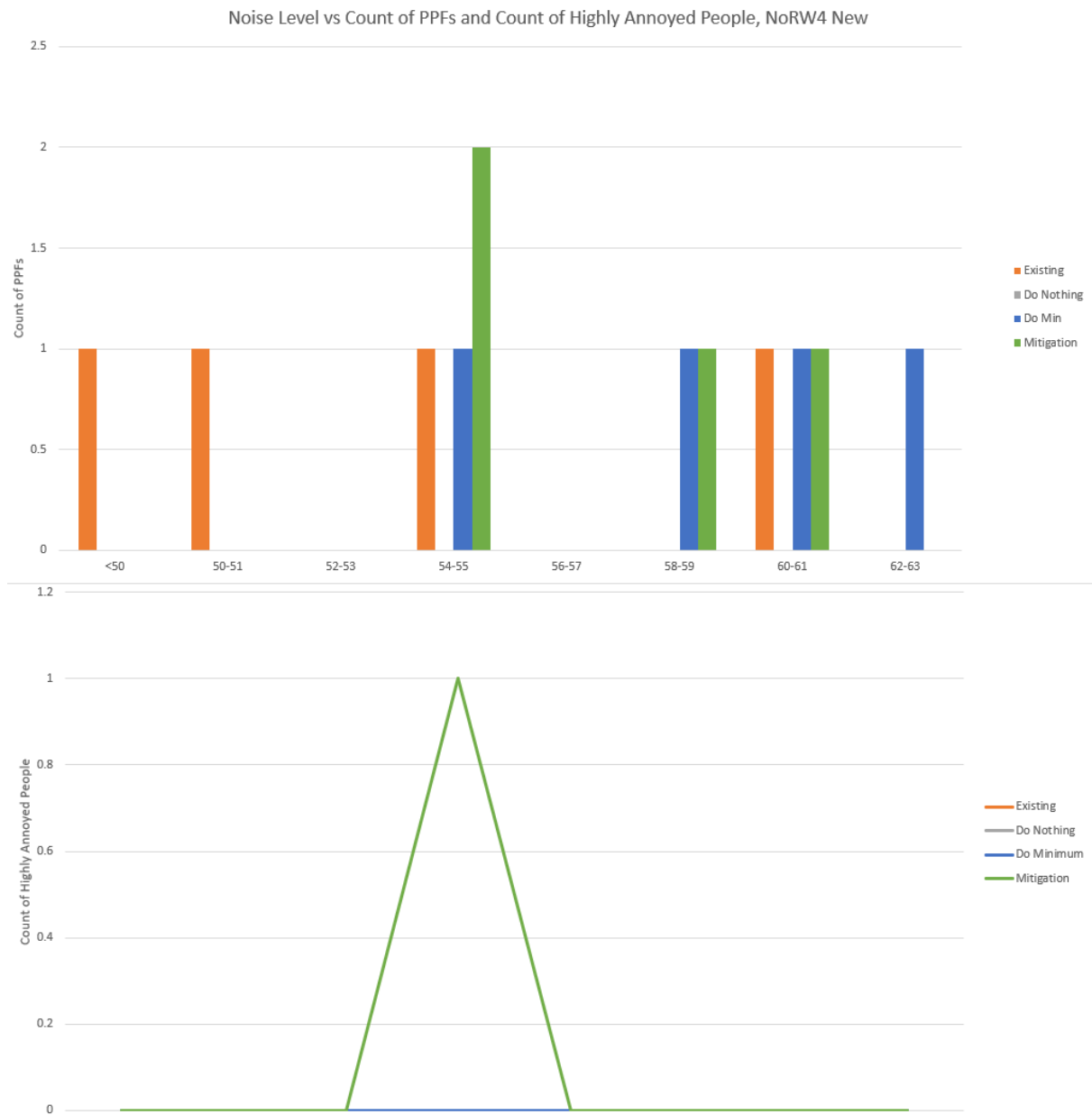


Figure 6 NOR W4 Spedding Road

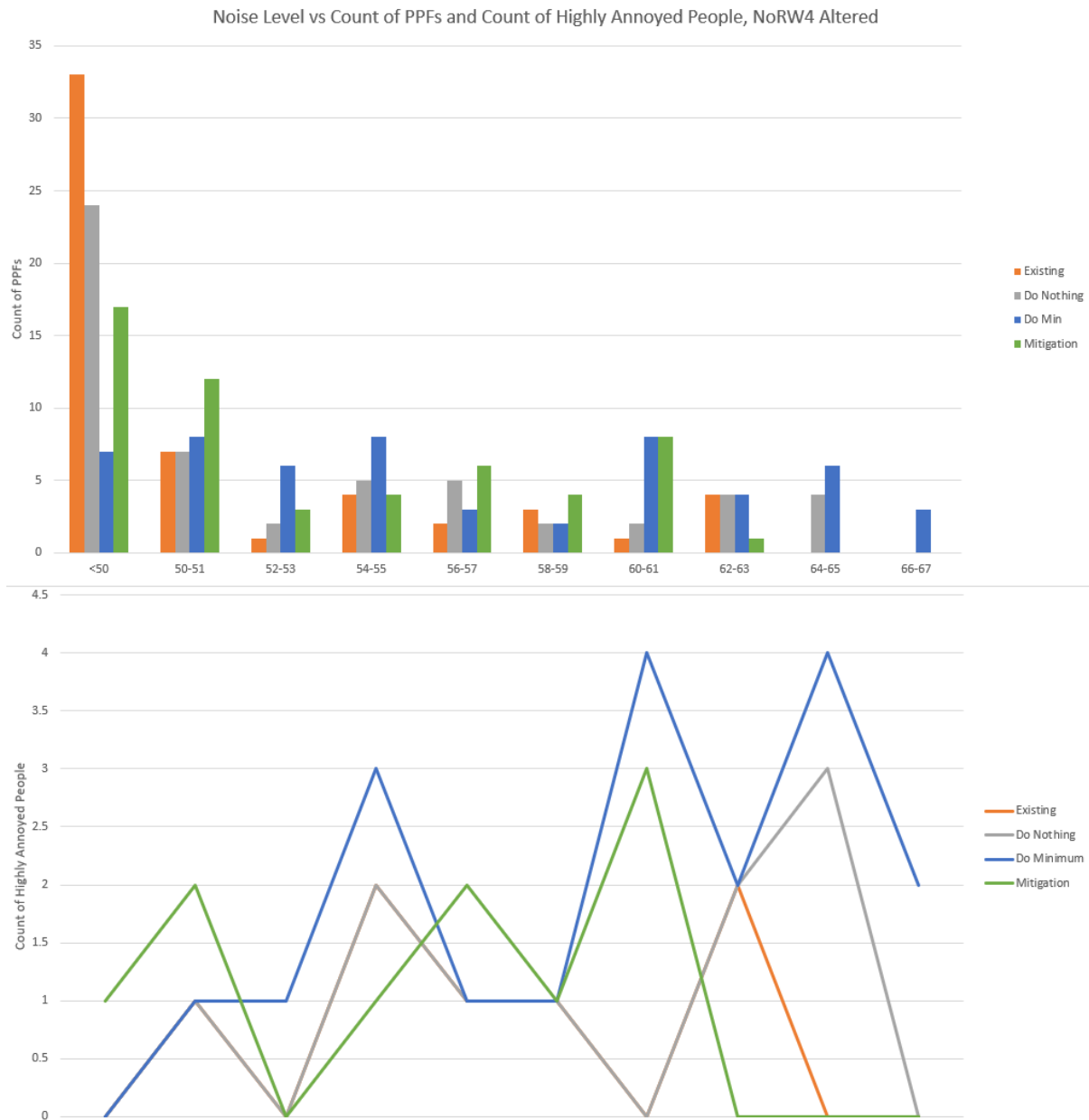


Figure 7 NOR W5 Hobsonville Road

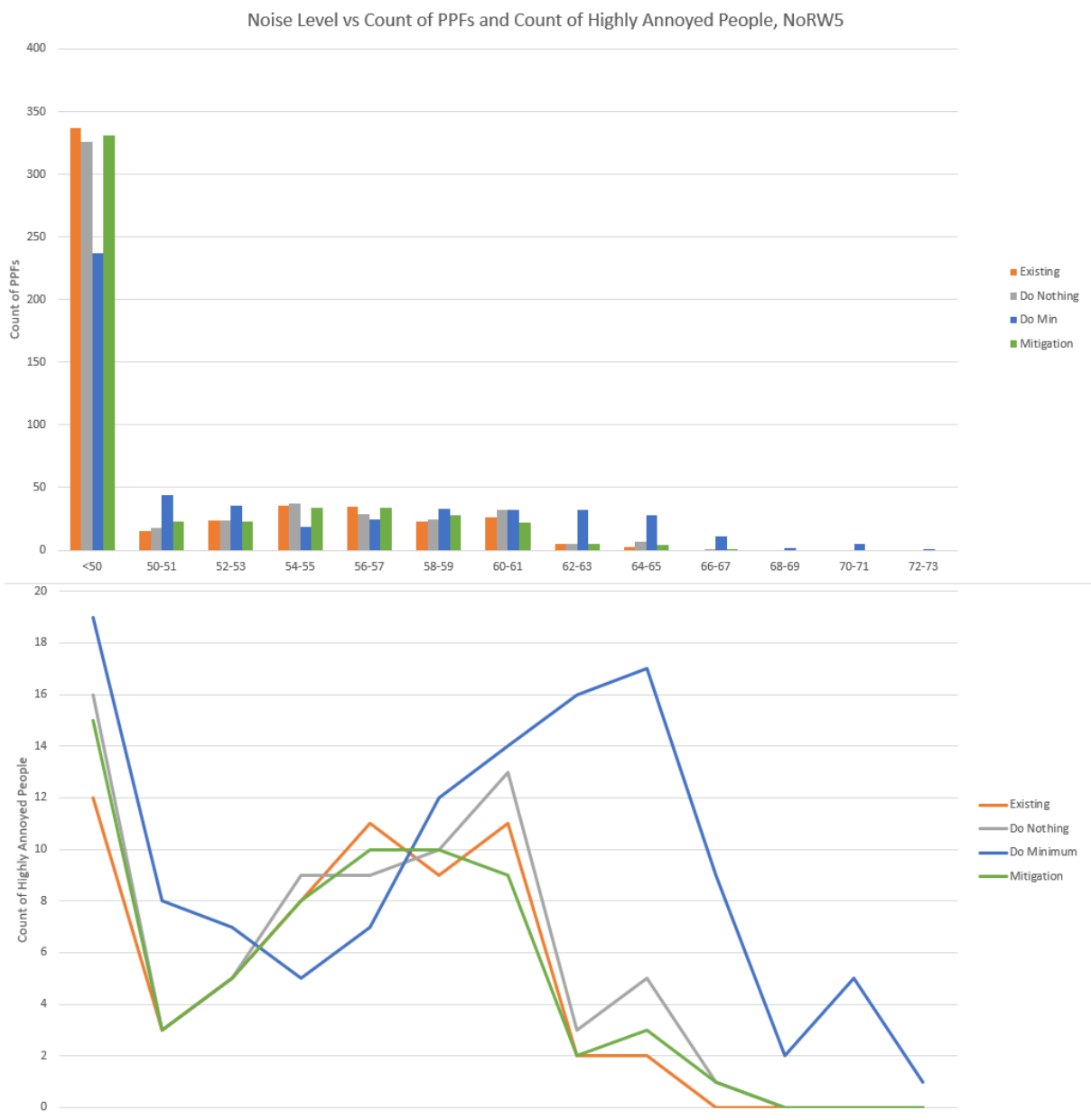


Figure 8 NOR RE1 Don Buck Road



Figure 9 NOR RE2 Fred Taylor Drive

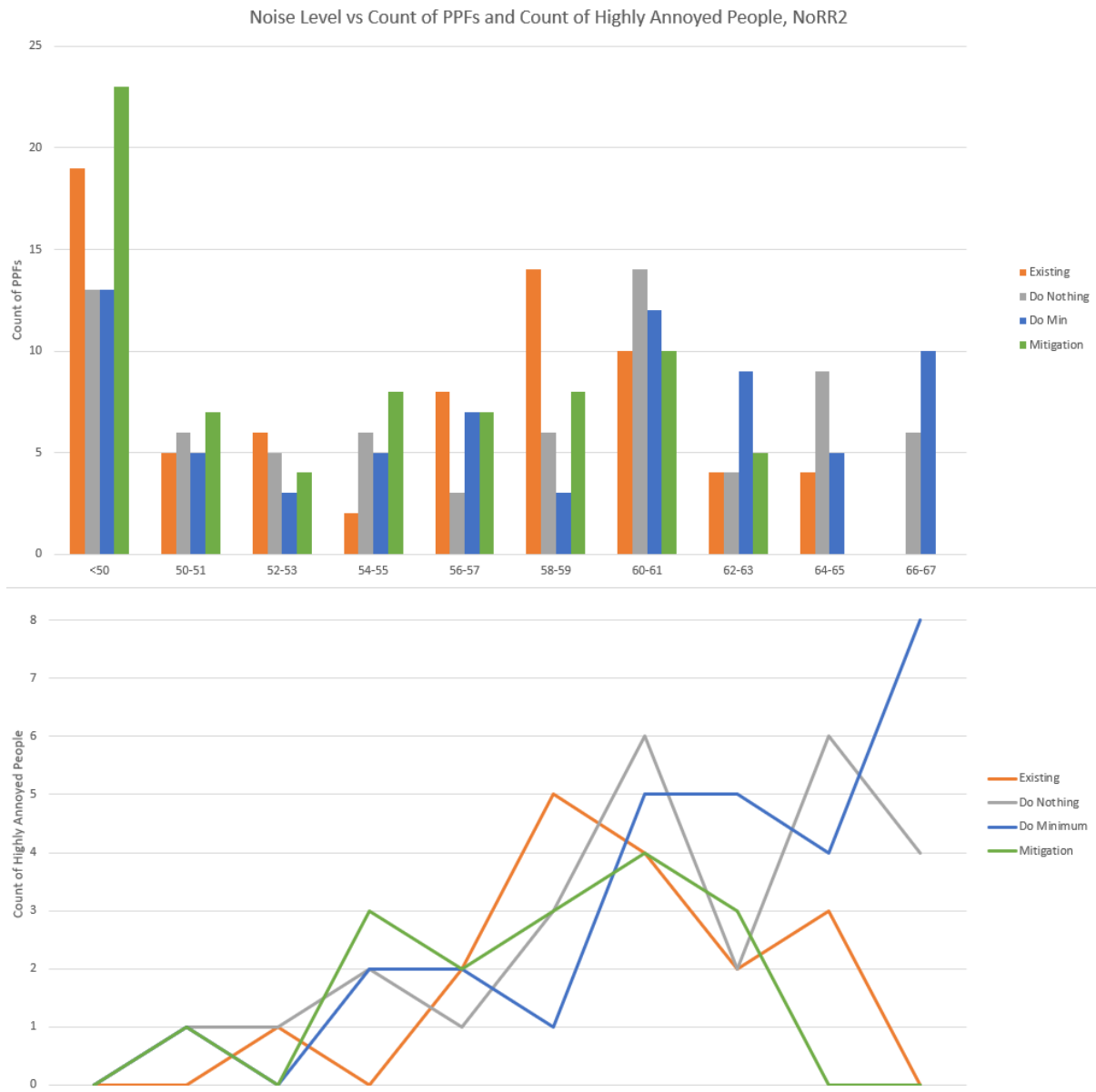


Figure 10 NOR R1 Coatesville-Riverhead Highway

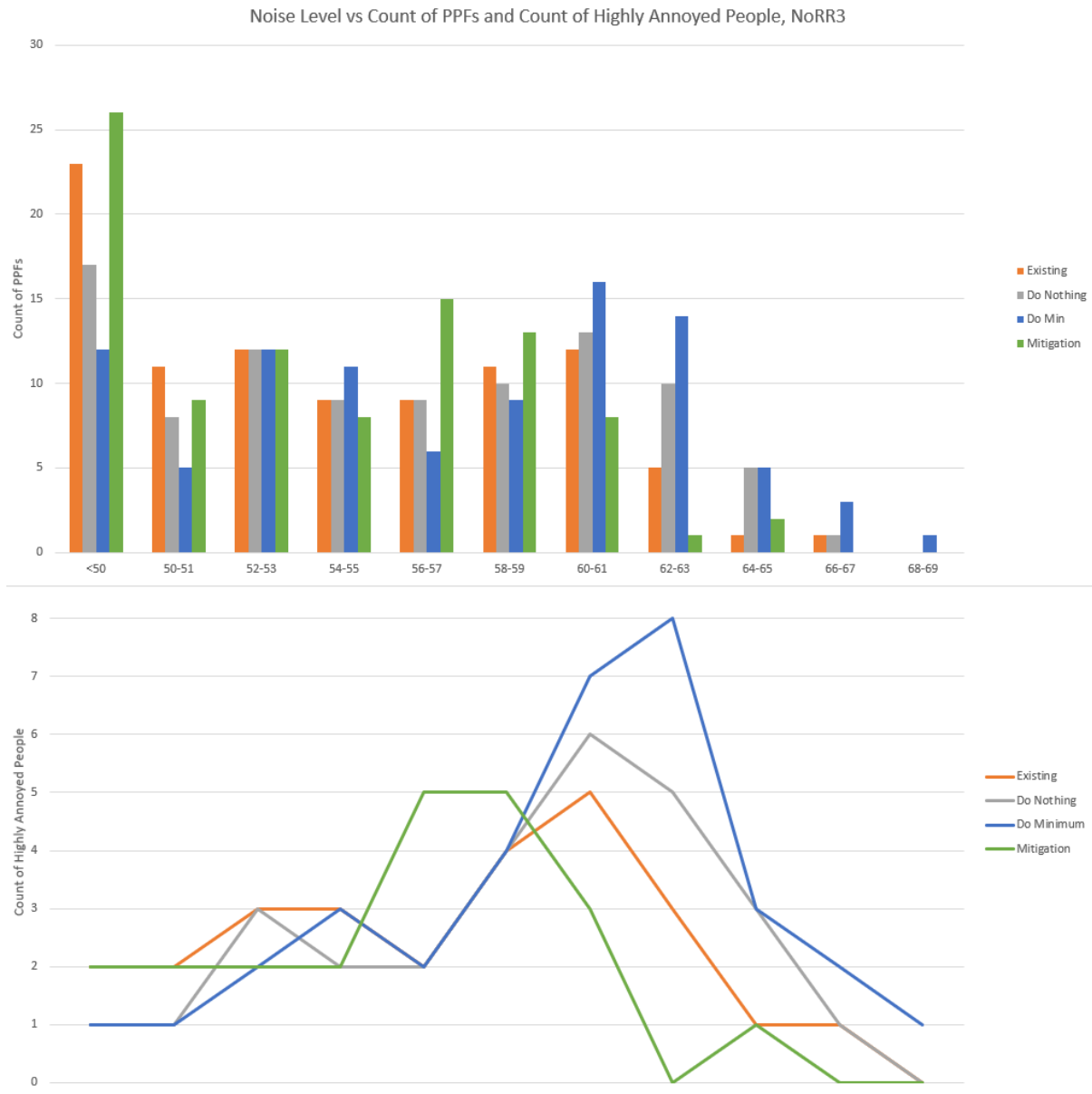


Figure 11 NOR 1 Redhills – North South Arterial

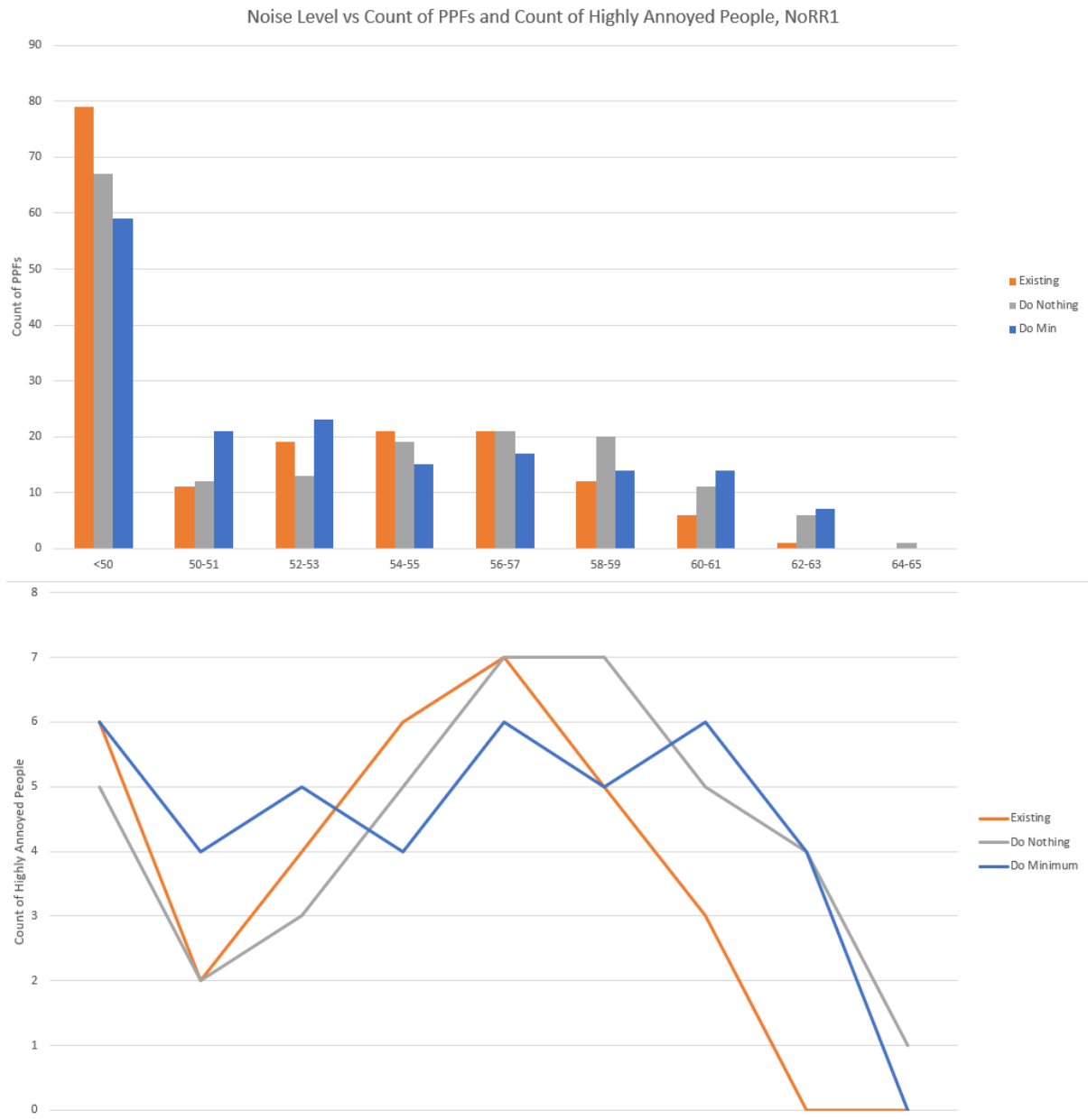


Figure 12 NOR 2b Redhills – East-West Arterial – Baker Lane

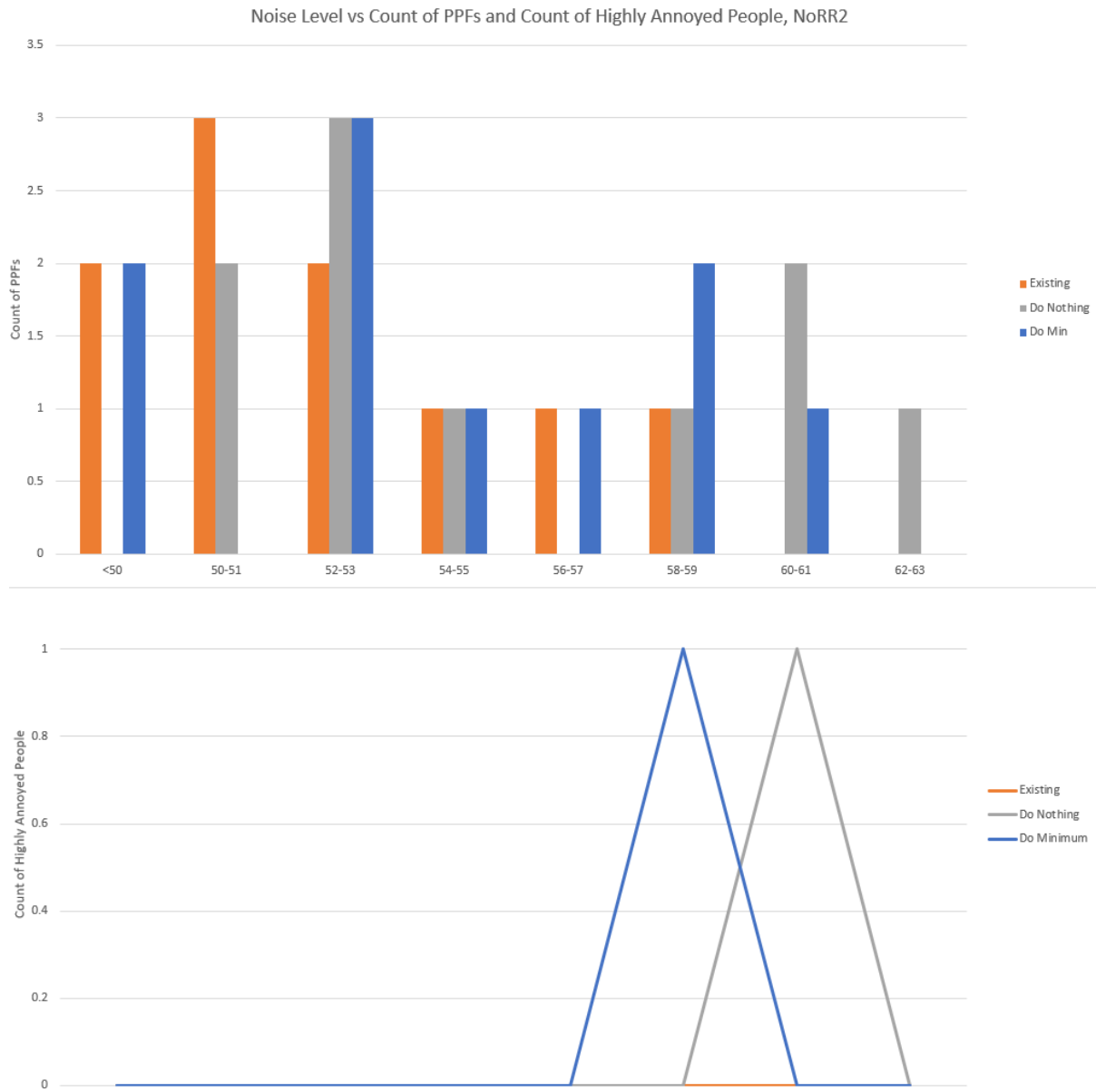


Figure 13 NOR 2c – East West Arterial – Nixon Road

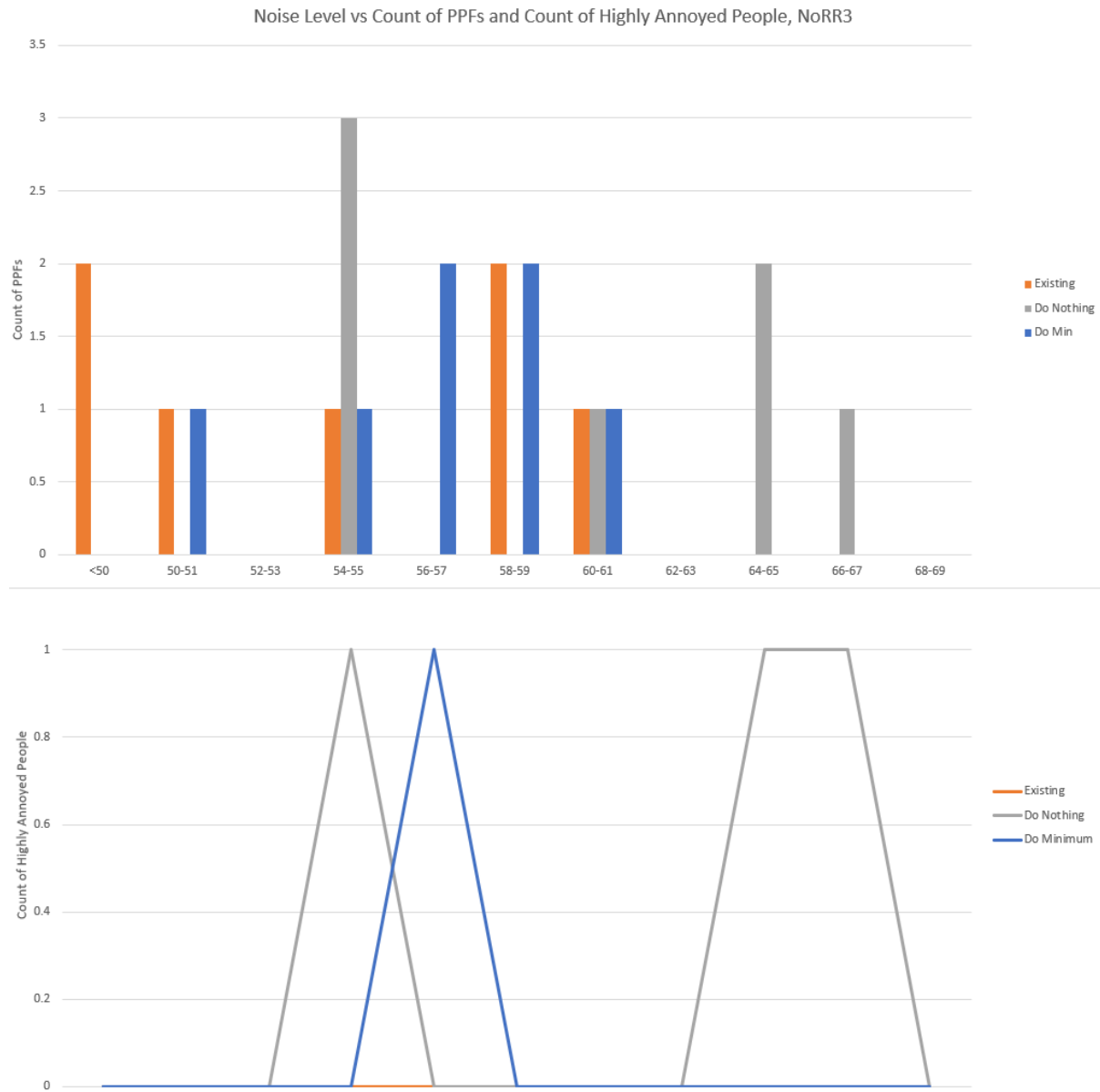


Figure 14 NOR Trig Road (South)

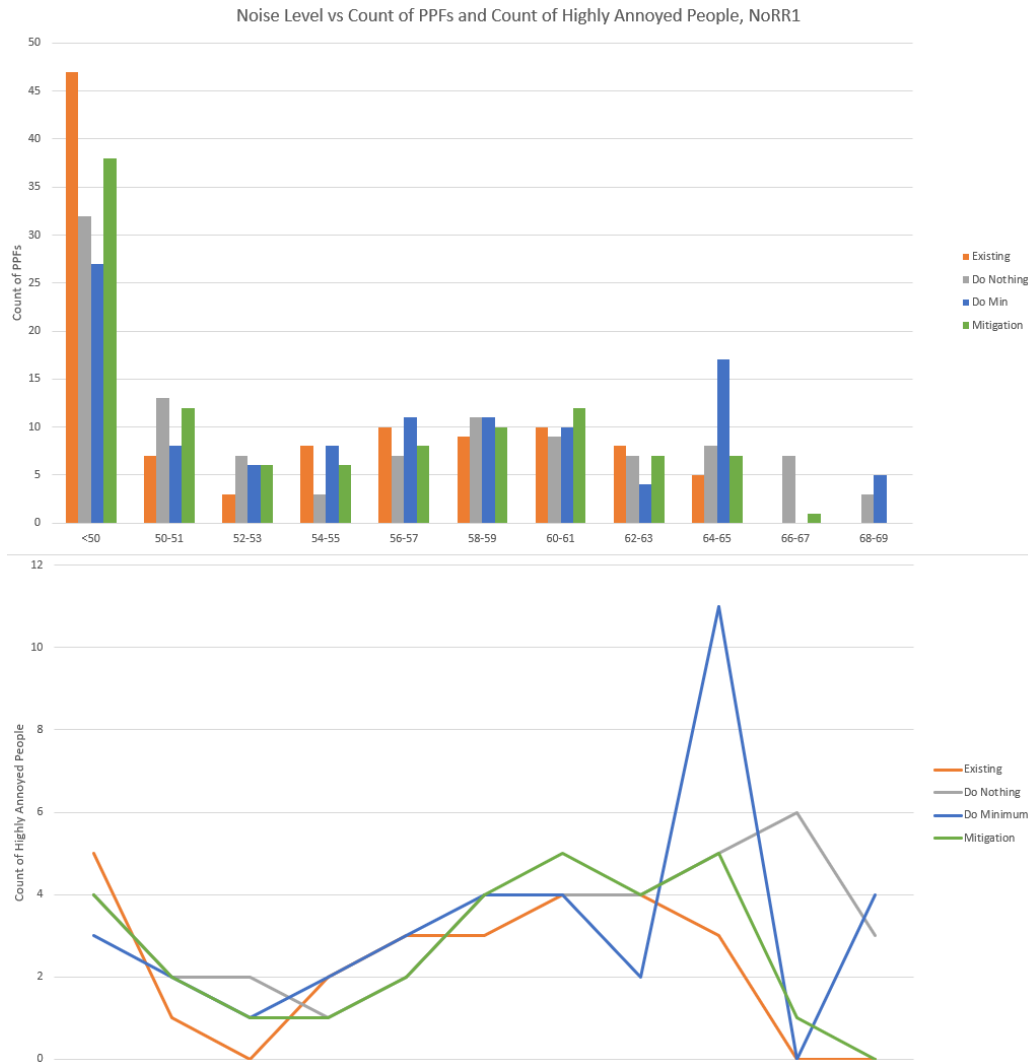


Figure 15 NOR S1 Alternative State Highway

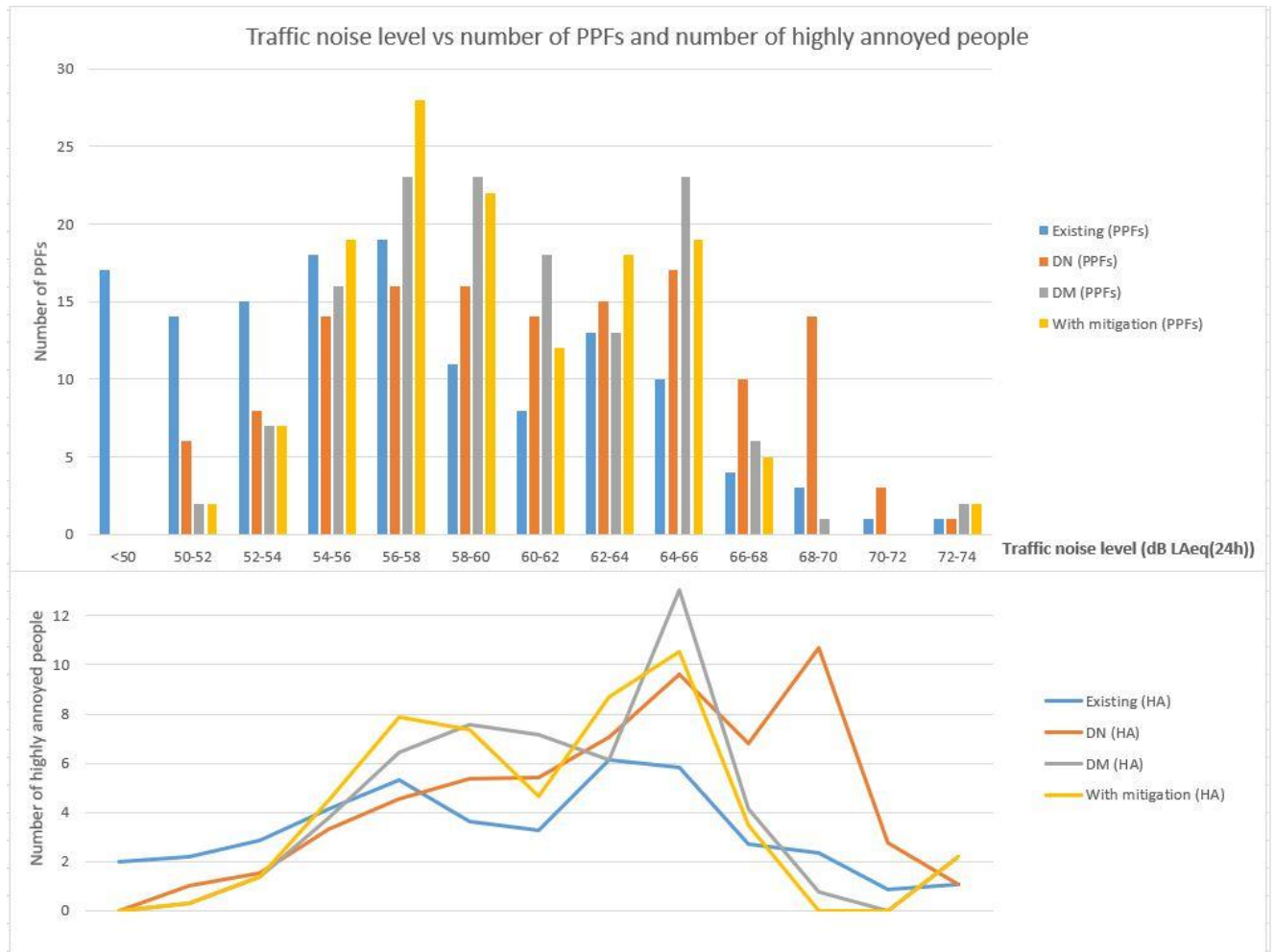


Figure 16 NOR S2 Upgrade of SH16

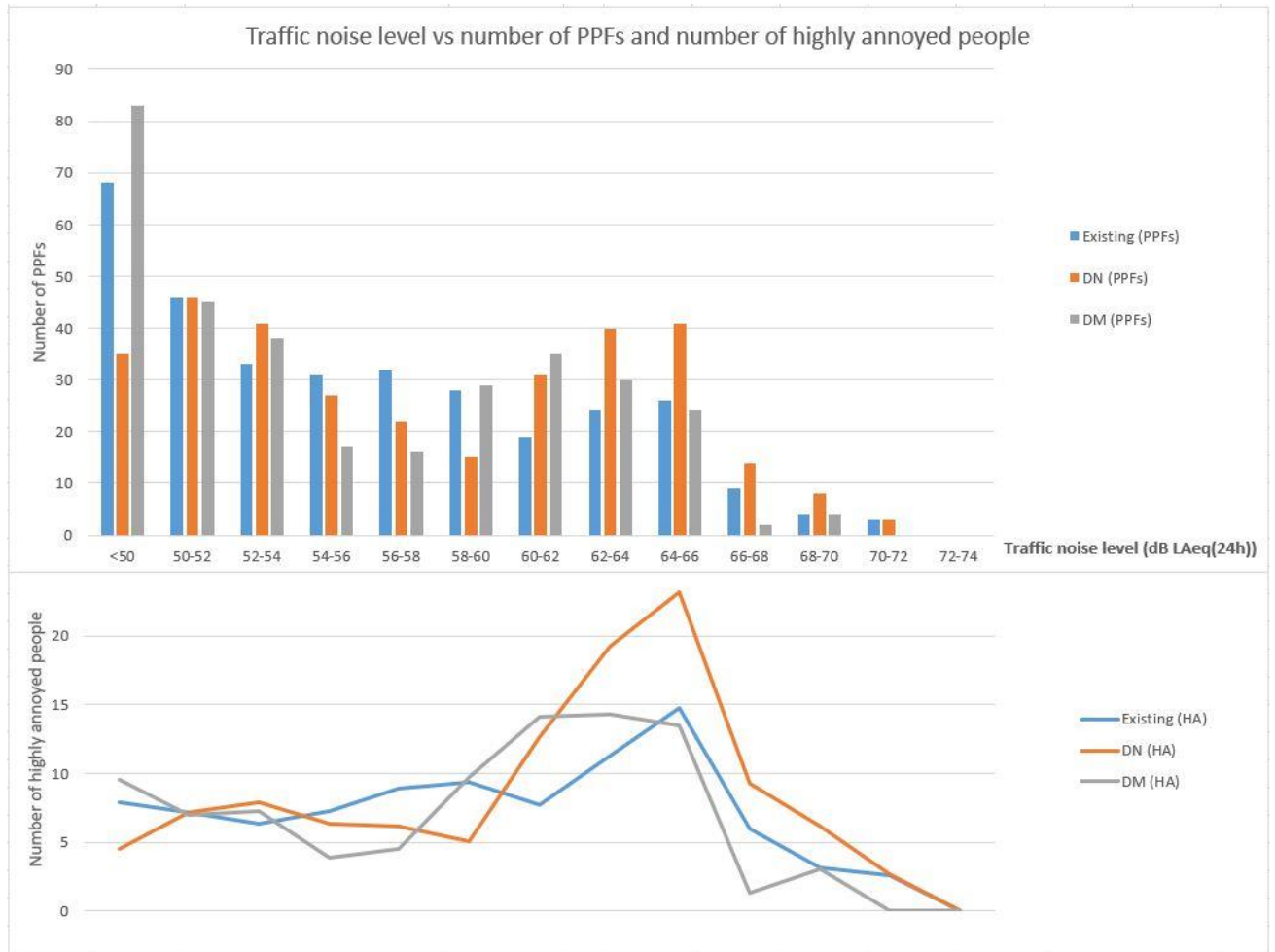


Figure 17 NOR S3 Rapid Transit Corridor

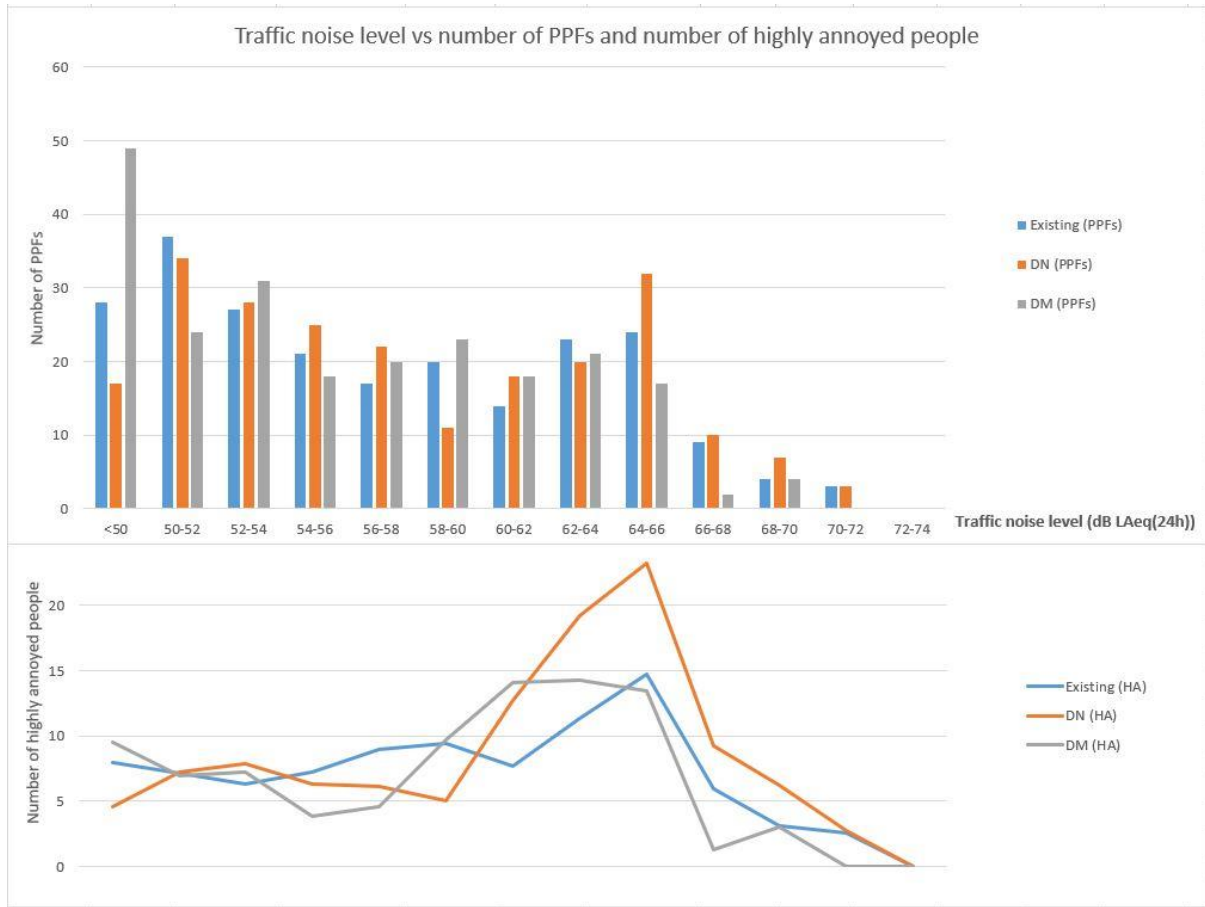
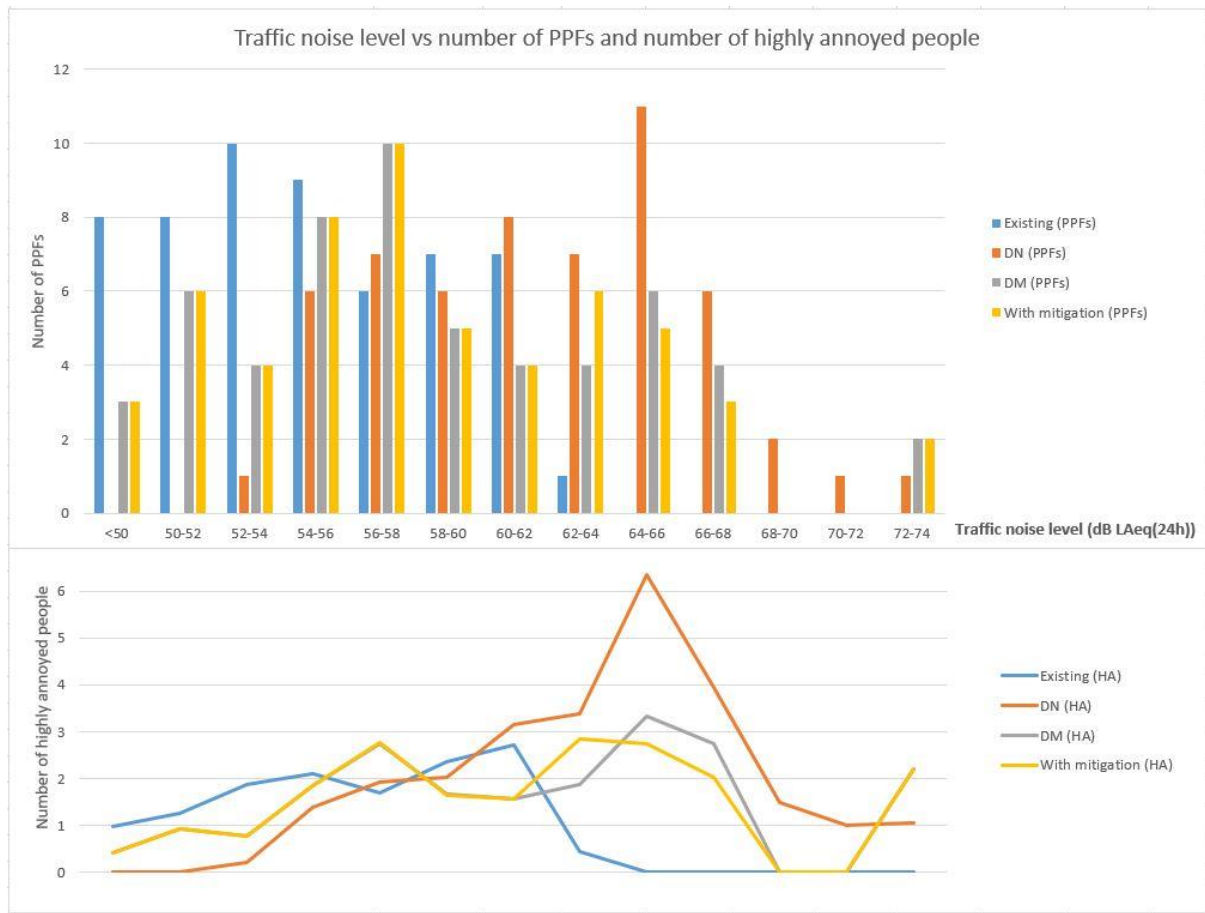


Figure 18 NOR S4 Access Road



ATTACHMENT 12

SUPPORTING GROWTH ALLIANCE NOISE CONTOURS – STRATEGIC NoRs

**SUPPORTING GROWTH PROGRAMME
NORTH WEST ROAD NOISE CONTOURS WITH
AUP PLAN**

Contours dB L_{Aeq}(24h)

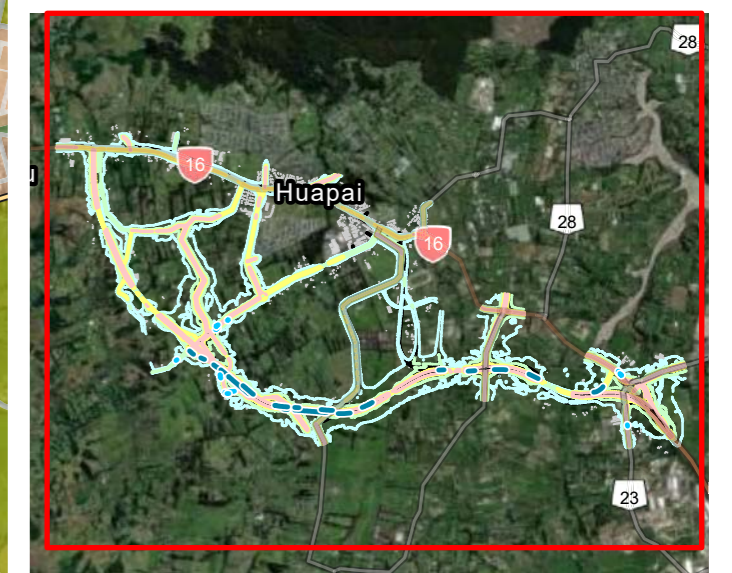
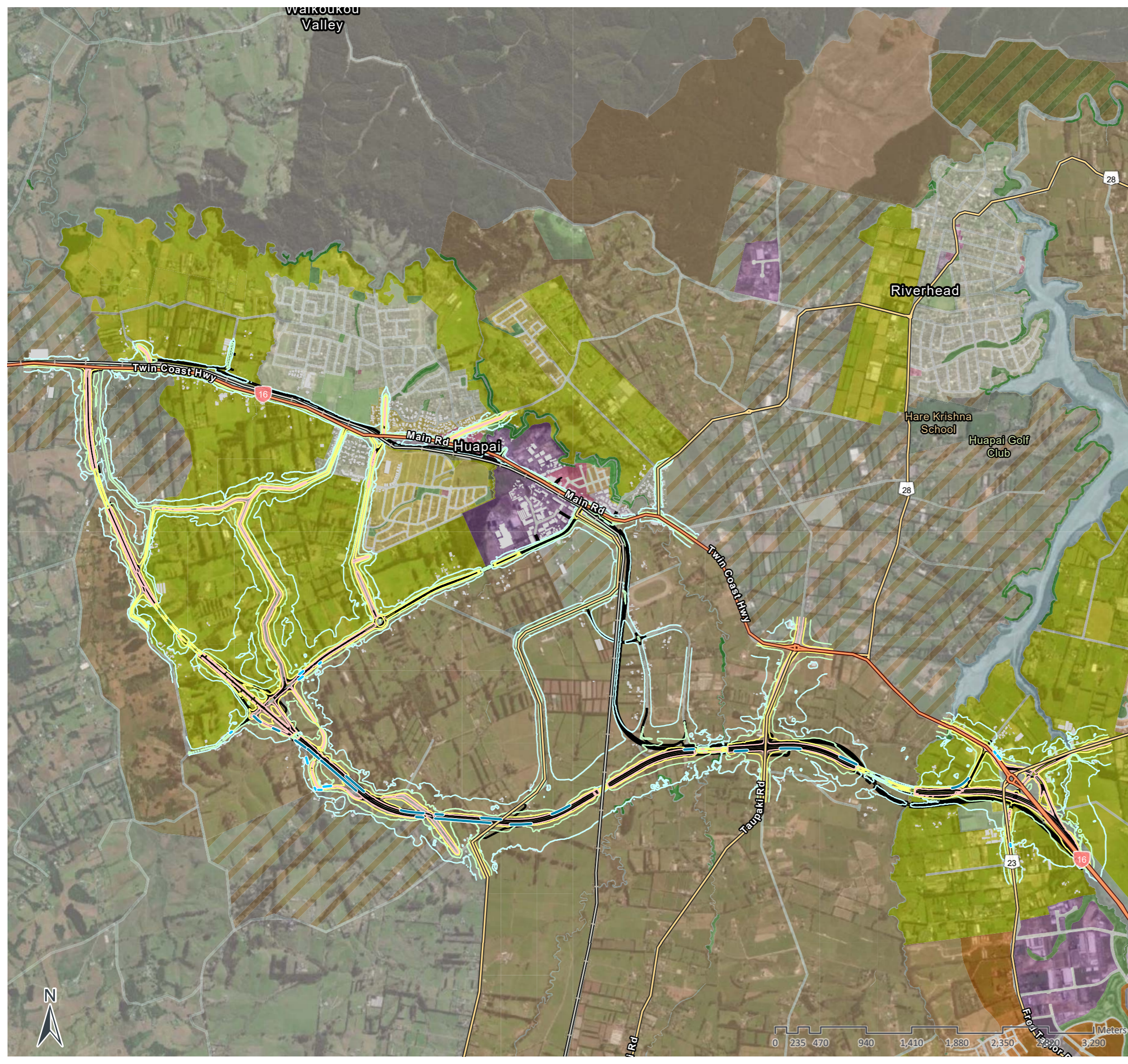
- 55
- 60
- 65
- 70

Noise wall

- At residence
- At ASH
- Project Road
- Building footprints

AUP Zones

- Business - General Business Zone
- Business - Light Industry Zone
- Business - Local Centre Zone
- Business - Metropolitan Centre Zone
- Business - Mixed Use Zone
- Business - Neighbourhood Centre Zone
- Business - Town Centre Zone
- Coastal - Coastal Transition Zone
- Coastal - General Coastal Marine Zone
- Future Urban Zone
- Green Infrastructure Corridor
- Open Space - Conservation Zone
- Open Space - Informal Recreation Zone
- Open Space - Sport and Active Recreation Zone
- Residential - Mixed Housing Suburban Zone
- Residential - Mixed Housing Urban Zone
- Residential - Single House Zone
- Residential - Terrace Housing and Apartment Building Zone
- Road
- Rural - Countryside Living Zone
- Rural - Mixed Rural Zone
- Rural - Rural Conservation Zone
- Rural - Rural Production Zone
- Special Purpose - Cemetery Zone
- Special Purpose - School Zone
- Strategic Transport Corridor Zone
- Water



Client:
SGA

Authors:
Owen Li

Date of Issue:
9/02/2023 4:53 pm

Drawing Details:
Scale: 1:37,000
Projection: WGS 1984 Web Mercator Auxiliary Sphere
Map Rotation: 0°

SoundPLAN Details:
Calculation Method: CoRTN 1988
Result File Name: RRKL3010.res

Map Notes / Comments:
This map is for graphical purposes only. While every effort has been made to ensure that the data are accurate and reliable, Marshall Day Acoustics cannot assume liability for errors or omissions in the data graphically represented. The noise contours were obtained by interpolations of calculated grid points (spacing typically 5-25m), with varying interpolation accuracy. Precise noise levels at specific locations, can be made available at request if not included in the projects point receiver calculations.



**SUPPORTING GROWTH PROGRAMME
NORTH WEST ROAD NOISE CONTOURS WITH
AUP PLAN**

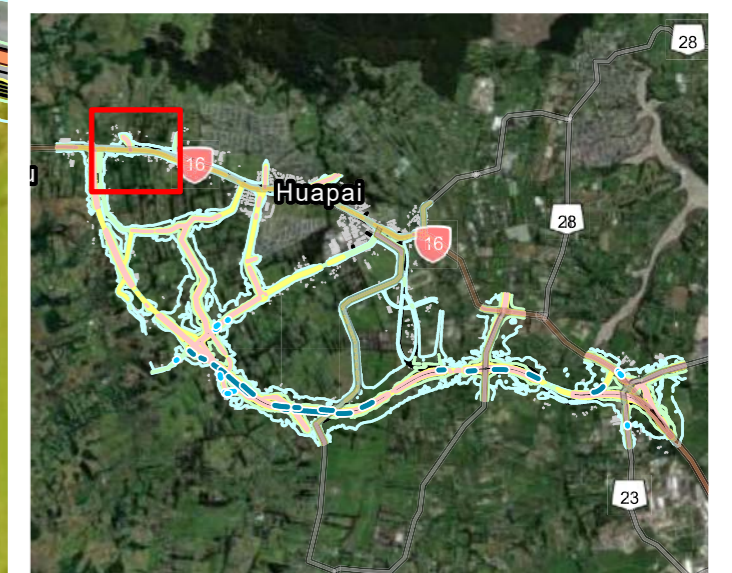
Contours dB $L_{Aeq}(24h)$

- 55
- 60
- 65
- 70

- Project Road
- Building footprints

AUP Zones

- Future Urban Zone
- Road
- Rural - Mixed Rural Zone
- Rural - Rural Production Zone
- Strategic Transport Corridor Zone
- Water



Client:
SGA

Authors:
Owen Li

Date of Issue:
9/02/2023 4:53 pm

Drawing Details:
Scale: 1:5,000
Projection: WGS 1984 Web Mercator Auxiliary Sphere
Map Rotation: 0°

SoundPLAN Details:
Calculation Method: CoRTN 1988
Result File Name: RRKL3010.res

Map Notes / Comments:
This map is for graphical purposes only. While every effort has been made to ensure that the data are accurate and reliable, Marshall Day Acoustics cannot assume liability for errors or omissions in the data graphically represented. The noise contours were obtained by interpolations of calculated grid points (spacing typically 5-25m), with varying interpolation accuracy. Precise noise levels at specific locations, can be made available at request if not included in the projects point receiver calculations.



**SUPPORTING GROWTH PROGRAMME
NORTH WEST ROAD NOISE CONTOURS WITH
AUP PLAN**

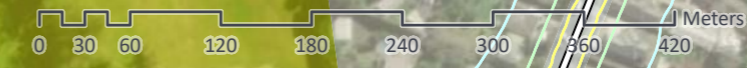
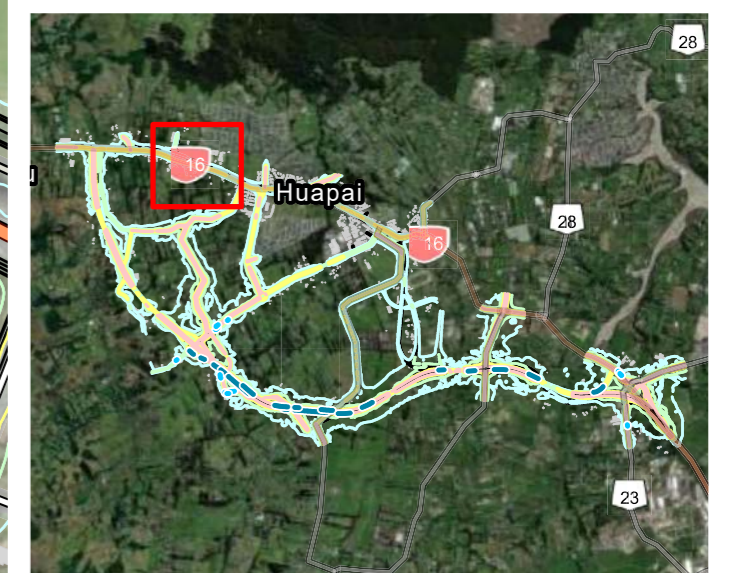
Contours dB $L_{Aeq}(24h)$

- 55
- 60
- 65

Building footprints

AUP Zones

- Future Urban Zone
- Open Space - Informal Recreation Zone
- Open Space - Sport and Active Recreation Zone
- Residential - Single House Zone
- Road
- Rural - Mixed Rural Zone
- Strategic Transport Corridor Zone
- Water



Client: SGA
Authors: Owen Li
Date of Issue: 9/02/2023 4:53 pm

Drawing Details: Scale: 1:5,000
 Projection: WGS 1984 Web Mercator Auxiliary Sphere
 Map Rotation: 0°

SoundPLAN Details: Calculation Method: CoRTN 1988
 Result File Name: RRKL3010.res

Map Notes / Comments:
 This map is for graphical purposes only. While every effort has been made to ensure that the data are accurate and reliable, Marshall Day Acoustics cannot assume liability for errors or omissions in the data graphically represented. The noise contours were obtained by interpolations of calculated grid points (spacing typically 5-25m), with varying interpolation accuracy. Precise noise levels at specific locations, can be made available at request if not included in the projects point receiver calculations.

**SUPPORTING GROWTH PROGRAMME
NORTH WEST ROAD NOISE CONTOURS WITH
AUP PLAN**

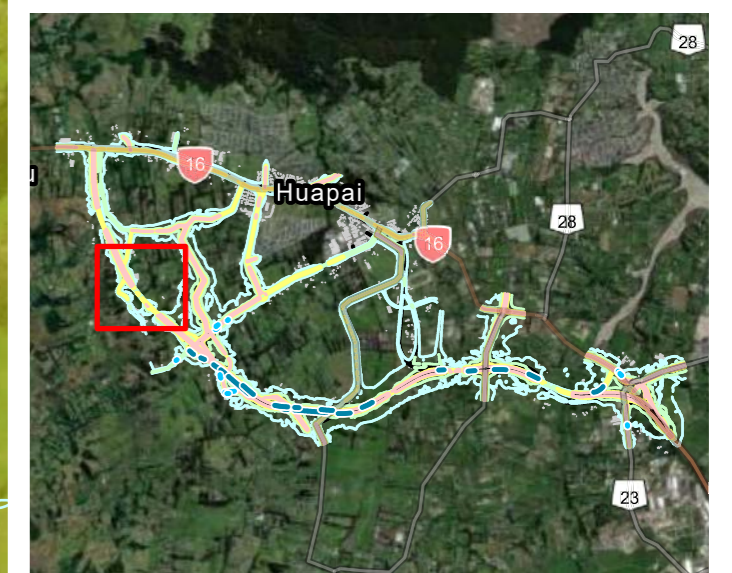
Contours dB $L_{Aeq}(24h)$

- 55
- 60
- 65
- 70

- Project Road
- Building footprints

AUP Zones

- Future Urban Zone Road
- Rural - Countryside Living Zone
- Rural - Rural Production Zone



Client:
SGA

Authors:
Owen Li

Date of Issue:
9/02/2023 4:53 pm

Drawing Details:
Scale: 1:5,000
Projection: WGS 1984 Web Mercator Auxillary Sphere
Map Rotation: 0°

SoundPLAN Details:
Calculation Method: CoRTN 1988
Result File Name: RRKL3010.res

Map Notes / Comments:
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**SUPPORTING GROWTH PROGRAMME
NORTH WEST ROAD NOISE CONTOURS WITH
AUP PLAN**

Contours dB $L_{Aeq}(24h)$

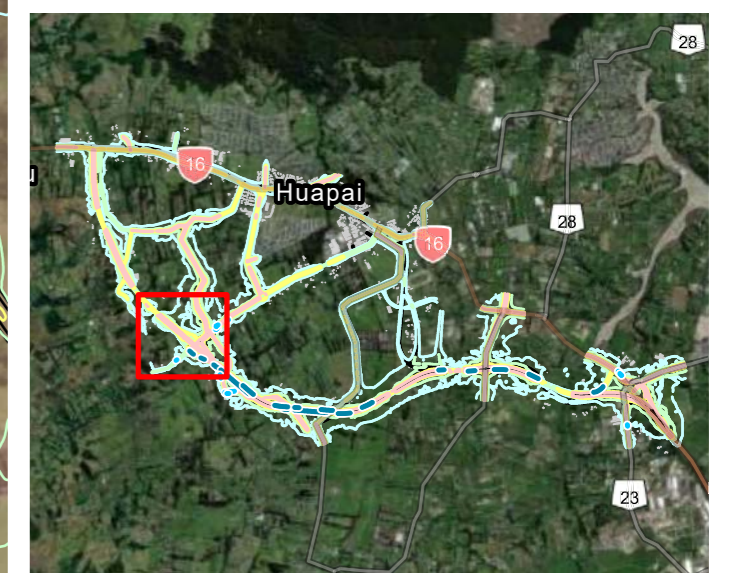
- 55
- 60
- 65
- 70

Noise wall

- At residence
- At ASH
- Project Road
- Building footprints

AUP Zones

- Future Urban Zone
- Road
- Rural - Countryside Living Zone



Client:
SGA

Authors:
Owen Li

Date of Issue:
9/02/2023 4:53 pm

Drawing Details:
Scale: 1:5,000
Projection: WGS 1984 Web Mercator Auxiliary Sphere
Map Rotation: 0°

SoundPLAN Details:
Calculation Method: CoRTN 1988
Result File Name: RRKL3010.res

Map Notes / Comments:
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**SUPPORTING GROWTH PROGRAMME
NORTH WEST ROAD NOISE CONTOURS WITH
AUP PLAN**

Contours dB $L_{Aeq}(24h)$

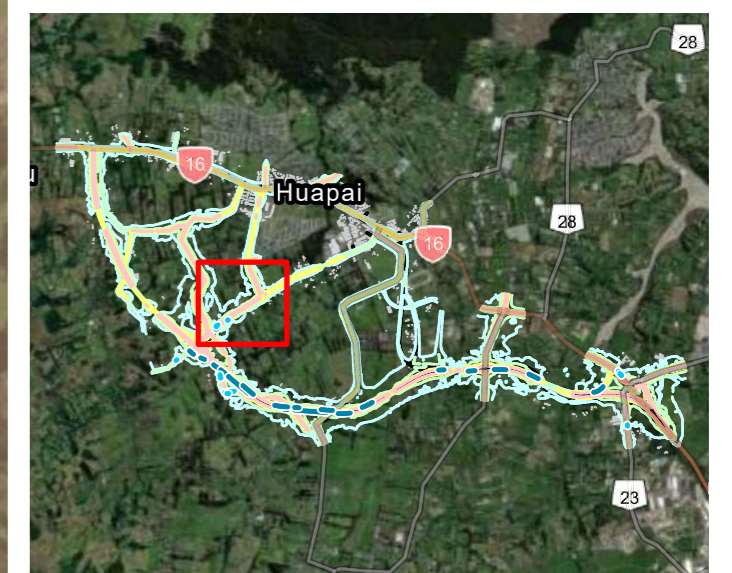
- 55
- 60
- 65
- 70

Noise wall

- At residence
- Project Road
- Building footprints

AUP Zones

- Future Urban Zone
- Road
- Rural - Countryside Living Zone



Client:
SGA

Authors:
Owen Li

Date of Issue:
9/02/2023 4:53 pm

Drawing Details:
Scale: 1:5,000
Projection: WGS 1984 Web Mercator Auxiliary Sphere
Map Rotation: 0°

SoundPLAN Details:
Calculation Method: CoRTN 1988
Result File Name: RRKL3010.res

Map Notes / Comments:
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**SUPPORTING GROWTH PROGRAMME
NORTH WEST ROAD NOISE CONTOURS WITH
AUP PLAN**

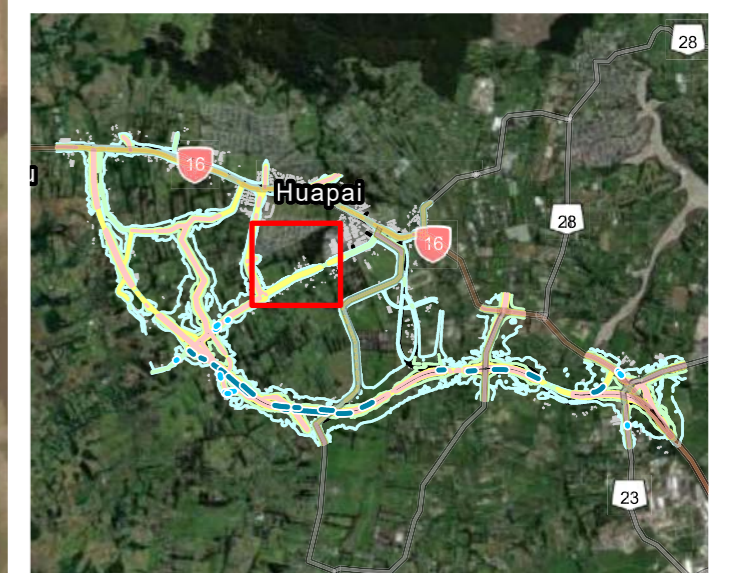
Contours dB L_{Aeq}(24h)

- 55
- 60
- 65
- 70

Building footprints

AUP Zones

- Business - Light Industry Zone
- Business - Neighbourhood Centre Zone
- Future Urban Zone
- Green Infrastructure Corridor
- Open Space - Informal Recreation Zone
- Residential - Mixed Housing Suburban Zone
- Road
- Rural - Countryside Living Zone
- Special Purpose - Cemetery Zone
- Water



Client:
SGA

Authors:
Owen Li

Date of Issue:
9/02/2023 4:53 pm

Drawing Details:
Scale: 1:5,000
Projection: WGS 1984 Web Mercator Auxiliary Sphere
Map Rotation: 0°

SoundPLAN Details:
Calculation Method: CoRTN 1988
Result File Name: RRKL3010.res

Map Notes / Comments:
This map is for graphical purposes only. While every effort has been made to ensure that the data are accurate and reliable, Marshall Day Acoustics cannot assume liability for errors or omissions in the data graphically represented. The noise contours were obtained by interpolations of calculated grid points (spacing typically 5-25m), with varying interpolation accuracy. Precise noise levels at specific locations, can be made available at request if not included in the projects point receiver calculations.



**SUPPORTING GROWTH PROGRAMME
NORTH WEST ROAD NOISE CONTOURS WITH
AUP PLAN**

Contours dB $L_{Aeq}(24h)$

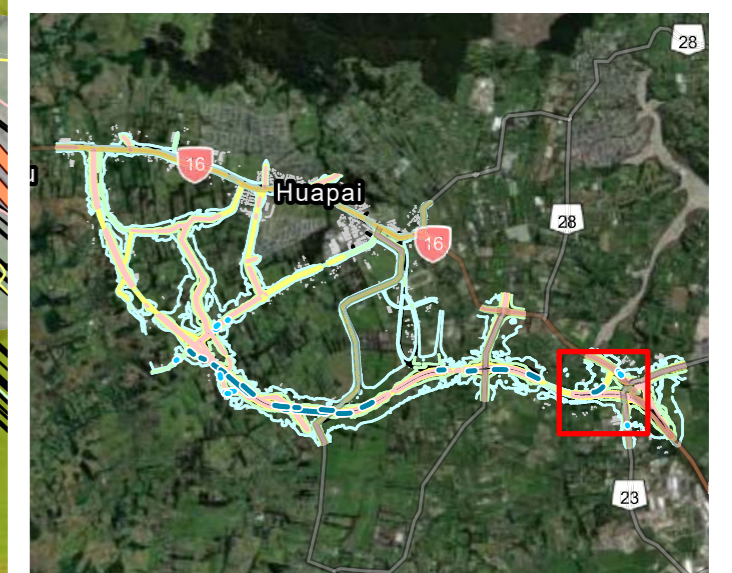
- 55
- 60
- 65
- 70

Noise wall

- At residence
- At ASH
- Project Road
- Building footprints

AUP Zones

- Coastal - Coastal Transition Zone
- Coastal - General Coastal Marine Zone
- Future Urban Zone
- Open Space - Conservation Zone
- Open Space - Sport and Active Recreation Zone
- Road
- Rural - Countryside Living Zone
- Rural - Mixed Rural Zone
- Strategic Transport Corridor Zone
- Water



Client:
SGA

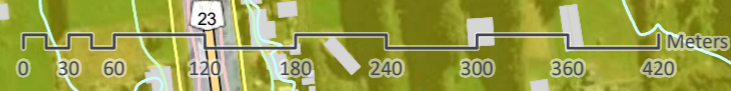
Authors:
Owen Li

Date of Issue:
9/02/2023 4:53 pm

Drawing Details:
Scale: 1:5,000
Projection: WGS 1984 Web Mercator Auxiliary Sphere
Map Rotation: 0°

SoundPLAN Details:
Calculation Method: CoRTN 1988
Result File Name: RRKL3010.res

Map Notes / Comments:
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**SUPPORTING GROWTH PROGRAMME
NORTH WEST ROAD NOISE CONTOURS WITH
AUP PLAN**

Contours dB L_{Aeq}(24h)

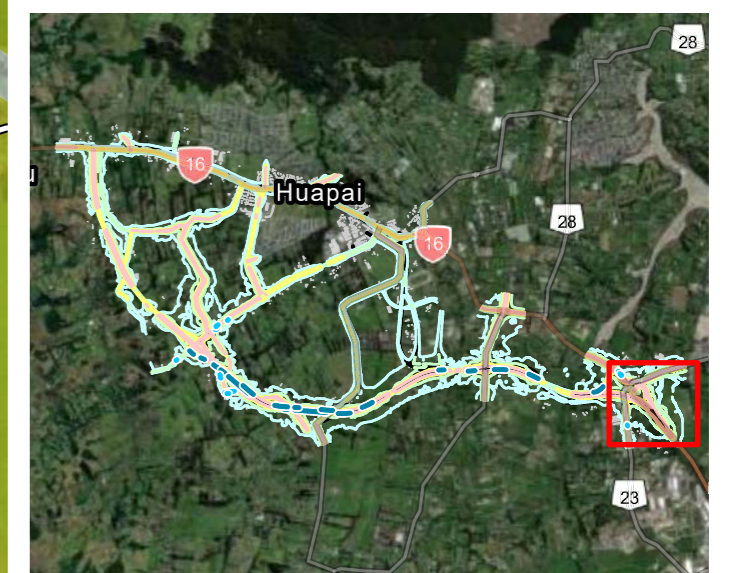
- 55
- 60
- 65
- 70

Noise wall

- At residence
- Project Road
- Building footprints

AUP Zones

- Coastal - Coastal Transition Zone
- Coastal - General Coastal Marine Zone
- Future Urban Zone
- Open Space - Conservation Zone
- Open Space - Sport and Active Recreation Zone
- Road
- Strategic Transport Corridor Zone
- Water



Client:
SGA

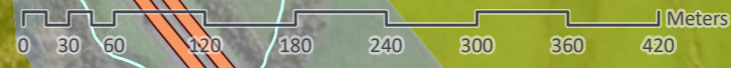
Authors:
Owen Li

Date of Issue:
9/02/2023 4:53 pm

Drawing Details:
Scale: 1:5,000
Projection: WGS 1984 Web Mercator Auxillary Sphere
Map Rotation: 0°

SoundPLAN Details:
Calculation Method: CoRTN 1988
Result File Name: RRKL3010.res

Map Notes / Comments:
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ATTACHMENT 13

**SUPPORTING GROWTH ALLIANCE
NOISE CONTOURS
NoR W1 – TRIG ROAD NORTH**



Noise Level dB L_{Aeq}(24h)

- 55 - 60
- 60 - 65
- 65 - 70
- > 70

- Building Footprint
- Project Road

AUP Zones

- Residential - Single House Zone
- Business - Light Industry Zone
- Future Urban Zone
- Strategic Transport Corridor Zone
- Special Purpose Zone
- Road

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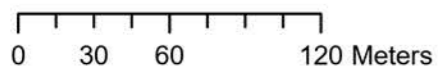
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Auckland Council, LINZ, Waikato Regional

Map Scale @ A3:



Revision	Author	Verified	Approved	Date

Supporting Growth
NoR W1 - Do Minimum Road Traffic Noise with AUP Zones

229

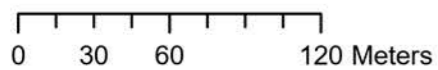
Client: **Supporting Growth**
Project: **North West Package**



Discipline: **GIS**
Drawing No: **SGA-NOR-W1-000**



Map Scale @ A3:



Revision	Author	Verified	Approved	Date

Supporting Growth
NoR W1 - Do Minimum Road Traffic Noise with AUP Zones

230

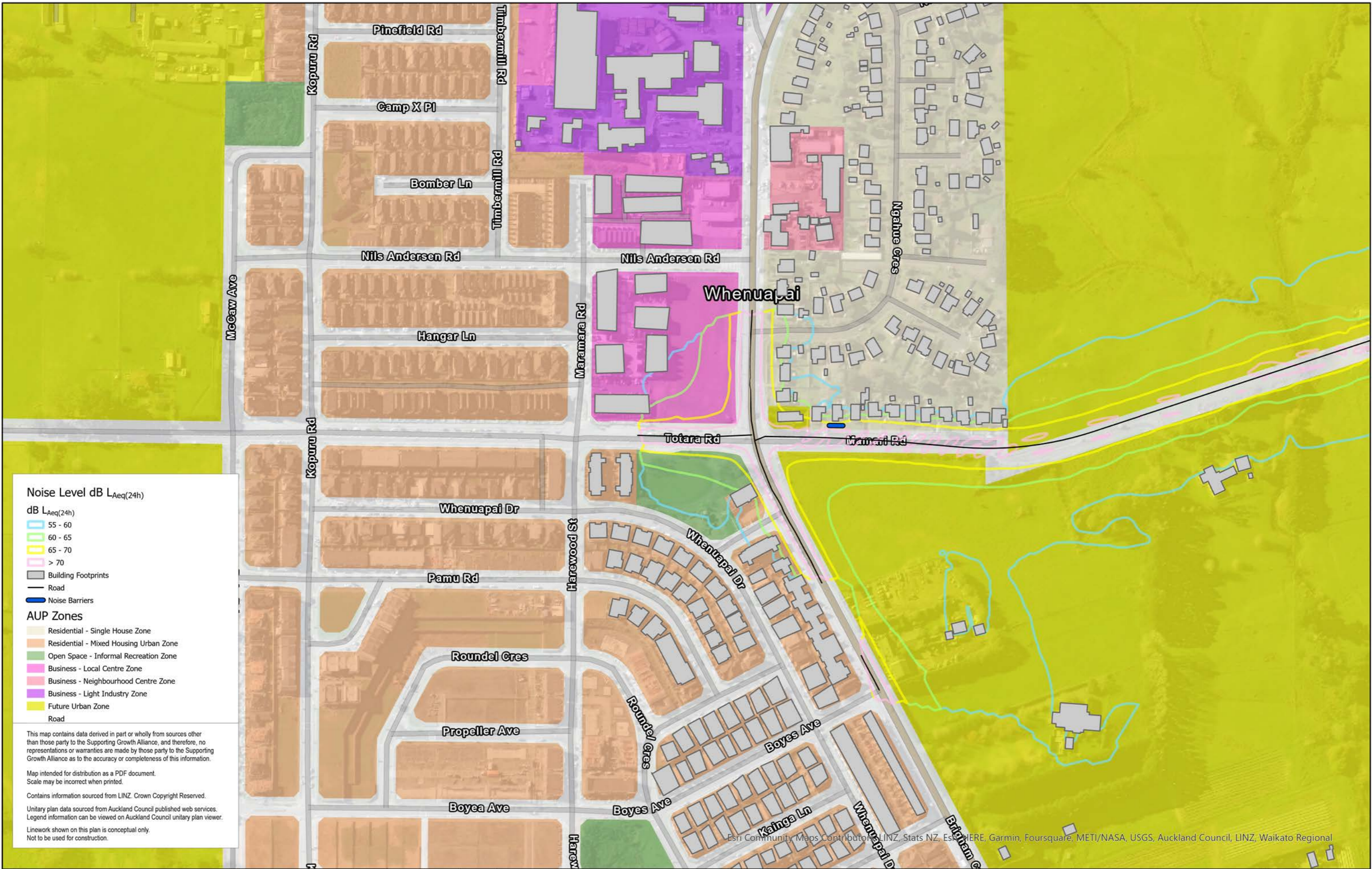
Client: **Supporting Growth**
Project: **North West Package**



Discipline: **GIS**
Drawing No: **SGA-NOR-W1-000**

ATTACHMENT 14

**SUPPORTING GROWTH ALLIANCE
NOISE CONTOURS
NoR W2 – MĀMARI ROAD**



Noise Level dB L_{Aeq}(24h)

- dB L_{Aeq}(24h)**
- 55 - 60
 - 60 - 65
 - 65 - 70
 - > 70
- Building Footprints
 Road
 Noise Barriers

- AUP Zones**
- Residential - Single House Zone
 - Residential - Mixed Housing Urban Zone
 - Open Space - Informal Recreation Zone
 - Business - Local Centre Zone
 - Business - Neighbourhood Centre Zone
 - Business - Light Industry Zone
 - Future Urban Zone
 - Road

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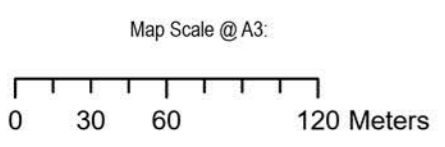
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Revision	Author	Verified	Approved	Date

Supporting Growth
 NoR W2 - Mitigated Road Traffic Noise with AUP Zones

233

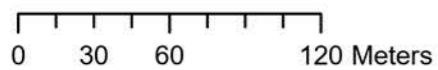
Client: Supporting Growth
 Project: North West Package



Discipline: GIS
 Drawing No: SGA-NOR-W2-000



Map Scale @ A3:



Revision	Author	Verified	Approved	Date

Title:

Supporting Growth
NoR W2 - Mitigated Road Traffic Noise with AUP Zones

234

Client:

Supporting Growth

Project:

North West Package



Discipline:

GIS

Drawing No:

SGA-NOR-W2-000



Noise Level dB LAeq(24h)

- dB LAeq(24h)**
- 55 - 60
 - 60 - 65
 - 65 - 70
 - > 70

- Building Footprints
- Road
- Noise Barriers

- AUP Zones**
- Open Space - Informal Recreation Zone
 - Business - General Business Zone
 - Future Urban Zone
 - Strategic Transport Corridor Zone
 - Road

This map contains data derived in part or wholly from sources other than those party to the Supporting Growth Alliance, and therefore, no representations or warranties are made by those party to the Supporting Growth Alliance as to the accuracy or completeness of this information.

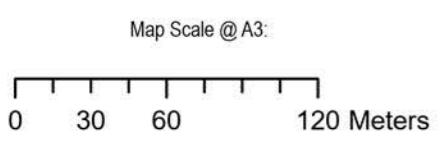
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Revision	Author	Verified	Approved	Date

Supporting Growth
NoR W2 - Mitigated Road Traffic Noise with AUP Zones

235

Client: **Supporting Growth**
Project: **North West Package**



Discipline: **GIS**
Drawing No: **SGA-NOR-W2-000**

ATTACHMENT 15

**SUPPORTING GROWTH ALLIANCE
NOISE CONTOURS
NoR W3 – BRIGHAM CREEK ROAD**



Noise Level dB $L_{Aeq}(24h)$

dB $L_{Aeq}(24h)$

- 55 - 60
- 60 - 65
- 65 - 70
- > 70

— Project Road

■ Building Footprints

AUP Zones

- Residential - Single House Zone
- Residential - Mixed Housing Urban Zone
- Open Space - Conservation Zone
- Open Space - Informal Recreation Zone
- Business - Local Centre Zone
- Business - Neighbourhood Centre Zone
- Future Urban Zone
- Coastal - General Coastal Marine Zone [rcp]
- Coastal - Coastal Transition Zone
- Water
- Road

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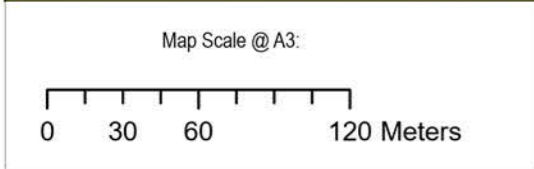
Map intended for distribution as a PDF document.
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Revision	Author	Verified	Approved	Date

Supporting Growth
 NoR W3 - Mitigated Road Traffic Noise with AUP Zones

239

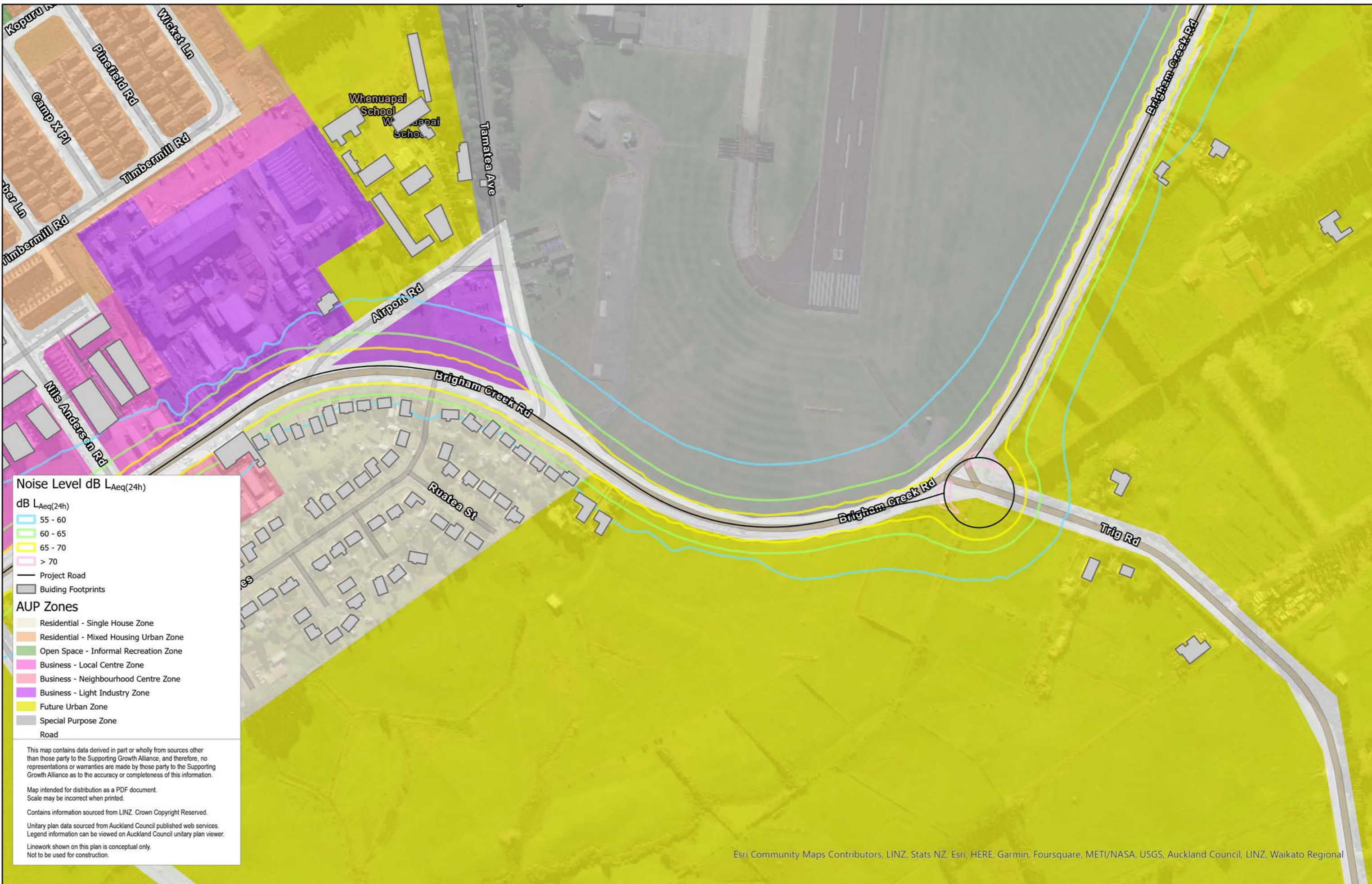
Client: **Supporting Growth**

Project: **North West Package**



Discipline: **GIS**

Drawing No: **SGA-NOR-W3-000**



Noise Level dB $L_{Aeq}(24h)$

dB $L_{Aeq}(24h)$

- 55 - 60
- 60 - 65
- 65 - 70
- > 70

— Project Road

■ Building Footprints

AUP Zones

- Residential - Single House Zone
- Residential - Mixed Housing Urban Zone
- Open Space - Informal Recreation Zone
- Business - Local Centre Zone
- Business - Neighbourhood Centre Zone
- Business - Light Industry Zone
- Future Urban Zone
- Special Purpose Zone
- Road

This map contains data derived in part or wholly from sources other than those party to the Supporting Growth Alliance, and therefore, no representations or warranties are made by those party to the Supporting Growth Alliance as to the accuracy or completeness of this information.

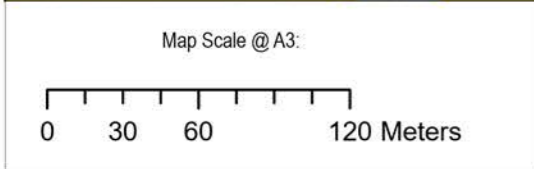
Map intended for distribution as a PDF document.
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Legend information can be viewed on Auckland Council unitary plan viewer.

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Revision	Author	Verified	Approved	Date

Supporting Growth

NoR W3 - Mitigated Road Traffic Noise with AUP Zones

240

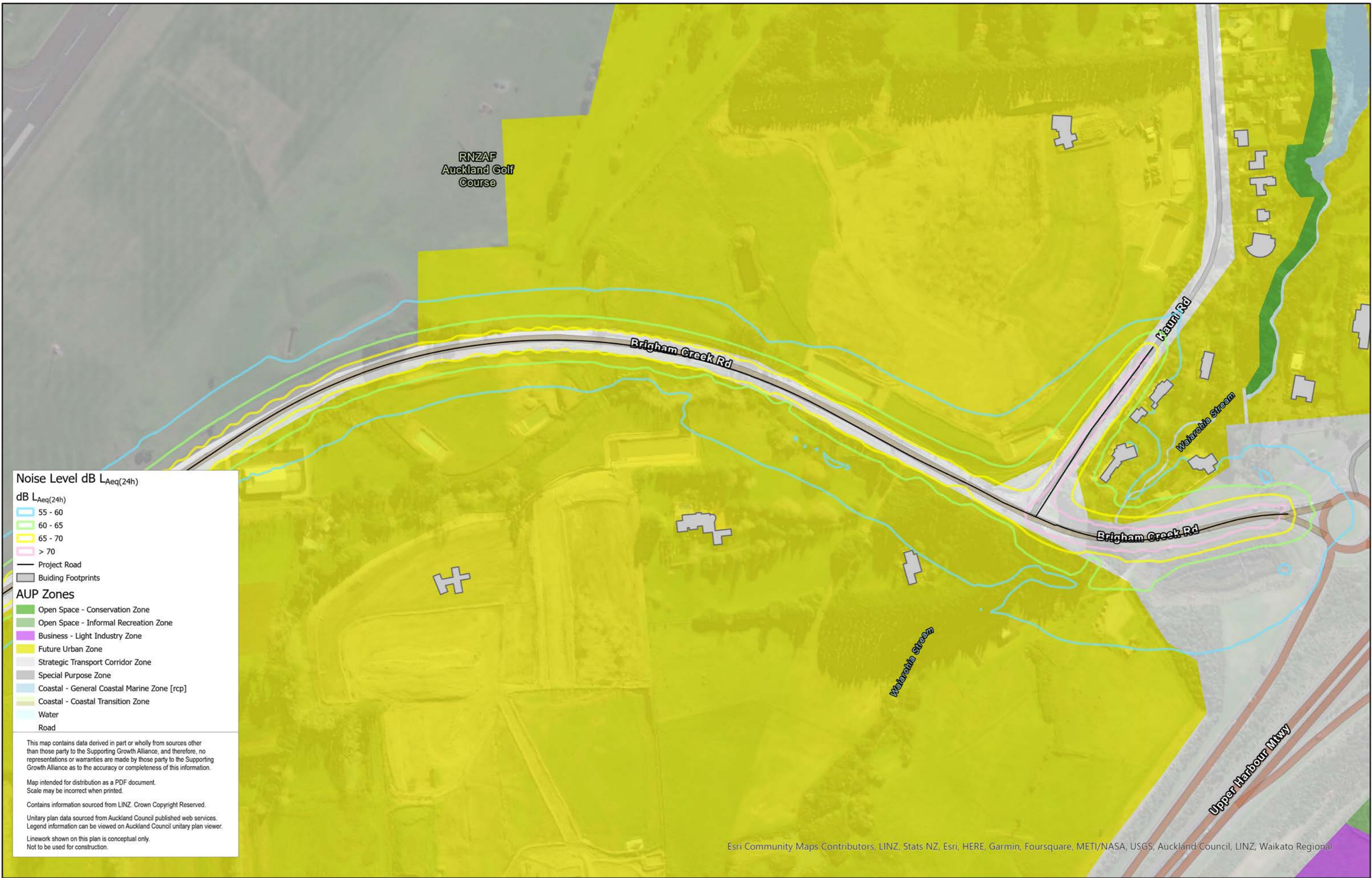
Client: **Supporting Growth**

Project: **North West Package**



Discipline: **GIS**

Drawing No: **SGA-NOR-W3-000**



Noise Level dB $L_{Aeq}(24h)$

dB $L_{Aeq}(24h)$

- 55 - 60
- 60 - 65
- 65 - 70
- > 70

- Project Road
- Building Footprints

AUP Zones

- Open Space - Conservation Zone
- Open Space - Informal Recreation Zone
- Business - Light Industry Zone
- Future Urban Zone
- Strategic Transport Corridor Zone
- Special Purpose Zone
- Coastal - General Coastal Marine Zone [rcp]
- Coastal - Coastal Transition Zone
- Water
- Road

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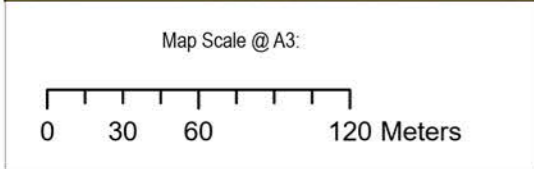
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Revision	Author	Verified	Approved	Date

Supporting Growth
 NoR W3 - Mitigated Road Traffic Noise with AUP Zones

241

Client: **Supporting Growth**

Project: **North West Package**

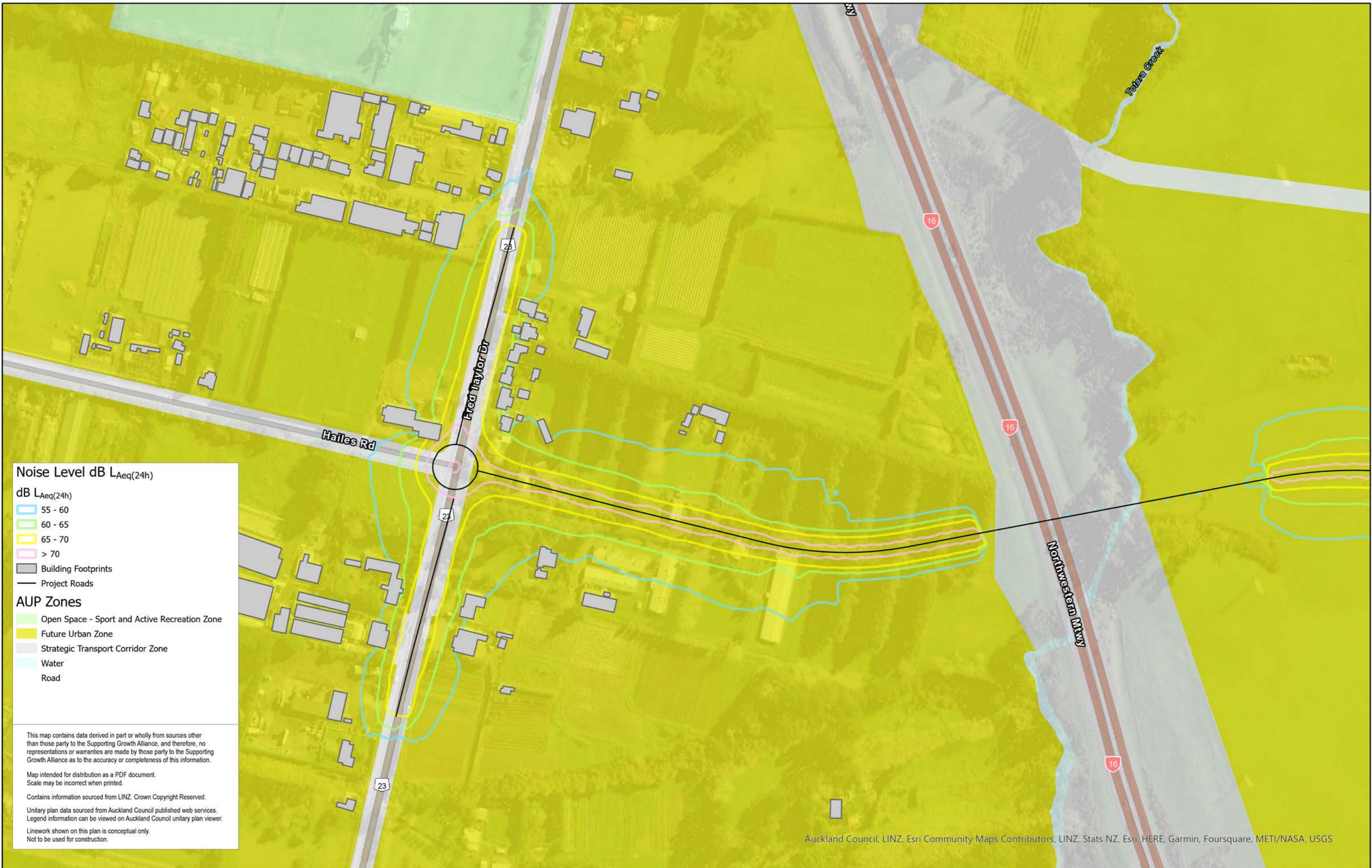


Discipline: **GIS**

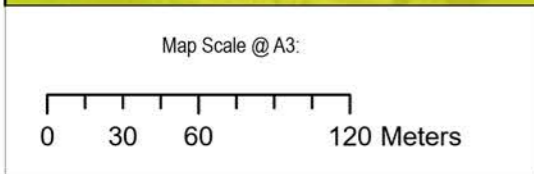
Drawing No: **SGA-NOR-W3-000**

ATTACHMENT 16

**SUPPORTING GROWTH ALLIANCE
NOISE CONTOURS
NoR W4 – SPEDDING ROAD**



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Revision	Author	Verified	Approved	Date

Title: **Supporting Growth**
NoR W4 - Mitigated Road Traffic Noise with AUP Zones

245

Client: **Supporting Growth**

Project: **North West Package**



Discipline: **GIS**

Drawing No: **SGA-NOR-W4-000**



Noise Level dB LAeq(24h)

dB LAeq(24h)

- 55 - 60
- 60 - 65
- 65 - 70
- > 70

- Building Footprints
- Project Roads

AUP Zones

- Future Urban Zone
- Strategic Transport Corridor Zone
- Special Purpose Zone
- Water
- Road

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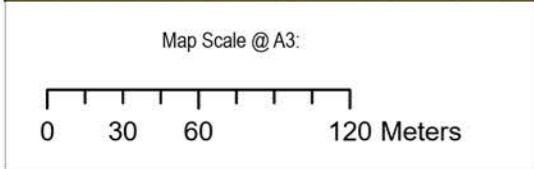
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Revision	Author	Verified	Approved	Date

Supporting Growth
 NoR W4 - Mitigated Road Traffic Noise with AUP Zones

246

Client: **Supporting Growth**

Project: **North West Package**

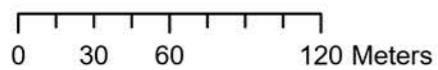


Discipline: **GIS**

Drawing No: **SGA-NOR-W4-000**



Map Scale @ A3:



Revision	Author	Verified	Approved	Date

Title: **Supporting Growth**
 NoR W4 - Mitigated Road Traffic Noise with AUP Zones

247

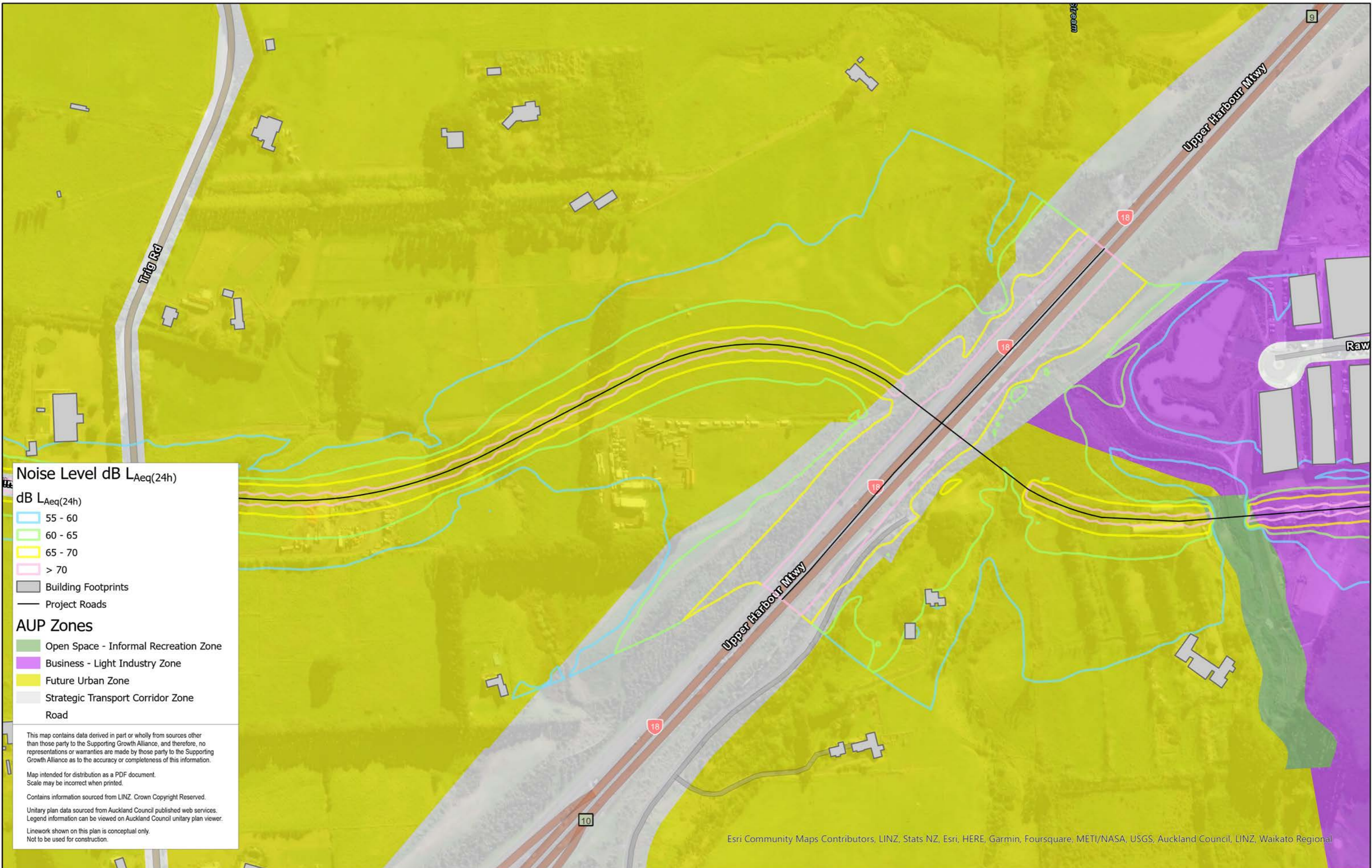
Client: **Supporting Growth**

Project: **North West Package**



Discipline: **GIS**

Drawing No: **SGA-NOR-W4-000**



Noise Level dB LAeq(24h)

dB LAeq(24h)

- 55 - 60
- 60 - 65
- 65 - 70
- > 70

- Building Footprints
- Project Roads

AUP Zones

- Open Space - Informal Recreation Zone
- Business - Light Industry Zone
- Future Urban Zone
- Strategic Transport Corridor Zone

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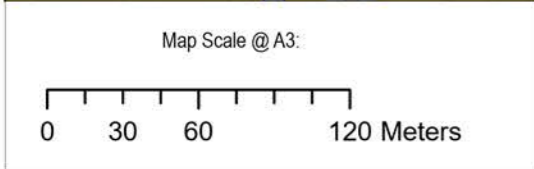
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Revision	Author	Verified	Approved	Date

Supporting Growth

NoR W4 - Mitigated Road Traffic Noise with AUP Zones

248

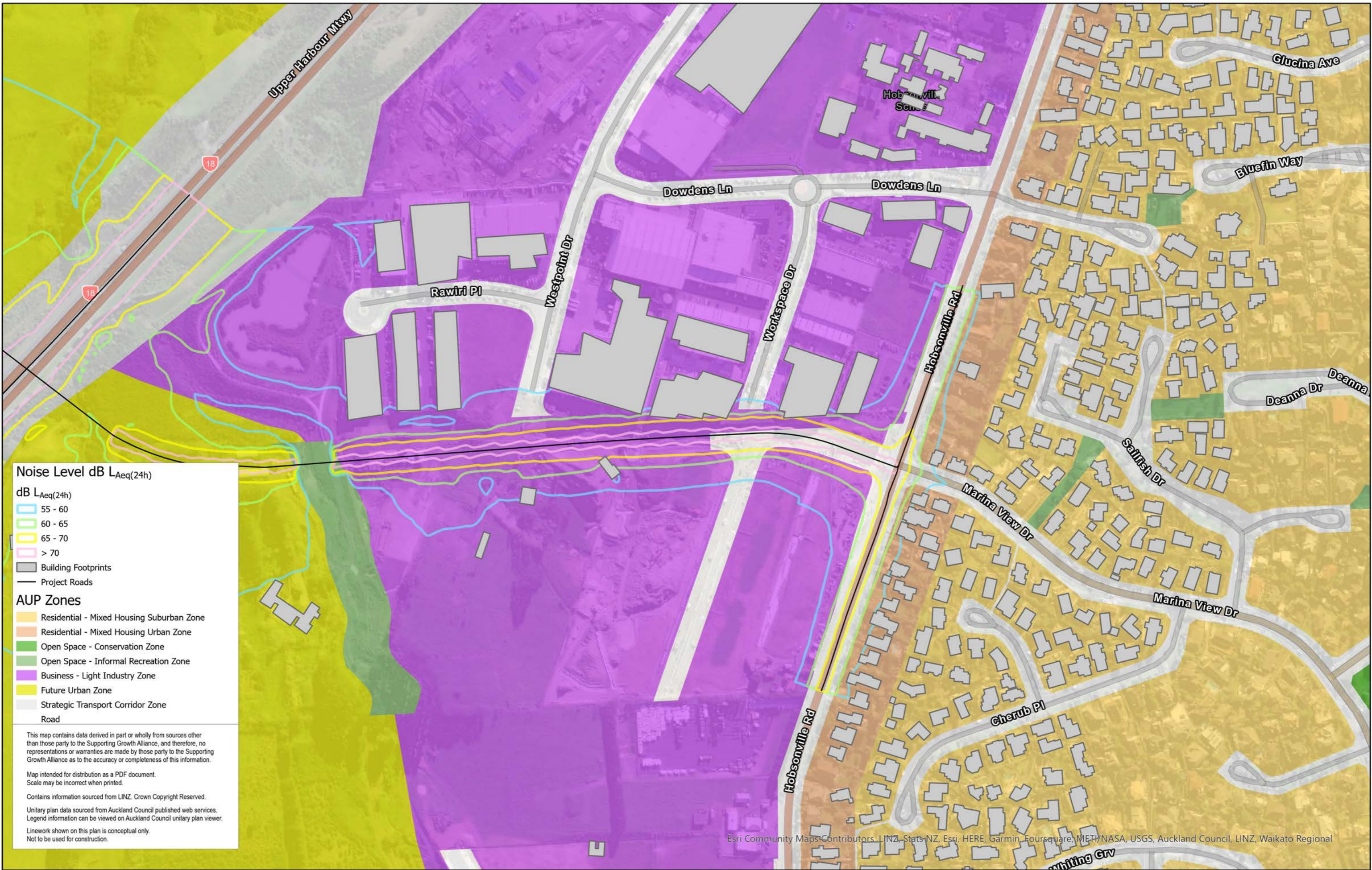
Client: **Supporting Growth**

Project: **North West Package**



Discipline: **GIS**

Drawing No: **SGA-NOR-W4-000**



Noise Level dB $L_{Aeq}(24h)$

dB $L_{Aeq}(24h)$

- 55 - 60
- 60 - 65
- 65 - 70
- > 70

- Building Footprints
- Project Roads

AUP Zones

- Residential - Mixed Housing Suburban Zone
- Residential - Mixed Housing Urban Zone
- Open Space - Conservation Zone
- Open Space - Informal Recreation Zone
- Business - Light Industry Zone
- Future Urban Zone
- Strategic Transport Corridor Zone

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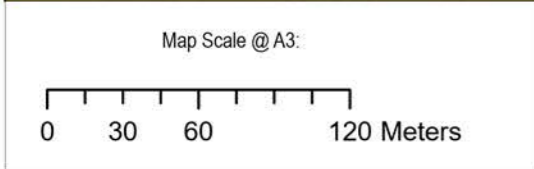
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Revision	Author	Verified	Approved	Date

Supporting Growth

NoR W4 - Mitigated Road Traffic Noise with AUP Zones

249

Client: Supporting Growth

Project: North West Package

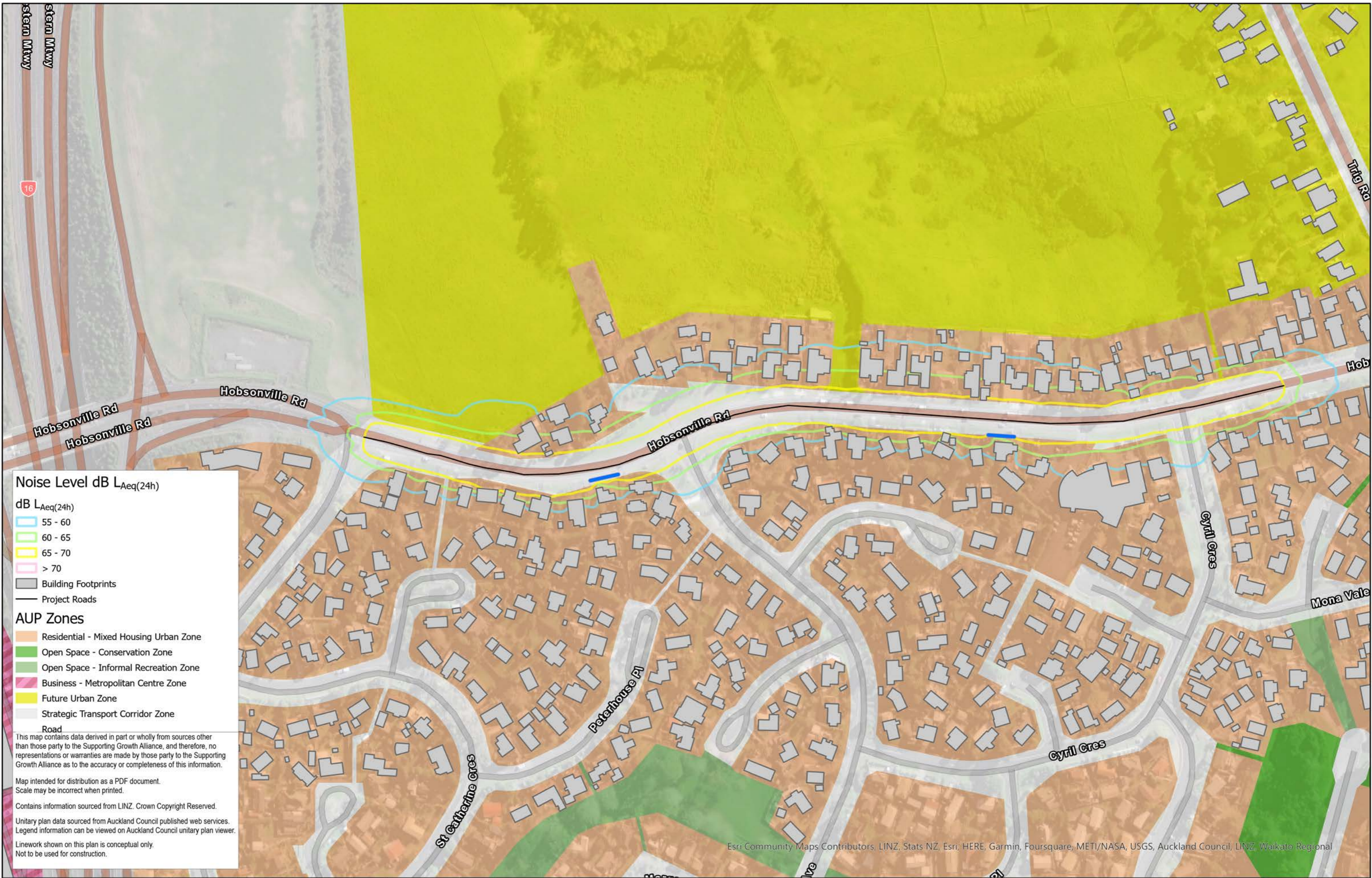


Discipline: GIS

Drawing No: SGA-NOR-W4-000

ATTACHMENT 17

**SUPPORTING GROWTH ALLIANCE
NOISE CONTOURS
NoR W5 – HOBSONVILLE ROAD**



Noise Level dB $L_{Aeq}(24h)$

dB $L_{Aeq}(24h)$

- 55 - 60
- 60 - 65
- 65 - 70
- > 70

- Building Footprints
- Project Roads

AUP Zones

- Residential - Mixed Housing Urban Zone
- Open Space - Conservation Zone
- Open Space - Informal Recreation Zone
- Business - Metropolitan Centre Zone
- Future Urban Zone
- Strategic Transport Corridor Zone

Road

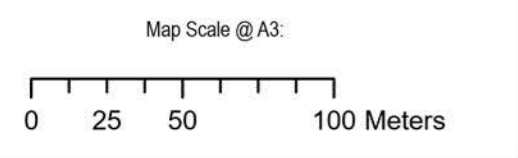
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Revision	Author	Verified	Approved	Date

Supporting Growth

NoR W5 - Mitigated Road Traffic Noise with AUP Zones

253

Client: **Supporting Growth**

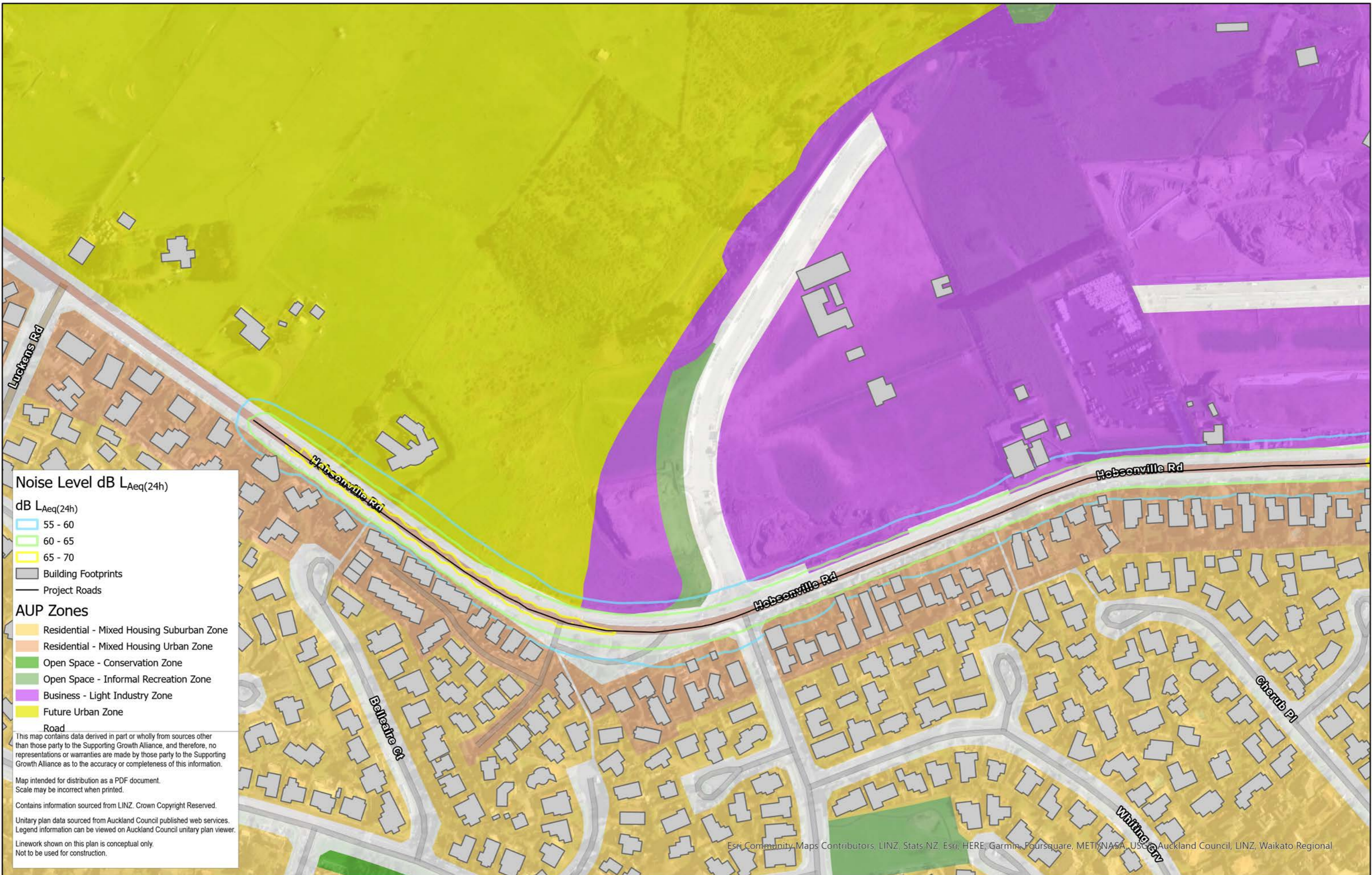
Project: **North West Package**



Discipline: **GIS**

Drawing No: **SGA-NOR-W5-000**

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Noise Level dB LAeq(24h)

dB LAeq(24h)

- 55 - 60
- 60 - 65
- 65 - 70

- Building Footprints
- Project Roads

AUP Zones

- Residential - Mixed Housing Suburban Zone
- Residential - Mixed Housing Urban Zone
- Open Space - Conservation Zone
- Open Space - Informal Recreation Zone
- Business - Light Industry Zone
- Future Urban Zone

Road

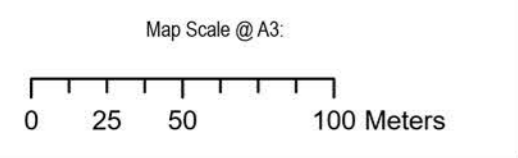
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Revision	Author	Verified	Approved	Date

Supporting Growth

NoR W5 - Mitigated Road Traffic Noise with AUP Zones

254

Client: **Supporting Growth**

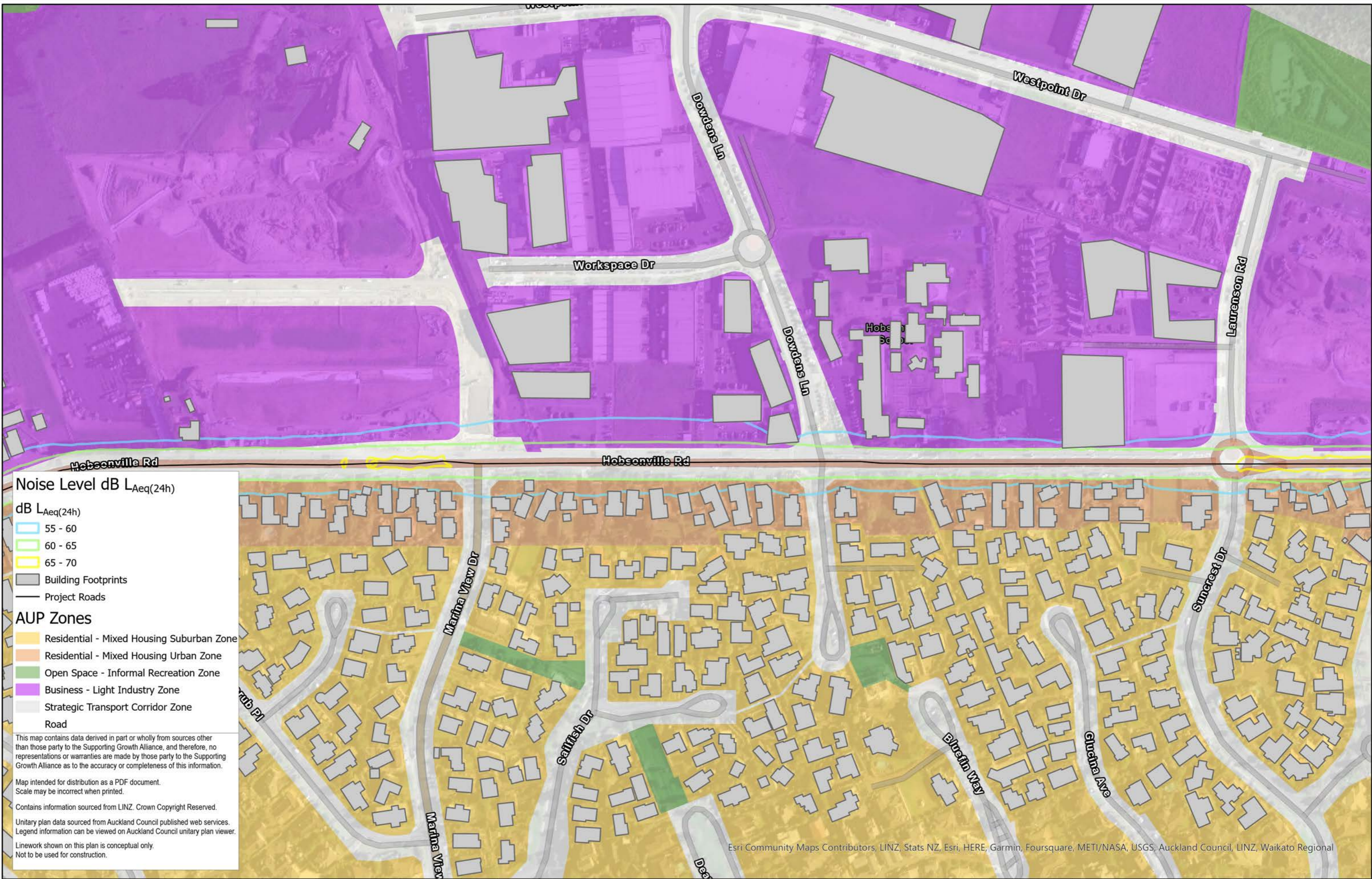
Project: **North West Package**



Discipline: **GIS**

Drawing No: **SGA-NOR-W5-000**

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Noise Level dB L_{Aeq}(24h)

dB L_{Aeq}(24h)

- 55 - 60
- 60 - 65
- 65 - 70

- Building Footprints
- Project Roads

AUP Zones

- Residential - Mixed Housing Suburban Zone
- Residential - Mixed Housing Urban Zone
- Open Space - Informal Recreation Zone
- Business - Light Industry Zone
- Strategic Transport Corridor Zone

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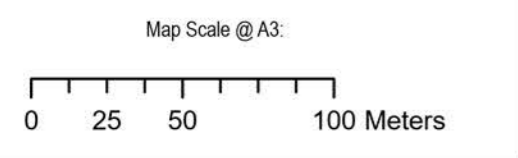
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Revision	Author	Verified	Approved	Date

Supporting Growth

NoR W5 - Mitigated Road Traffic Noise with AUP Zones

255

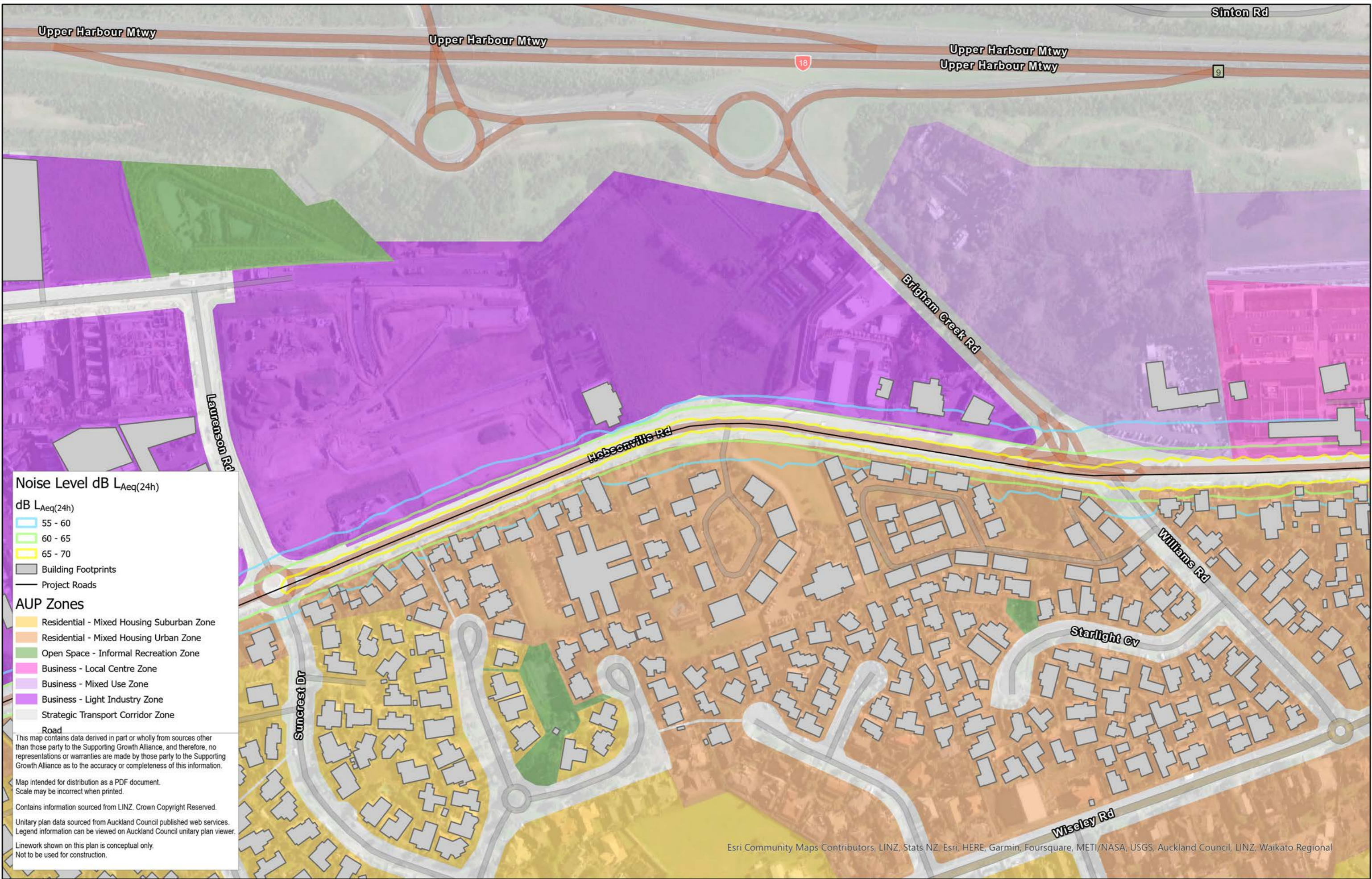
Client: **Supporting Growth**

Project: **North West Package**



Discipline: **GIS**

Drawing No: **SGA-NOR-W5-000**



Noise Level dB $L_{Aeq}(24h)$

dB $L_{Aeq}(24h)$

- 55 - 60
- 60 - 65
- 65 - 70

- Building Footprints
- Project Roads

AUP Zones

- Residential - Mixed Housing Suburban Zone
- Residential - Mixed Housing Urban Zone
- Open Space - Informal Recreation Zone
- Business - Local Centre Zone
- Business - Mixed Use Zone
- Business - Light Industry Zone
- Strategic Transport Corridor Zone

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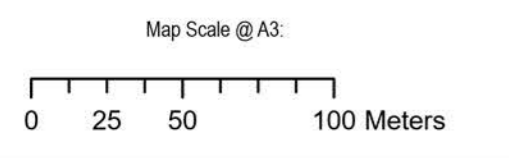
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Revision	Author	Verified	Approved	Date

Supporting Growth

NoR W5 - Mitigated Road Traffic Noise with AUP Zones

256

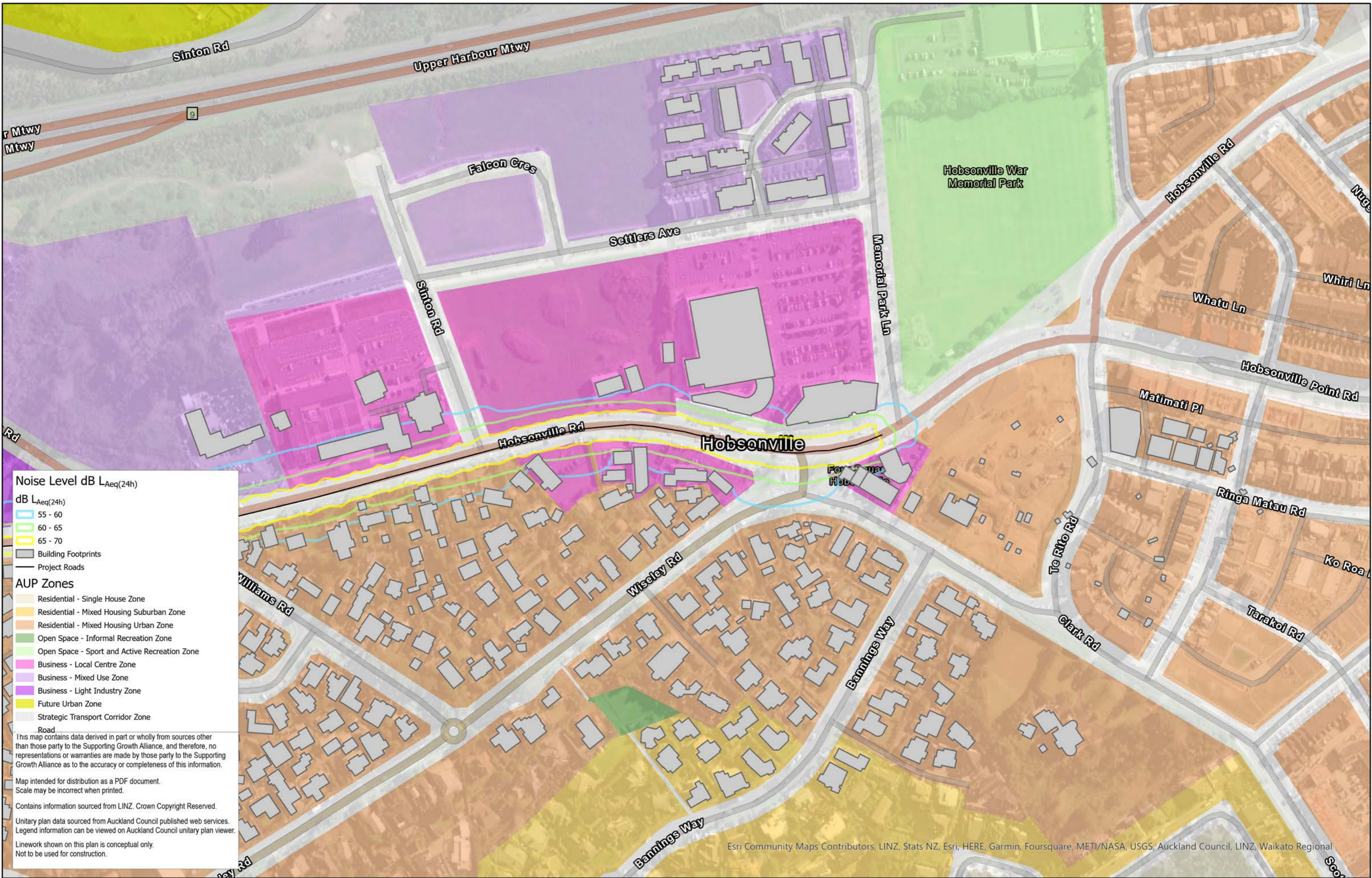
Client: **Supporting Growth**

Project: **North West Package**



Discipline: **GIS**

Drawing No: **SGA-NOR-W5-000**



Noise Level dB $L_{Aeq(24h)}$

dB $L_{Aeq(24h)}$

- 55 - 60
- 60 - 65
- 65 - 70

■ Building Footprints
— Project Roads

AUP Zones

- Residential - Single House Zone
- Residential - Mixed Housing Suburban Zone
- Residential - Mixed Housing Urban Zone
- Open Space - Informal Recreation Zone
- Open Space - Sport and Active Recreation Zone
- Business - Local Centre Zone
- Business - Mixed Use Zone
- Business - Light Industry Zone
- Future Urban Zone
- Strategic Transport Corridor Zone

Road

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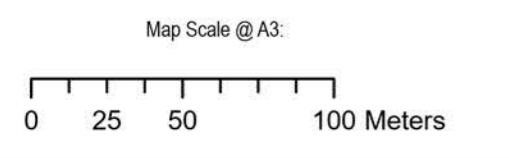
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Revision	Author	Verified	Approved	Date

Supporting Growth
NoR W5 - Mitigated Road Traffic Noise with AUP Zones

257

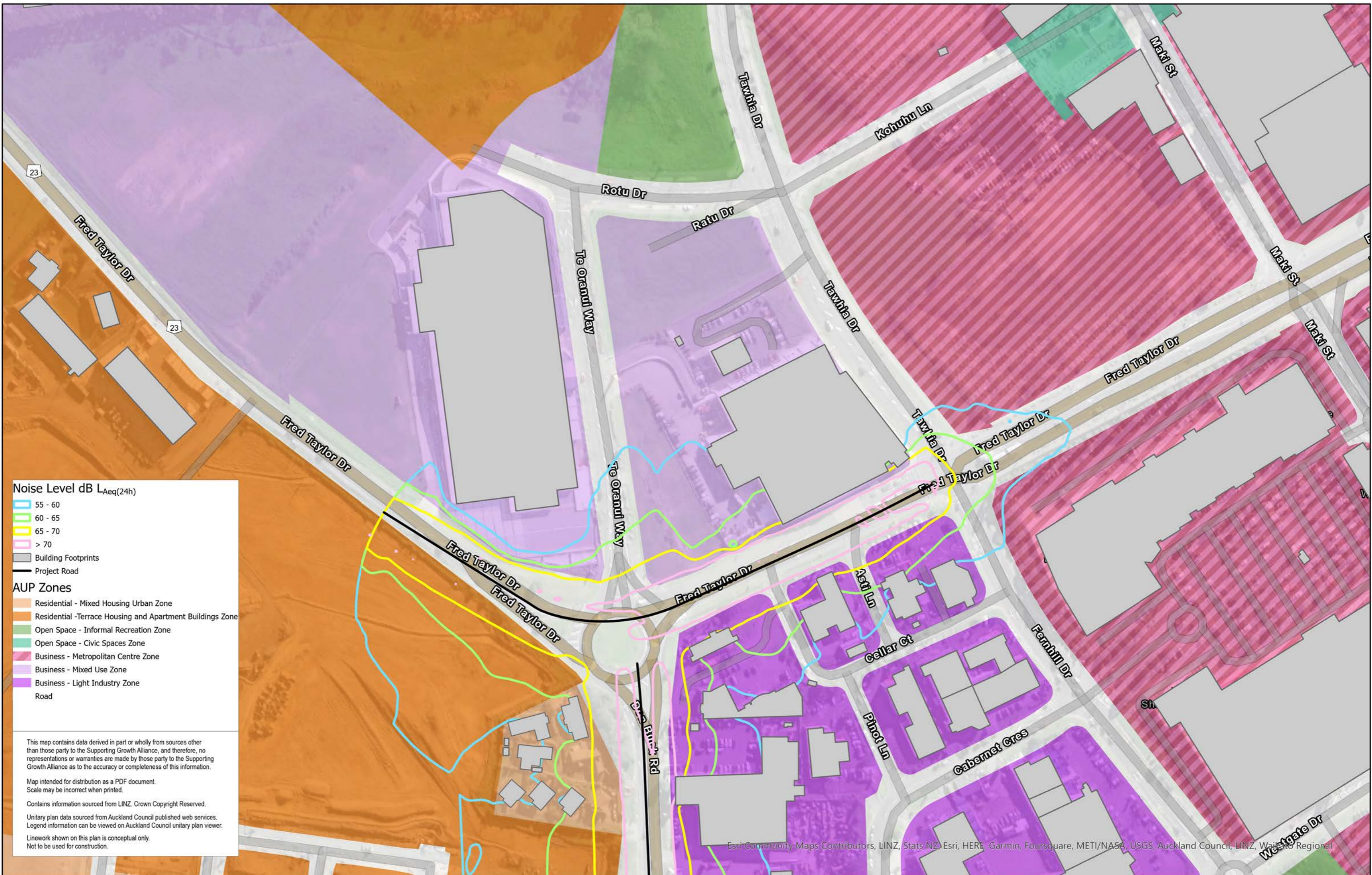
Client: Supporting Growth
Project: North West Package



Discipline: GIS
Drawing No: SGA-NOR-W5-000

ATTACHMENT 18

**SUPPORTING GROWTH ALLIANCE
NOISE CONTOURS
NoR RE1 – DON BUCK ROAD**



Noise Level dB LAeq(24h)

- 55 - 60
- 60 - 65
- 65 - 70
- > 70

AUP Zones

- Residential - Mixed Housing Urban Zone
- Residential - Terrace Housing and Apartment Buildings Zone
- Open Space - Informal Recreation Zone
- Open Space - Civic Spaces Zone
- Business - Metropolitan Centre Zone
- Business - Mixed Use Zone
- Business - Light Industry Zone
- Road

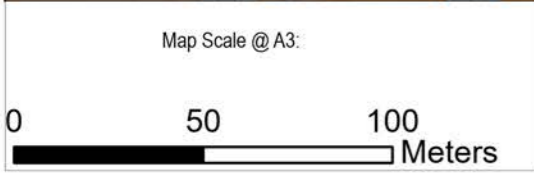
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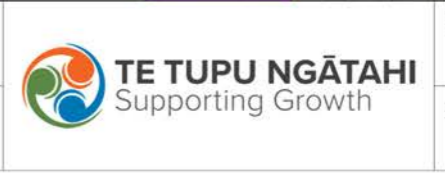
Supporting Growth

NoR R1 - Mitigated Road Traffic Noise with AUP Zones

261

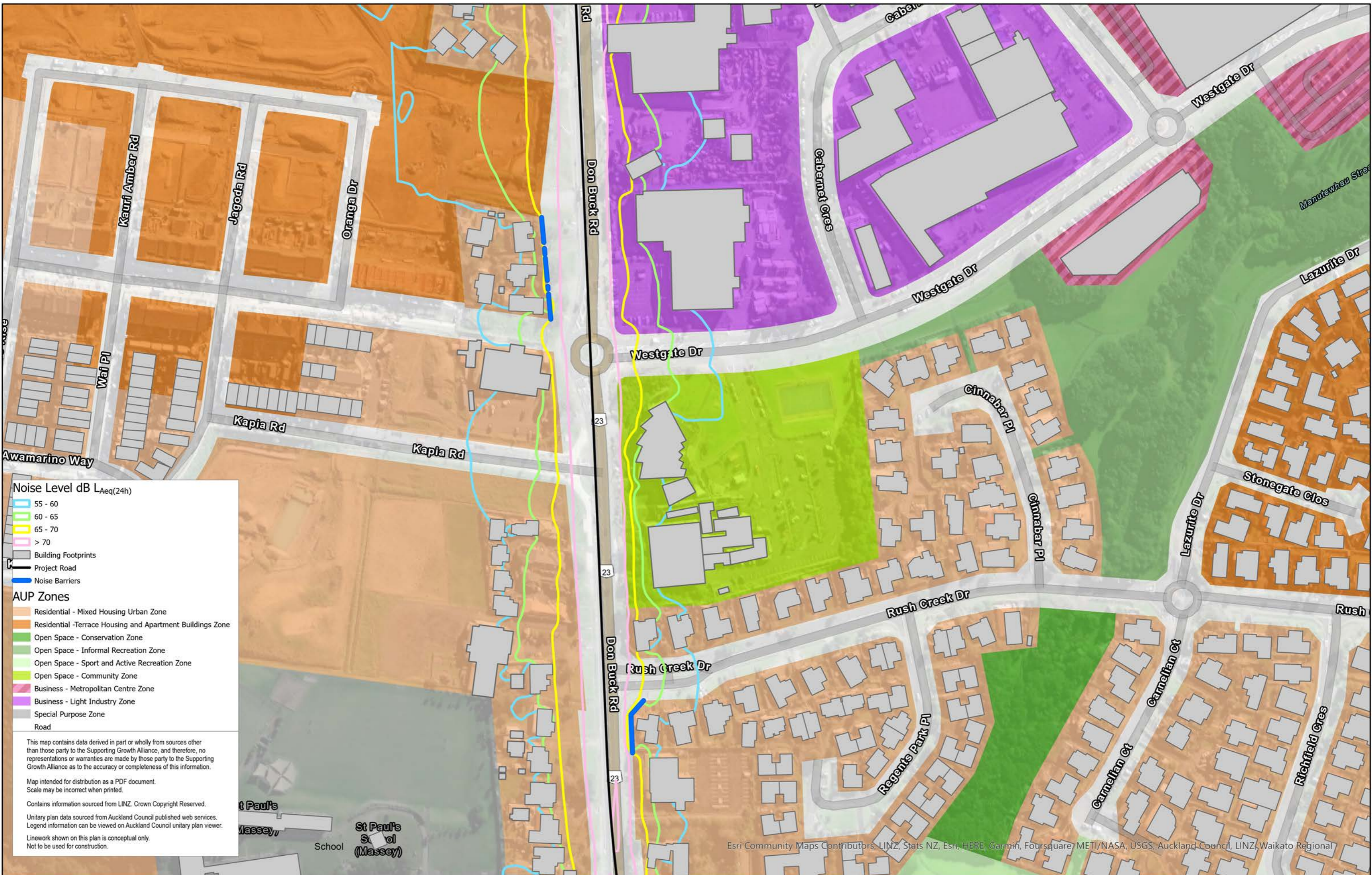
Client: Supporting Growth

Project: North West Package



Discipline: GIS

Drawing No:



Noise Level dB L_{Aeq}(24h)

- 55 - 60
- 60 - 65
- 65 - 70
- > 70

AUP Zones

- Residential - Mixed Housing Urban Zone
- Residential - Terrace Housing and Apartment Buildings Zone
- Open Space - Conservation Zone
- Open Space - Informal Recreation Zone
- Open Space - Sport and Active Recreation Zone
- Open Space - Community Zone
- Business - Metropolitan Centre Zone
- Business - Light Industry Zone
- Special Purpose Zone
- Road

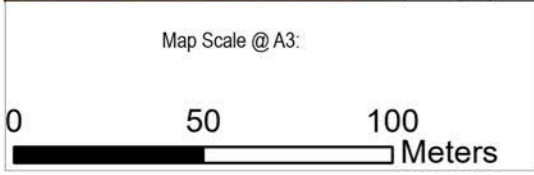
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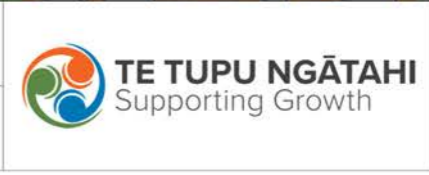
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Revision	Author	Verified	Approved	Date
1	DA	SJ	CD	10/02/23

Supporting Growth
 NoR R1 - Mitigated Road Traffic Noise with AUP Zones

Client: Supporting Growth
 Project: North West Package



Discipline: GIS
 Drawing No:

Esri Community Maps Contributors, LINZ, Stats NZ, Esri, HERE, Garmin, Foursquare, METI/NASA, USGS, Auckland Council, LINZ, Waikato Regional



- Noise Level dB $L_{Aeq}(24h)$**
- 55 - 60
 - 60 - 65
 - 65 - 70
 - > 70
- AUP Zones**
- Residential - Mixed Housing Suburban Zone
 - Residential - Mixed Housing Urban Zone
 - Open Space - Conservation Zone
 - Open Space - Informal Recreation Zone
 - Open Space - Sport and Active Recreation Zone
 - Special Purpose Zone
 - Road

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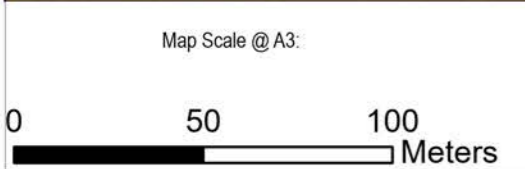
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Revision	Author	Verified	Approved	Date	Title
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Supporting Growth
 NoR R1 - Mitigated Road Traffic Noise with AUP Zones

263

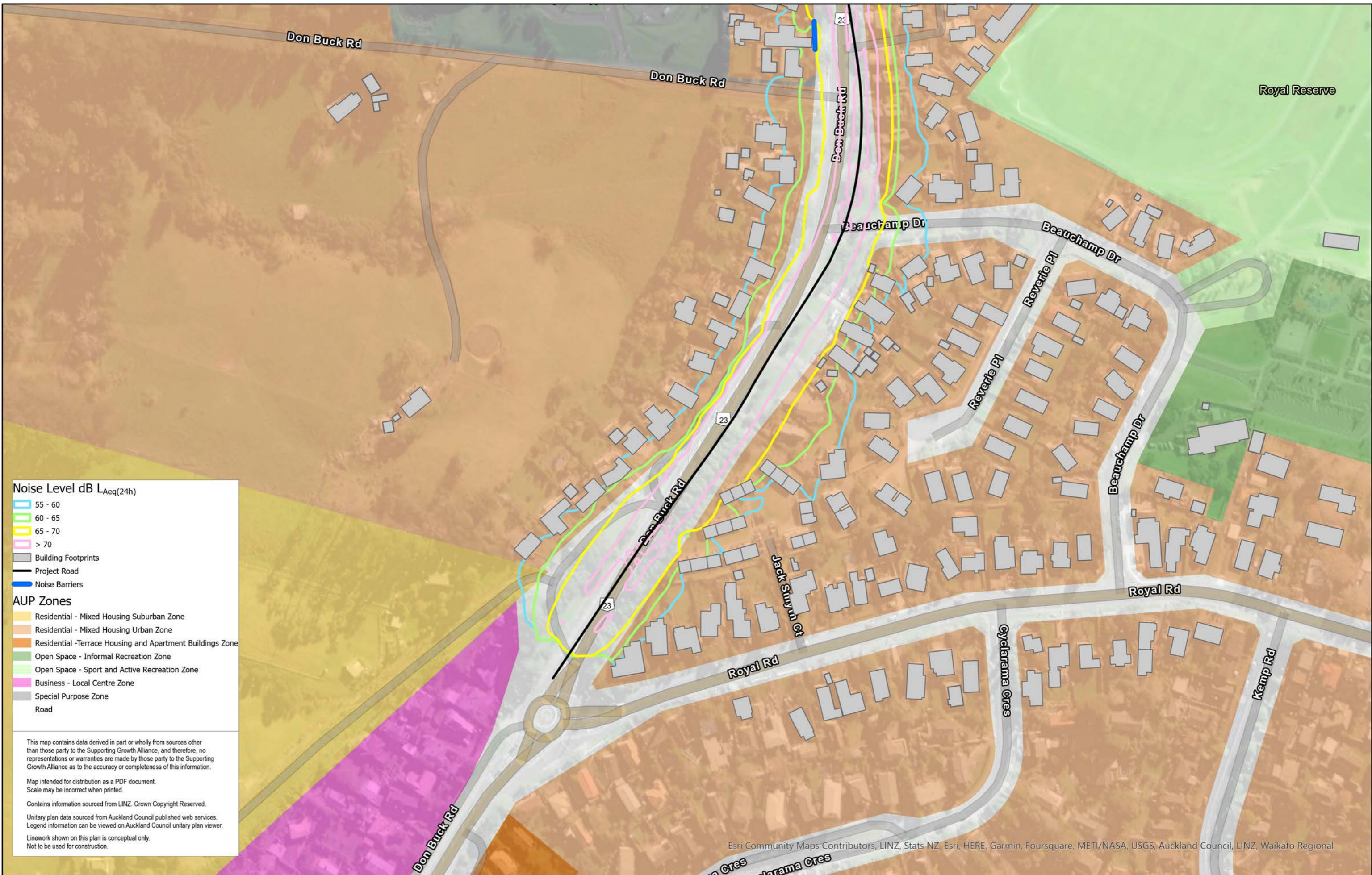
Client: **Supporting Growth**

Project: **North West Package**

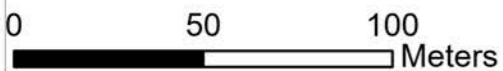


Discipline: **GIS**

Drawing No:



Map Scale @ A3:



Revision	Author	Verified	Approved	Date
1	DA	SJ	CD	10/02/23

Supporting Growth
 NoR R1 - Mitigated Road Traffic Noise with AUP Zones

264

Client: Supporting Growth
 Project: North West Package



Discipline: GIS
 Drawing No:

ATTACHMENT 19

**SUPPORTING GROWTH ALLIANCE
NOISE CONTOURS
NoR RE2 – FRED TAYLOR DRIVE**



Noise Level dB $L_{Aeq}(24h)$

- 55 - 60
- 60 - 65
- 65 - 70

- Building Footprints
- Project Road

AUP Zones

- Business - Light Industry Zone
- Future Urban Zone
- Strategic Transport Corridor Zone Road

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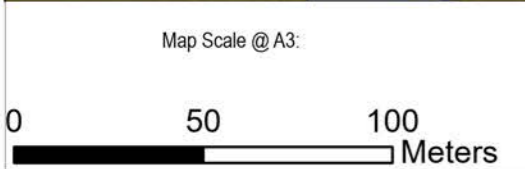
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Revision	Author	Verified	Approved	Date
1	DA	SJ	CD	10/02/23

Supporting Growth
 NoR R2 - Mitigated Road Traffic Noise with AUP Plan

267

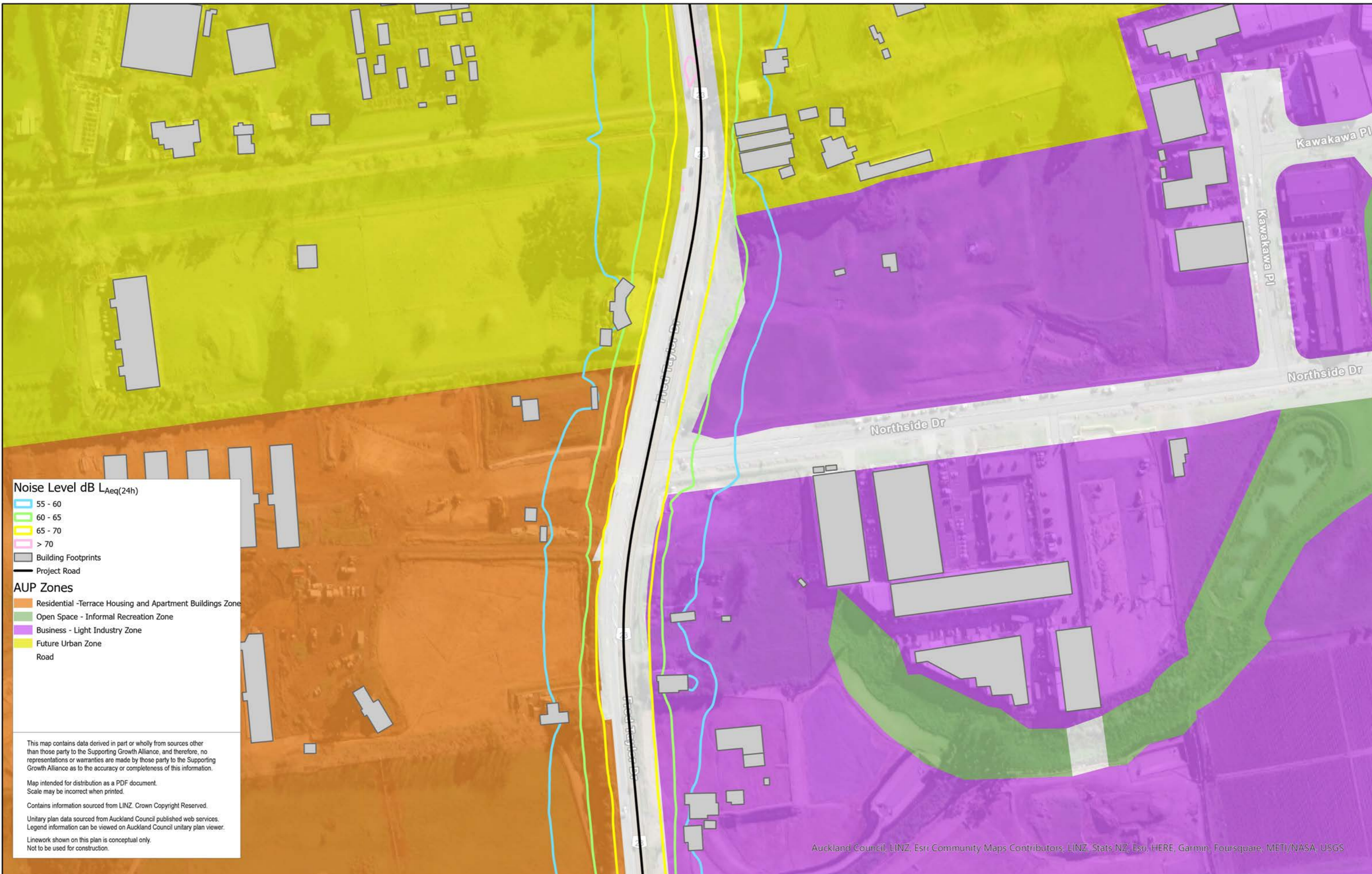
Client: **Supporting Growth**

Project: **North West Package**



Discipline: **GIS**

Drawing No:



Noise Level dB $L_{Aeq}(24h)$

- 55 - 60
- 60 - 65
- 65 - 70
- > 70

AUP Zones

- Residential - Terrace Housing and Apartment Buildings Zone
- Open Space - Informal Recreation Zone
- Business - Light Industry Zone
- Future Urban Zone
- Road

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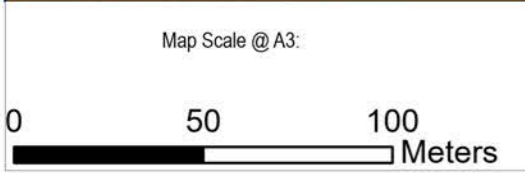
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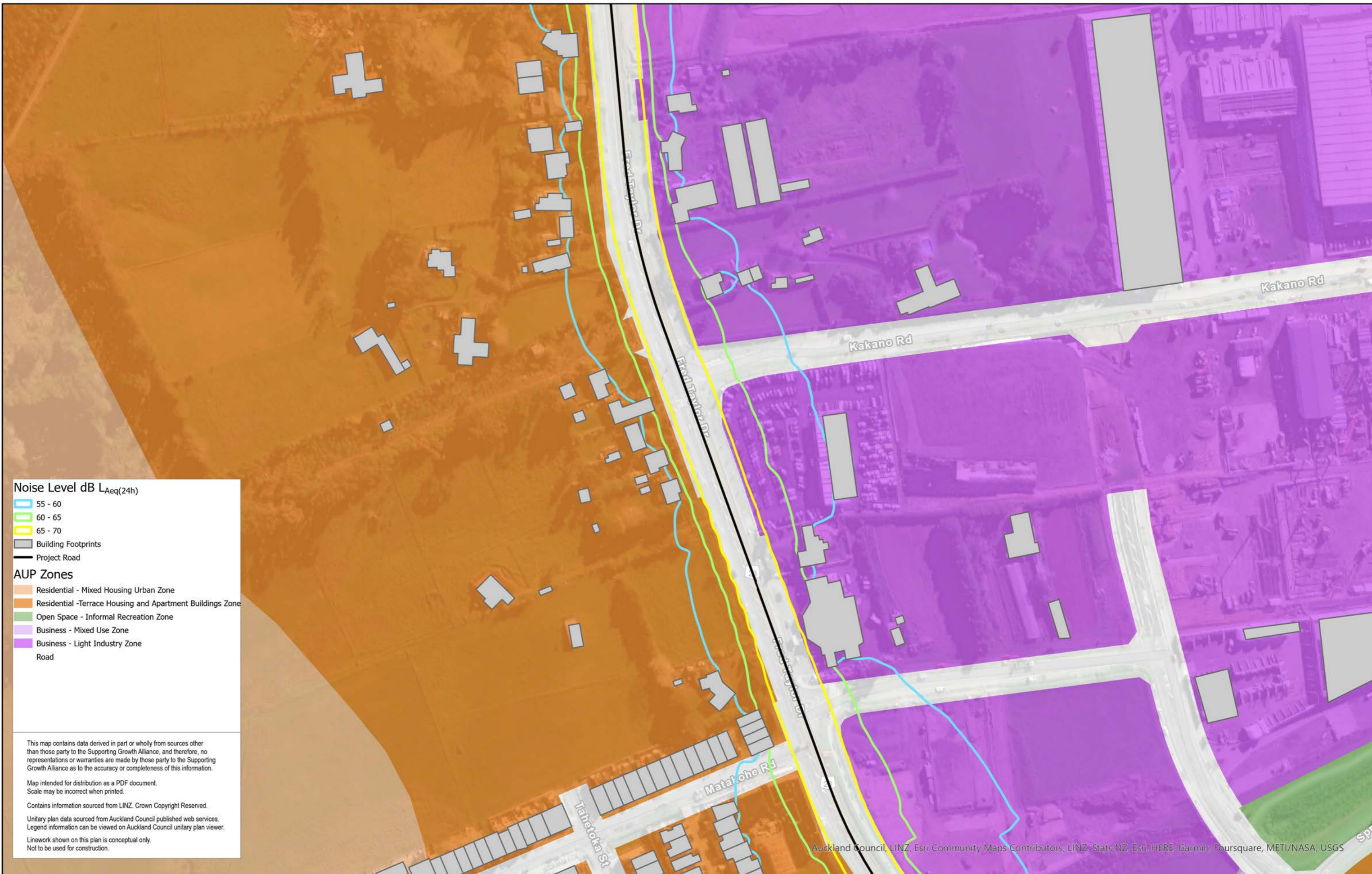
Revision	Author	Verified	Approved	Date
1	DA	SJ	CD	10/02/23

Supporting Growth
 NoR R2 - Mitigated Road Traffic Noise with AUP Plan
 268

Client: **Supporting Growth**
 Project: **North West Package**



Discipline: **GIS**
 Drawing No:



Noise Level dB $L_{Aeq}(24h)$

- 55 - 60
- 60 - 65
- 65 - 70

AUP Zones

- Residential - Mixed Housing Urban Zone
- Residential - Terrace Housing and Apartment Buildings Zone
- Open Space - Informal Recreation Zone
- Business - Mixed Use Zone
- Business - Light Industry Zone

Other Symbols

- Building Footprints
- Project Road

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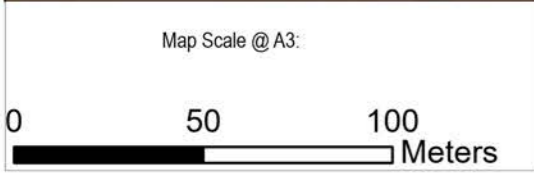
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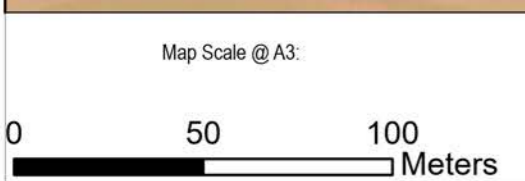
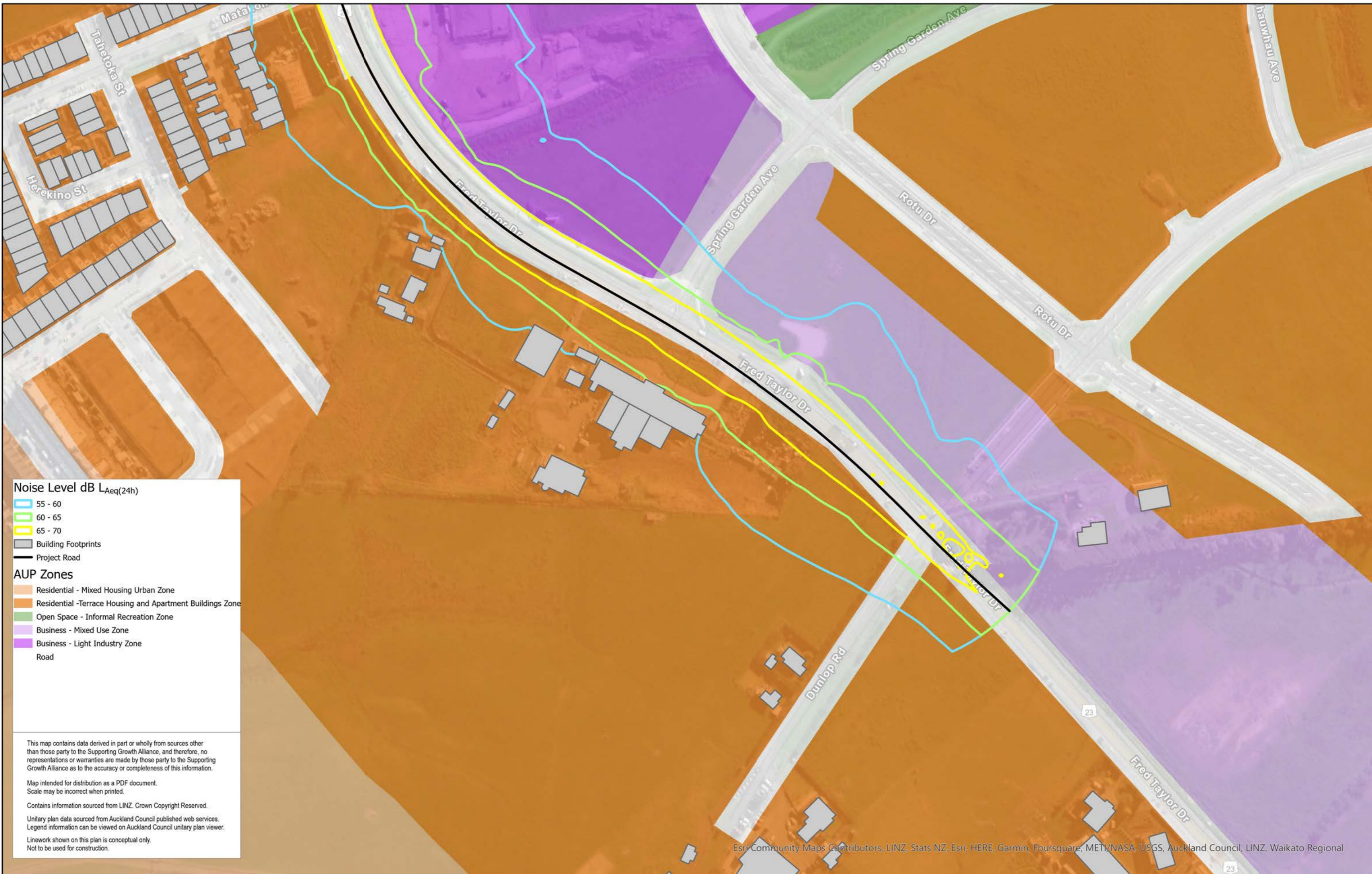
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1	DA	SJ	CD	10/02/23

Supporting Growth
 NoR R2 - Mitigated Road Traffic Noise with AUP Plan
 269

Client: **Supporting Growth**
 Project: **North West Package**



Discipline: **GIS**
 Drawing No:



Revision	Author	Verified	Approved	Date
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Supporting Growth
 NoR R2 - Mitigated Road Traffic Noise with AUP Plan
 270

Client: **Supporting Growth**
 Project: **North West Package**



Discipline: **GIS**
 Drawing No:

ATTACHMENT 20

**SUPPORTING GROWTH ALLIANCE
NOISE CONTOURS
NoR R1 – COATESVILLE-RIVERHEAD HIGHWAY**



Noise Level dB LAeq(24h)

- 55 - 60
- 60 - 65
- 65 - 70

- Building Footprints
- Project Road

AUP Zones

- Residential - Single House Zone
- Open Space - Sport and Active Recreation Zone
- Business - Mixed Use Zone
- Future Urban Zone
- Rural - Mixed Rural Zone

Road

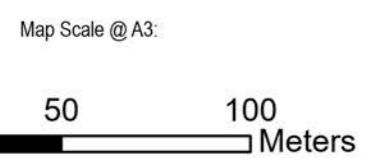
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Supporting Growth
 NoR R3 - Mitigated Road Traffic Noise with AUP Zones
 273

Client: **Supporting Growth**
 Project: **North West Package**



Discipline: **GIS**
 Drawing No:

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Noise Level dB $L_{Aeq}(24h)$

- 55 - 60
- 60 - 65
- 65 - 70

AUP Zones

- Building Footprints
- Project Road
- Residential - Single House Zone
- Open Space - Informal Recreation Zone
- Business - Neighbourhood Centre Zone
- Future Urban Zone
- Rural - Mixed Rural Zone
- Special Purpose Zone
- Road

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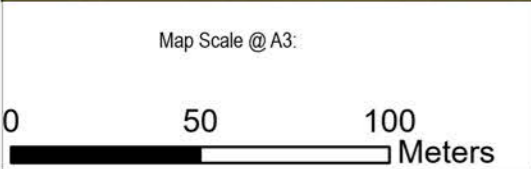
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Supporting Growth
 NoR R3 - Mitigated Road Traffic Noise with AUP Zones

274

Client: **Supporting Growth**

Project: **North West Package**



Discipline: **GIS**

Drawing No:



Noise Level dB $L_{Aeq}(24h)$

- 55 - 60
- 60 - 65
- 65 - 70

- Building Footprints
- Project Road

AUP Zones

- Future Urban Zone
- Rural - Mixed Rural Zone
- Special Purpose Zone
- Road

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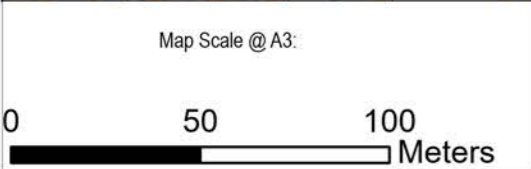
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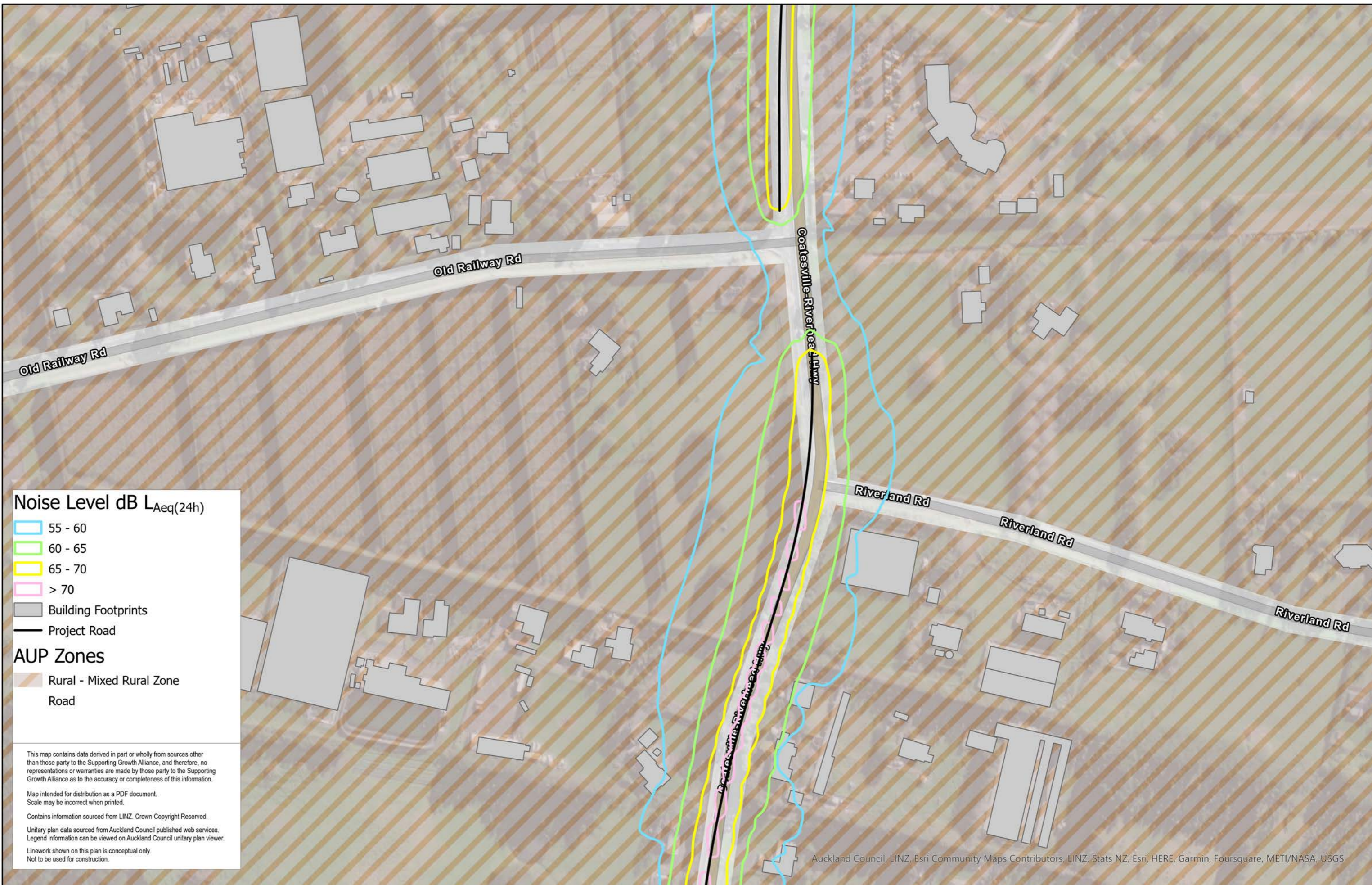
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Supporting Growth
 NoR R3 - Mitigated Road Traffic Noise with AUP Zones
 275

Client: **Supporting Growth**
 Project: **North West Package**



Discipline: **GIS**
 Drawing No:



Noise Level dB L_{Aeq}(24h)

- 55 - 60
- 60 - 65
- 65 - 70
- > 70

- Building Footprints
- Project Road

AUP Zones

- Rural - Mixed Rural Zone
- Road

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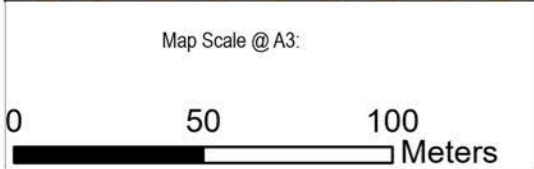
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Supporting Growth
 NoR R3 - Mitigated Road Traffic Noise with AUP Zones
 276

Client: **Supporting Growth**
 Project: **North West Package**



Discipline: **GIS**
 Drawing No:



Noise Level dB $L_{Aeq}(24h)$

- ▭ 55 - 60
- ▭ 60 - 65
- ▭ 65 - 70
- ▭ > 70

Building Footprints
▭ Building Footprints

Project Road
▬ Project Road

AUP Zones

- ▭ Rural - Mixed Rural Zone
- ▭ Road

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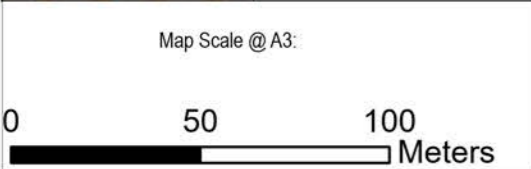
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Revision	Author	Verified	Approved	Date	Title
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Supporting Growth
 NoR R3 - Mitigated Road Traffic Noise with AUP Zones

277

Client: **Supporting Growth**

Project: **North West Package**



Discipline: **GIS**

Drawing No:



Noise Level dB $L_{Aeq}(24h)$

- 55 - 60
- 60 - 65
- 65 - 70
- > 70

- Building Footprints
- Project Road

AUP Zones

- Rural - Mixed Rural Zone
- Road

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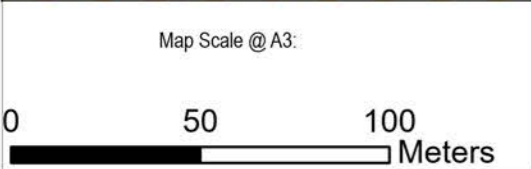
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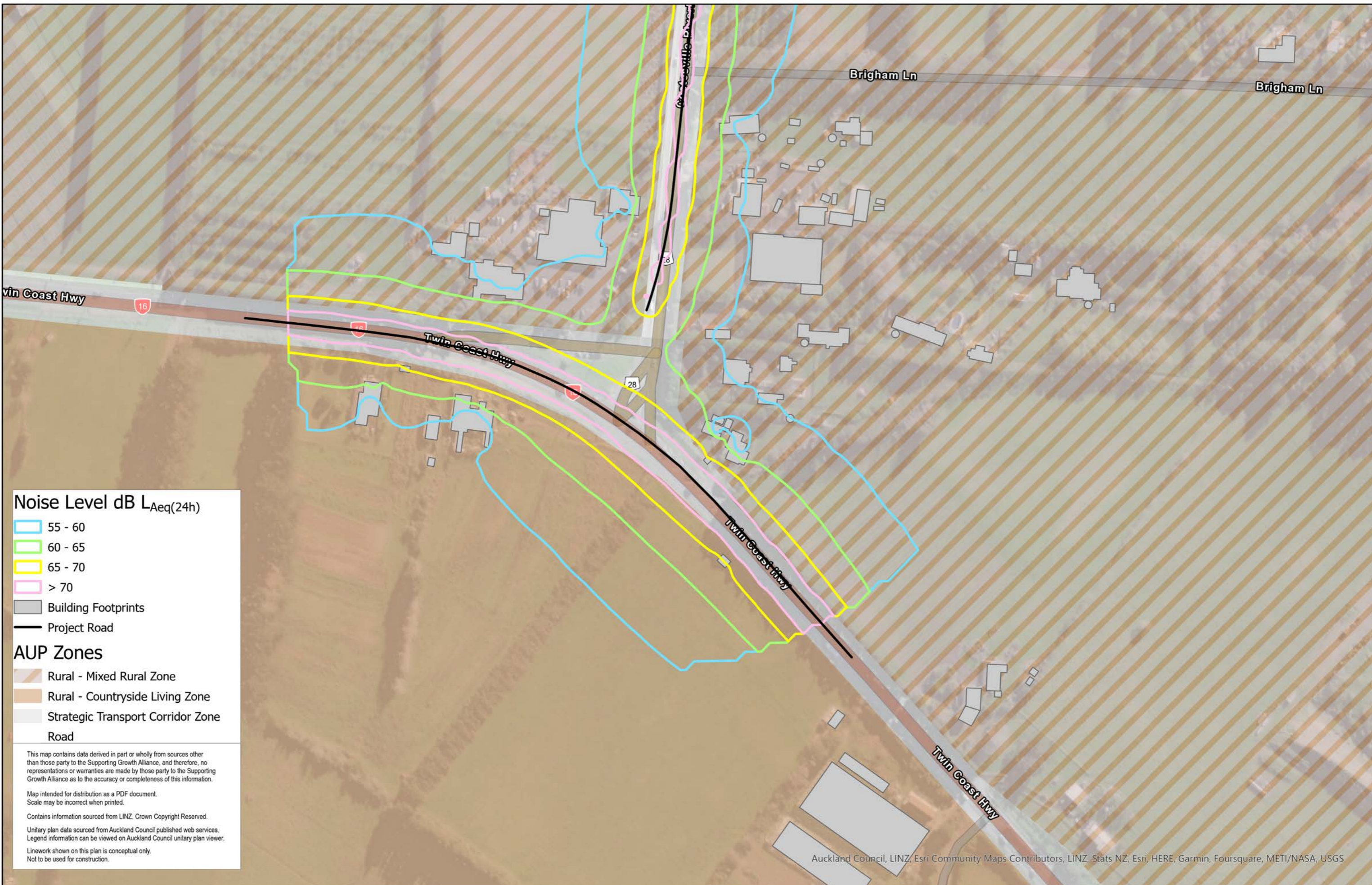
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Supporting Growth
 NoR R3 - Mitigated Road Traffic Noise with AUP Zones
 278

Client: **Supporting Growth**
 Project: **North West Package**



Discipline: **GIS**
 Drawing No:



Noise Level dB $L_{Aeq}(24h)$

- 55 - 60
- 60 - 65
- 65 - 70
- > 70

- Building Footprints
- Project Road

AUP Zones

- Rural - Mixed Rural Zone
- Rural - Countryside Living Zone
- Strategic Transport Corridor Zone

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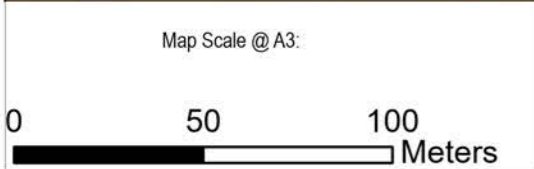
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Supporting Growth
 NoR R3 - Mitigated Road Traffic Noise with AUP Zones

279

Client: **Supporting Growth**

Project: **North West Package**



Discipline: **GIS**

Drawing No:

ATTACHMENT 21

**SUPPORTING GROWTH ALLIANCE
ADDENDUM TO REDHILLS
LANDSCAPE VISUAL ASSESSMENT**




Redhills Arterial Transport Network

Addendum to the 2020 Landscape and Visual Effects Assessment

March 2023

Version 0.3

Document Status

Responsibility	Name	Signature
Author	Riyasp Bhandari, NZILA Landscape Architect / WSP New Zealand Ltd	
Reviewer	Catherine Hamilton, NZILA Fellow / WSP New Zealand Ltd	
Approver	Joao Machado, New Zealand Planning Institute (Associate) / WSP New Zealand Ltd Bridget O'Leary, Planning Lead, Te Tupu Ngātahi Supporting Growth Alliance	 

Revision Status

Version	Date	Reason for Issue
0.1	24/02/2023	Draft
0.2	01/03/2023	Final Draft
0.3	21/03/2023	Final

Disclaimer

This is a draft document for review by specified persons at Auckland Transport and the New Zealand Transport Agency. This draft will subsequently be updated following consideration of the comments from the persons at Auckland Transport and the New Zealand Transport Agency. This document is therefore still in a draft form and is subject to change. The document should not be disclosed in response to requests under the Official Information Act 1982 or Local Government Official Information and Meetings Act 1987 without seeking legal advice.

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Glossary of Defined Terms and Acronyms

Acronym/Term	Description
AEE	Assessment of Effects on the Environment report
AT	Auckland Transport
AUP:OP	Auckland Unitary Plan: Operative in Part
CPTED	Crime Prevention through Environmental Design
CTMP	Construction Traffic Management Plan
MHU	Mixed Housing Urban Zone
LVA	Landscape and Visual Assessment
NPS:UD	National Policy Statement on Urban Development
NoR	Notice of Requirement
NoR 1	North-south arterial transport corridor
NZILA	New Zealand Institute of Landscape Architects
NZCPS	New Zealand Coastal Policy Statement
PC78	Plan Change 78
RMA	Resource Management Act 1991
SEA	Significant Ecological Area
Te Tangi a te Manu	Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines
Te Tupu Ngātahi	Te Tupu Ngātahi Supporting Growth Alliance
TDM	AT's Transport Design Manual: AT Engineering Design Codes – Transport Design Manual
ULDMP	Urban Landscape and Design Management Plan
Watercare	Watercare Services Limited
Waka Kotahi	Waka Kotahi New Zealand Transport Agency
Dwelling	House within property boundaries
Property	Property defined by legal cadastral boundaries

Background

This report is an addendum to the existing draft Landscape and Visual Effects Assessment (LVA) for the Redhills Arterial Transport Network (RATN), dated July 2020. The existing LVA was prepared for Te Tupu Ngātahi Supporting Growth Alliance (Te Tupu Ngātahi), in support of Auckland Transport's (AT) Notice of Requirement (NoR) under the Resource Management Act 1991 (RMA) which seeks to designate land for the construction, operation and maintenance of the RATN.

The RATN consists of two new arterial corridors contained within four NoR's (NoR1, NoR2a, NoR2b and NoR2c), as detailed in the Assessment of Environmental Effects (AEE)¹. A portion of NoR1, which covers the 'Redhills North-South Arterial Transport Corridor' (N-S Project), is the subject of this addendum.

A design change to part of NoR1 was made following the preparation of the existing LVA. Consequently, it is necessary to review the existing LVA and assess whether there are any new landscape effects arising from the change. The design change involves shifting the north-south road alignment between the proposed Don Buck Road and Royal Road intersection to just before the proposed stream crossing (CH 0-540). (refer Figs 3 and 4). The alignment is shifted away from ephemeral tributaries and generally low-lying land to sit at a higher elevation adjacent to residential properties between 426 and 450A Don Buck Road, before tying back into the original designation boundary.

Purpose and Scope of this Report

The purpose of this addendum is to assess the landscape and visual effects resulting from the design change, which are described more fully in Section 6. The general premise of the existing LVA assessment still stands, with one amendment made to the alignment and associated design of the north-south corridor immediately west of Don Buck Road.

The landscape and visual effects of the design change on the future receiving environment, both during the construction and operational phases of the Project, are covered, as well as recommended measures to avoid, remedy and/or mitigate potential adverse effects.

This addendum forms part of a suite of technical reports prepared to support the AEE for the RATN and should be read in conjunction with the existing LVA and AEE, which contain further details on the history and context of the Project.

Catherine Hamilton has reviewed the original existing LVA and agrees with the methodology, conclusions, and recommendations of the report.

¹ Te Tupu Ngātahi North-West Assessment of Effects on the Environment (AEE) – Redhills Arterial Transport Network, 2022

The following statutory documents were assessed in relation to NoR1 design change. Any changes in these statutory documents since the existing LVA was prepared, are noted below:

- **Resource Management Act (RMA)**

No change recorded and current RMA is consistent with the existing LVA.

RMA matters of relevance to landscape have been reviewed in relation to the design change. The following considerations apply:

In relation to Matters of National Importance – (s.6 RMA):

- s.6(a): The site does not fall within the definition of a coastal landscape (including the coastal marine area), wetlands, and lakes and rivers and their margins, and as such s.6(a) does not apply.
- s.6(b): The site is not identified as an Outstanding Natural Landscape or Outstanding Natural Feature.

In relation to Other Matters (s.7 RMA):

- s.7(c): The maintenance and enhancement of amenity values is applicable.
- s.7 (f): Maintenance and enhancement of the quality of the environment is applicable.

- **Auckland Unitary Plan Operative in Part (AUP:OP)**

Plan Change 78 (PC78) in response to the National Policy Statement on Urban Development (NPS-UD) requirements will result in the up-zoning of tracts of land within Redhills. This includes the land within the design change area of the NoR1 designation boundary, from Residential – Mixed Housing Suburban zone to Residential – Mixed Housing Urban zone.

All overlays applicable to this addendum are consistent with those in the existing LVA.

- **Redhills Precinct Plan**

No change recorded. The design change conforms to the objectives outlined in the I610 Redhills Precinct Plan.

Non-statutory Guidance Documents:

No change recorded. The following non-statutory documents were referenced in the assessment in relation to the design change of NoR1, with no changes to guidance noted as part of this addendum:

- Te Tupu Ngātahi Design Framework – Version 1.0
- Transport Design Manual – Auckland Transport
- Bridging the Gap: Waka Kotahi NZ Transport Agency Urban Design Guidelines (2013)
- New Zealand Transport Agency Landscape Guidelines (Final Draft, 2014)

This assessment follows a similar methodology to that used for the existing LVA, but with a specific focus on the design change of NoR1 only. The approach further recognises the guidance provided in Te Tangi a te Manu, Landscape Assessment Guidelines (TTatM)² which was published after the preparation of the existing LVA (2020). The Guidelines are now widely accepted as the basis for best practice within a statutory planning context in Aotearoa New Zealand.

In accordance with TTatM, landscape is recognised as having overlapping dimensions of physical, associative, and perceptual values. Effects on landscape values consider not only the physical resources, but also associative values derived from peoples' relationship with the landscape and how it is perceived (including visual values).

TTatM guidelines go further to promote integration of Te Ao Māori – our unique indigenous worldview, as a keystone of Aotearoa landscape assessment practice. It is not however, the role of the Landscape Architect to determine these values unless designated to do so. Accordingly, this addendum does not specifically address Mana Whenua values which are being considered through a separate, parallel process. Refer to the AEE for details.

Natural character, as defined by Te Tangi a te Manu, is the distinct combination of an area's natural characteristics and qualities, including degree of naturalness. Natural character is the outcome of physical environment and perception. Within the RMA (Section 6(a)) natural character only relates to the coastal environment and to waterbodies and their margins, rather than the landscape in its entirety.

The design change does not sit within the RMA (Section 6(a)) definition of Natural Character and as such is considered only in a more general sense of the natural characteristics and qualities of the landscape.

The steps taken to assess the landscape effects of the design change are set out below:

- A desktop analysis of relevant background information was undertaken to review information pertinent to the design change, including the existing LVA, relevant statutory and planning provisions, updated NoR1 design plans and technical assessments from relevant specialists.
- A site visit was undertaken on 20 February 2023 to evaluate the landscape values and character of the receiving environment and its wider landscape context. The visual catchment and viewing audience were identified, and photographs taken from representative viewpoints.
- Discussions with Te Tupu Ngātahi ecological and stormwater specialists on respective technical assessments pertaining to the design change were held.
- Engagement was undertaken with the Te Tupu Ngātahi Planning Lead and AEE Programme Wide Lead to understand the project context and details of the design change.
- The design change was evaluated to understand any implications for landscape values and character that depart from the existing LVA.
- An assessment of Landscape and Visual Effects pertaining the design change was prepared.

Effects Scale

The nature (qualitative) and magnitude (degree/level) of effects change both during construction and following construction once the landscape strategy including mitigation measures have been assessed. The landscape architecture profession promotes a seven-point scale as a universal scale

² [Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines](#), Tuia Pito Ora, 26th August 2022

to describe the level of effects as a qualitative measure as described below, rather than concluding the level of effects (less than minor, minor or more than minor) which rests with the planner.

Very Low (V-L)	Low (L)	Low- Moderate (L-M)	Moderate (M)	Moderate- High (M-H)	High (H)	Very High (V-H)
-------------------	------------	---------------------------	-----------------	----------------------------	-------------	--------------------

Figure 1: 7-point scale rating to describe magnitude of landscape effects. Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines

Change in a landscape does not, of itself, necessarily constitute an adverse landscape or visual effect. Landscape is dynamic and is constantly changing over time in both subtle and more dramatic transformational ways. These changes are both natural and human induced. Within the context of continual landscape change, it is important to manage human induced change so that significant adverse effects are avoided or sufficiently mitigated to reduce the effects of the change in land use. Landscape and visual effects can also be temporary or permanent, which must be considered when determining the magnitude and nature of such effects.

Effects include positive effects. Consideration is given to enhancing positive effects through alignment between mitigation and design, rather than merely minimising harm which is considered by the landscape profession to be a low baseline.

Physical Context

Redhills is a live-zoned urban greenfield area on the periphery of the existing urban environment of northwest Auckland, approximately 13km from the Auckland CBD. NoR1 is located in the eastern part of Redhills, near the intersection of Don Buck Road and Royal Road.³

The existing baseline landscape within which the design change is set is consistent with landscape values and character described in the existing LVA. Key qualities of relevance to the design change are:

- The surficial landscape character is distinguished by undulating topography, a north-facing amphitheatre landform and interlacing stream corridors with associated tributaries present in the lowlands.
- The setting is a peri-urban landscape characterised by an interplay of rural (pastoral) and urban land uses, including large areas of developing or recently developed urban land uses. Human land use patterns are expressed in the fine-grained lifestyle blocks which are demarcated by rural fences. Several lifestyle blocks and associated ancillary buildings are established in the southern uplands, adjacent to the urban settlement along Don Buck Road and Paretao Street. Power pylons are a dominant feature, contributing to the modified character of the landscape. Urban development on the fringes of the amphitheatre contribute to a sense of a landscape in transition to an urban environment.
- The natural qualities of the landscape have been diminished due to the loss of native vegetation cover to enable agrarian activities. Open grazed pasture is the dominant landcover, while exotic planting associated with farming activity includes hedgerows, individual specimen trees and amenity planting located around dwellings.
- Natural wetlands amongst the tributaries are highly modified and dominated by exotic wetland species.⁴ Small fragments of low value riparian planting and indigenous species are present including manuka scrub, established at the southern reaches of the Ngongetepara Stream. The stream habitat also serves as an ecological corridor for long-tailed bats.

Visual Context

The viewing context is largely consistent with that described in the existing LVA, with some changes that are described in more detail in section 6 below. Viewers mainly consists of private landowners within the Redhills Precinct, adjacent to the Project Area. The transient viewing audience (i.e. vehicles travelling at 50km/h) is comprised of those travelling along Red Hills Road, Don Buck Road and Fred Taylor Drive. Glimpsed views may also be afforded from intersecting roads such as Royal Road, Matakahe Road, Nelson Road, Nixon Road, Henwood Road.

³ Te Tupu Ngātahi North-West Assessment of Effects on the Environment (AEE) – Redhills Arterial Transport Network, 2022

⁴ Te Tupu Ngātahi Redhills Arterial Transport Network – Assessment of Ecological Effects, 2022

In the context of the RMA assessment process, the effects of the construction and operation of the design change are considered in terms of the future plan-enabled environment; that is, the anticipated environment at the time the project is likely to be constructed. The future receiving landscape for NoR1 is informed by the AUP:OP zone provisions and the Redhills Precinct Plan 1, which indicates a basic urban framework (arterial network and green infrastructure).

The land within which the design change area is located is zoned under the AUP:OP for Residential – Mixed Housing Suburban. The zone enables intensification, while retaining a suburban built character. Development within the zone will generally be two storey detached and attached housing in a variety of types and sizes to provide housing choice. The height of permitted buildings is the main difference between this zone and the Residential – Mixed Housing Urban Zone which generally provides for three storey predominately attached dwellings. Up to three dwellings are permitted as of right subject to compliance with the standards. This is to ensure a quality outcome for adjoining sites and the neighbourhood, as well as residents within the development site. Further, the land within the design change area is proposed to be up-zoned to Residential – Mixed Housing Urban under PC 78.

Intensification proximate to the design change is expected to occur more gradually than some other areas within the Redhills Precinct.⁵

The land immediately to the southeast of the design change area, along Don Buck Road, is zoned Business - Local Centre. This area will see a change in activity from the current low-density housing to a mixed-use centre with a focus on community and commerce. Therefore, the assessment of landscape effects on these adjacent residents needs to consider the future plan-enabled change to a Local Town Centre. (Refer to Fig 2 below).

The wider area of RATN, including NoR1, will experience considerable change to the landscape character as the land use transitions to an urban environment. The natural attributes of the landscape within NoR1 are mainly associated with the Ngongetepara Stream and its riparian vegetation. The Redhills Precinct Plan identifies these waterbodies as helping to shape and integrate urban development into the landscape and as such the natural landscape values are expected to remain and be enhanced as urban development progresses.

A green road circuit is a feature of the Redhills Precinct Plan and will provide a priority cycle and pedestrian route of high amenity, connecting recreational spaces within the precinct, including parks and stream corridors, and connections to commuter cycling routes. This green circuit is planned to intersect with the north-south transport corridor within the proposed design change extents.

The magnitude of effect of the land use change based on AUP:OP zoning/policy direction within the design change area (CH 0-540) has been identified in Table 1: below, which has been used to inform the assumptions made on the likely future environment.⁶

⁵ Te Tupu Ngātahi North-West Assessment of Effects on the Environment (AEE) – Redhills Arterial Transport Network, 2022

⁶ Te Tupu Ngātahi North-West Assessment of Effects on the Environment (AEE) – Redhills Arterial Transport Network, 2022

Table 1: Likelihood and Magnitude of Land Use Change

Existing environment	Current AUP:OP Zoning	Likelihood of Change for the environment ⁷	Likely Receiving Environment ⁸
Rural	Residential (Mixed Housing Suburban)	High ⁹	Residential (Mixed Housing Urban)

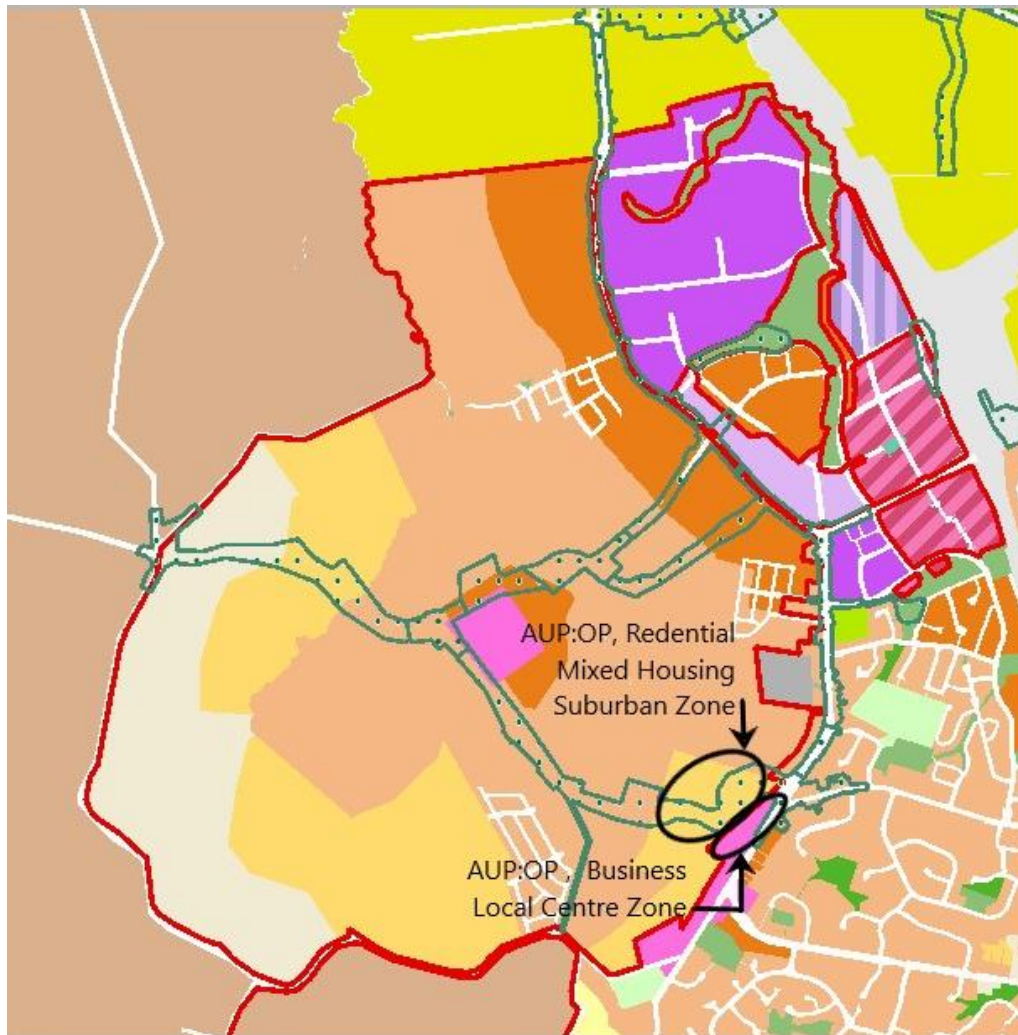


Figure 2: AUP:OP Zones and NoR Alignment – Redhills Precinct

⁷ Based on AUP:OP zoning/policy direction

⁸ Based on AUP:OP zoning/policy direction (PC 78)

⁹ There are areas of existing Residential Zone land that has recently been intensified (i.e. new build developments), as such is unlikely to change in the near future.

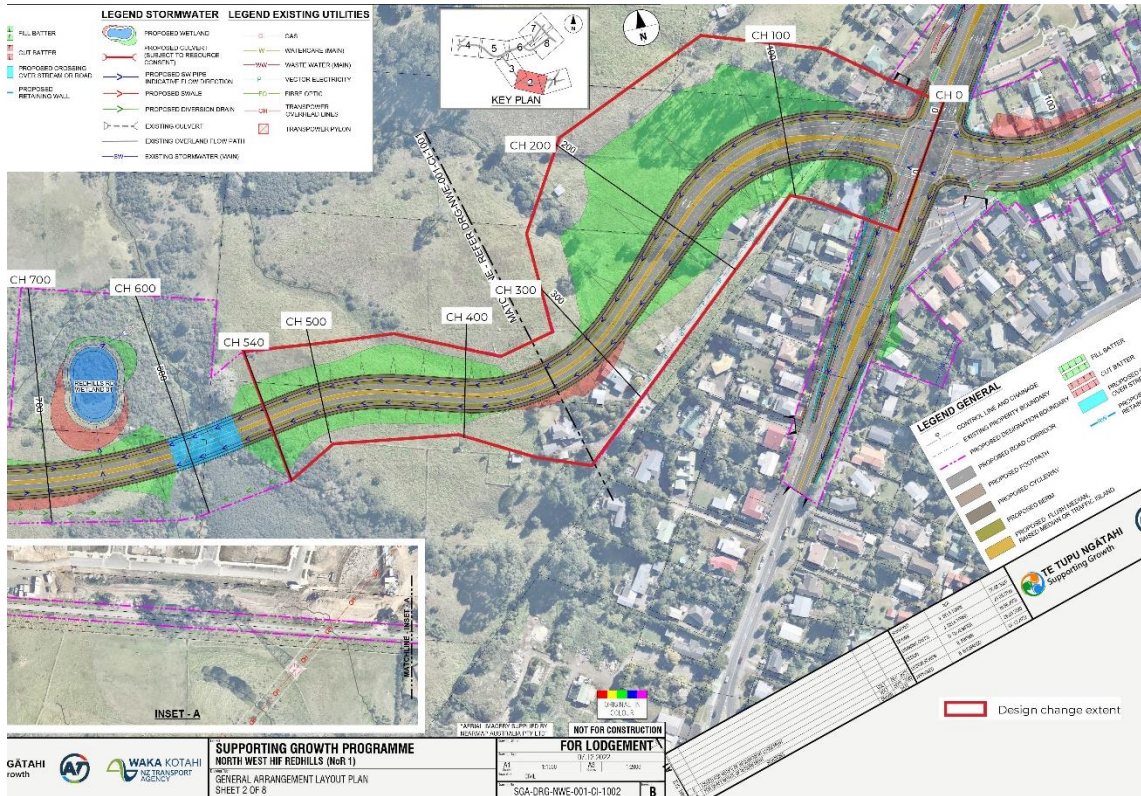


Figure 4: NoR 1 After Design Change (Proposed North-south Arterial Corridor Alignment) Between Chainage 0-540 (Don Buck Road/Royal Road intersection) to just before Proposed Stream Crossing

The design change alters the route between Don Buck Road/Royal Road intersection to just before the proposed stream crossing at CH 0-540. This change proposal is documented in the Redhills Resource Consent drawings SGA-DRG-NWE-001-CI-1001 and SGA-DRG-NWE-001-CI-1002 (refer Fig 4). Refer Appendix 1 for reference drawings relating to the RATN.

The alignment now bends southwest from CH 0-100 to run along the boundary with residential properties on Don Buck Road, before bending back to intersect with the original alignment at CH 0-540.

The route will be more elevated when compared with the original alignment and shifts further away from the tributaries of the Ngongetepara Stream. This achieves a key objective of minimising adverse effects on the biophysical values of the stream system, which contribute to the natural qualities of the landscape. It also means that this section of the RATN will sit closer to natural ground level thereby reducing earthworks volumes and helping to facilitate future local road connections. Overall, the new alignment will significantly reduce the amount of fill batter slopes and reduce modification to the natural landform.

The design change brings the designation closer to some residential properties on Don Buck Road when compared with the existing LVA extents. This will result in some dwellings being removed, while others will be in closer proximity to the new transport route alignment. The properties affected, and a description of the change is set out in Table 2 below.

Table 2: Properties and/or dwellings within or close to the altered alignment

Properties and Dwellings	Original alignment	Design Change	Description
456A, 458 Don Buck Road; large lifestyle blocks	Dwellings outside designation	Dwellings within designation	Change from existing LVA; Assumed dwellings will be removed
458a Don Buck Road; large lifestyle blocks	Dwelling within designation	Dwelling within designation	Consistent with existing LVA; Assumed dwelling will be removed
456 and 460 Don Buck Road; small lots	Properties entirely within designation	Properties entirely within designation	Consistent with existing LVA; Assumed dwellings will be removed
452 and 454 Don Buck Road; small lots	Properties outside designation	Properties outside designation	Consistent with existing LVA; Properties are adjacent to designation as per the original alignment
450a, 448a, 446, 444a, 438, 440, 436, 426 Don Buck Road; small lots	Properties outside designation	Properties outside designation	Change from existing LVA; Designation moves closer to properties when compared with original alignment
414, 424 Don Buck Road; small lots	Properties outside designation	Properties outside designation	Change from existing LVA; Designation moves closer (but not adjacent) to properties when compared with original alignment

Key:

- Dwellings within proposed design change designation (refer Figure 6)
- Properties entirely within proposed design change designation (refer Figure 6)
- Properties outside proposed design change designation (refer Figure 6)

7.1 Assessment of Construction Effects

This assessment of landscape and visual effects associated with the design change during construction agrees with the conclusions reached in the existing LVA, with the following minor departures:

- Adverse effects on biophysical landscape values resulting from garden planting removal around homesteads at 456a and 458 Don Buck, at approximately CH 0-400 of the greenfield site. Refer to Figure 4.
- Positive effects on biophysical landscape values resulting from the alignment shifting further away from tributaries of the Ngongetepara Stream and reduction in volume and extent of earthworks and batter slopes.
- Adverse visual effects resulting from construction works being in closer proximity to the fixed viewing audience located along the southeast boundary of the designation, including machinery, stored materials, structures, lighting and construction activity.
- Adverse landscape amenity effects resulting from construction works being in closer proximity to residents located along the southeast boundary of the designation, including machinery, stored materials, structures, and activity.

These landscape and visual effects are assessed in relation to the successive stages of site enabling works, project formation works and site finishing works below.

7.1.1 Site Enabling Works

7.1.1.1 Construction Areas

Site enabling works will be implemented to set up the construction areas, including site compound, laydown areas and access routes, and will include:

- Providing space for manoeuvring of heavy machinery
- Setup of temporary construction plant on site
- Install environmental controls, silt fences, and temporary sediment retention ponds
- Vegetation clearing and demolition / modification of existing properties

Enabling works will introduce machinery, stored materials, structures, and activity into a landscape that is already heavily modified from its natural state by rural land use activities. Some modification to surficial features involving earthworks to create suitable grades and surfaces will be required, however these activities are not discordant with a landscape that is already characterised by increasing urbanisation within its surrounding context. Furthermore, the future receiving environment is expected to be more strongly influenced by urbanisation by the time contract works begin.

Notwithstanding, the level of sensitivity for existing private landowners along the Don Buck Road boundary will be heightened due to their proximity to the Project Area. However, the Redhills Precinct Plan and current AUP:OP zoning provides for the land use transitioning to Business – Local Centre activities. At the time of construction, one of two scenarios is likely to be relevant – either the properties will be in transition to Business Use, or the Local Centre will be established. In either case, it can be expected that the existing residential land use will be in transition to business use which, in landscape terms, is coherent with transport infrastructure that supports such activity.

Overall, effects on landscape resulting from enabling works to establish construction are assessed as **Low adverse**, considering appropriate environmental management controls to mitigate impacts, as set out below.

7.1.1.2 Vegetation Clearance

Garden plantings within the design change area that will require removal are mostly exotic amenity species, (including weeds) associated with the dwellings at 456a and 458 Don Buck Drive, between CH 0-400. These plantings are generally not considered noteworthy from a landscape perspective. There is, however, the potential for plantings to have heritage significance and therefore be worthy of measures to reintroduce species, which could be determined by an appropriately qualified landscape heritage specialist.

All other plantings and naturally occurring indigenous vegetation within the boundaries of the design change area impacted by the Project works have been assessed within the existing LVA and the conclusions are supported. Notwithstanding the new alignment moving further away from the ecologically sensitive tributaries of Ngongetepara Stream, there are still two locations where it crosses over ephemeral streams. Mitigation measures should be implemented in accordance with the recommendations of the existing LVA, and further landscape enhancement measures designed and integrated into the Urban Landscape and Design Management Plan (**ULDMP**).

Overall, the physical landscape effects resulting from vegetation clearance are assessed as **very low adverse**, taking into account the already low presence of indigenous vegetation within the stream system – or anywhere else in the NOR1 extents. Mitigation and design strategies proposed to enhance the already degraded landscape values will result in positive landscape effects overall.

7.1.2 Project Formation Works

The proposed north-south arterial transport corridor ties into the Royal Road intersection between 452 and 462 Don Buck Road (refer Figure 4). The original design proposes a steep section (8% grade) from the intersection before tying into the natural ground level. The design change proposes moderate fill batter slopes that would reduce the amount of fill when compared with the original design. While this still incurs a modification of the landscape, a gentler slope profile is created that is more sympathetic to the natural landform and would retain a greater degree of the site's natural character.

In constructing the design change, there is a risk of sediment entering the wetland and stream channels while earthworks are exposed. Some cutting of landform would also be required along the south side of the bend at CH 300, which could potentially create an unsightly view for neighbouring residents along Don Buck Road, while earthworks are exposed. These effects will need to be managed by mitigation measures identified in the AEE.

The change in alignment of the north-south corridor will have adverse effects on the physical attributes of the landscape, however, the level of effect is greatly reduced through mitigation. Therefore, the overall construction effects are assessed as **very low adverse**.

7.1.3 Site Finishing Works

Site finishing works will be the same as previously identified in the existing LVA.

In addition, careful consideration should be given to the effect of lighting in proximity to vegetation cover, which is home to indigenous bat and bird habitat. It is recommended to implement appropriate mitigation measures to the design change area of NoR1, as documented in the AEE, to preserve and protect the ecological habitat.

The overall physical works nearing completion is expected to have minimal effects on the existing landscape and are assessed as **very low adverse**.

7.1.4 Impacts on Private Property

As described in 7.1.1.1, it is expected that the private properties likely to experience the greatest landscape effects during construction works are those located along Don Buck Road to the south of the designation. Notwithstanding that these properties are likely to be in transition to business use at the time of construction, as enabled through PC78, effects relating to construction will still need to be mitigated.

It is assumed all affected dwellings within the design change area of the designation, namely 456A, 458, 458A Don Buck Road, are to be removed, including any ancillary buildings, existing driveways, private gardens, mature trees and associated fencing.

Properties adjacent to the designation boundary, namely those along the slip-lane at 450a, 448a, 446, 444, 438, 440, 436, 426 Don Buck Road, and close to the new designation boundary at 414 and 424 Don Buck Road, will experience temporary construction effects. Such effects will result from establishment activities including construction of access roads, lay down areas and storage, the construction of a structural retaining wall, and the perception of activities associated with construction – including lighting, vehicle movement and noise.

It is likely that the implementation of the transport infrastructure will occur at a time when the adjacent land use is transitioning to greater urban density, including a shift to Business- Local Centre along the southern designation boundary. It can also be expected that construction work will generally be more prevalent in the surrounding landscape as the Precinct Plan takes effect. This will change the landscape amenity associated with lifestyle blocks in the existing environment, to a more urban setting.

Overall, construction effects on private properties are assessed as **low-moderate adverse**. Any adverse effects can be further reduced with appropriate mitigation measures as outlined in the existing LVA and AEE.

7.1.5 Visual Effects

A site visit was undertaken to evaluate the existing visual quality of the landscape and visibility in relation to the design change. This information, together with an evaluation of the future receiving environment, has been used to assess visual effects. The visual character of the existing receiving environment is captured in **LC #1** of the supplementary maps to this addendum. The visibility of the design change in relation to the adjoining fixed viewing audience is represented in **VP #1**, while visibility in relation to the wider viewing audience in the surrounding environment is captured in **VP's #2- #6** inclusive.

Visual effects associated with construction works will include site establishment, demolition, vegetation clearance, bulk earthworks, land formation and construction of site heavy infrastructure

including construction of a structural retaining wall to manage road level changes. Works are likely to endure in stages over 1.5-3 years.¹⁰

In terms of existing visual character, the landscape exhibits strong surficial qualities relating to undulating topography, and poor natural landscape qualities derived from the dominance of grazed pasture and scarce remnant indigenous vegetation located along streams and tributaries. Long views to the western hills and ridgeline locate the landscape in the wider visual context. The low-lying nature of the lifestyle blocks contributes to a 'big sky' landscape character. All this will change when the area becomes urbanised, as provided for by the current AUP:OIP zoning. Views will generally be constrained by intervening buildings while waterbodies will be enhanced which will contribute to improved visual amenity.

For the wider viewing audience (VP#2 to VP#6) the visual impacts are largely consistent with those identified within the existing LVA. The main change is that the construction will sit at a higher elevation than the previous alignment and as such will be more visually prominent. Measures to mitigate these increased visual effects are identified in section 7.2 below.

For properties adjoining the designation boundary (Representative VP #1) the roading infrastructure will be in closer proximity and therefore more prominent when compared with the original alignment assessed in the existing LVA. Affected properties are 450a, 448a, 446, 444, 438, 440, 436, 426 Don Buck Road, and those close to the boundary at 414 and 424 Don Buck Road. Some views from these properties are locally screened by intervening planting and landforms, whilst other views are expansive and take in the wider landscape to the distant ridgeline to the north.

The viewing audience from adjacent properties will in the future be those occupying the Business - Local Centre zoned properties as well as visitors to these businesses. The views afforded to this audience will be of construction works within a transitioning landscape that increasingly will not possess rural lifestyle qualities. Nonetheless, it will be important to mitigate adverse visual effects relating to construction activities. These mitigation measures are set out below.

For transient viewers, and those viewing the infrastructure from public locations, visual effects are consistent with those assessed in the existing LVA. The main difference is that construction works will be more prominent given the higher, elevated land. Visibility is expected to be locally constrained by intervening development which will occur in accordance with the Precinct Plan up-zoning.

Overall, visual effects during construction must be considered against the sensitivity of the future receiving environment which will be adjusted to frequent construction activities and new developments enabled by the current AUP:OIP zoning. As such, the existing environment is an unrealistic benchmark against which to assess landscape and visual impacts. Given the changing landscape setting and taking account of proposed measure to mitigate adverse effects, visual effects are assessed as being **low adverse**.

¹⁰ Te Tupu Ngātahi Redhills Arterial Transport Network – Assessment of Landscape and Visual Effects, 2020

Table 3: Summary of Assessment of effects on Existing Landscape during Construction

Stage	Assessment Summary	Nature of Effect	Magnitude of Effect	Recommendations
Construction	<p>Construction will occur within a landscape in transition from peri-urban to urban in keeping with the Redhills Precinct Plan. While the existing environment possesses moderate rural amenity values with poor natural landscape attributes, the future receiving environment will be adjusted to a medium to high density development within which natural landscape systems will be restored. The presence of high-quality vegetation cover within remnant patches should be protected from construction impacts and enhanced through revegetation of riparian margins.</p> <p>Visual effects from construction are greatest for the properties adjoining the designation along Don Buck Drive. These effects can be mitigated through screening as well as controls on hours of activity to reduce night-time disturbances such as light spillage.</p>	Adverse	Low	Refer to section 7.2

7.2 Recommended Measures to Avoid, Remedy or Mitigate Construction Effects

Physical work will be undertaken in, or near, waterways and wetlands which could cause waterway, riparian and wetland bed disturbance, and result in negative impacts on the biophysical values of the landscape. Large construction buffer areas are required to alleviate these effects.

Construction effects will to be mitigated through measures identified in the Construction Environmental Management Plan (CEMP) as set out in conditions. These mitigation measures have been identified in the existing LVA and are assessed as being appropriate to the construction of the NoR1 design change area. Mitigation proposals are:

- Provide large construction buffer areas to alleviate potential adverse effects in, or near, waterways and wetlands which could cause waterway, riparian and wetland bed disturbance, and result in negative effects on biophysical landscape values
- Site works areas are recommended to be reinstated at the completion of the construction phase
- Reinstatement site compounds and construction yards by removing any left-over fill and shaping ground to integrate with surrounding landform. Reinstatement with grass at the completion of works.

- Reinststate private fences and garden plantings for existing, remaining properties temporarily affected by Project works.
- Vegetation removal is proposed to retain noteworthy and high value trees and vegetation identified within the N-S Project area where possible.
- For affected private properties, where existing dwellings are assumed to be removed, it is recommended that, after completion of the works affecting the property, if the remnant land is maintained within the road corridor it be grassed to mitigate adverse visual amenity effects potentially arising from residual land.
- Existing fences and garden plantings (removed through the N-S Project works) are proposed to be reinstated (in consultation with the landowner).

In addition, further mitigation measures are applicable to the design change area of NoR1 have been proposed below. It is recommended that these should be addressed through future outline plan or resource consent processes (as appropriate):

- Retain terrestrial vegetation where possible to preserve ecological habitat identified within the Project Area where practicable.
- Provide temporary screening during construction for adversely affected residential areas, as provided for in the CEMP condition.
- Identify opportunities for the survey, collection, and propagation of heritage amenity plants in private gardens that will be demolished to enable construction to occur (subject to the agreement with the landowners), so that as appropriate these may be re-established as part of the planting programme during finishing works.

7.3 Assessment of Operational Effects on Landscape

Operational effects have been assessed in the existing LVA and this addendum agrees with the conclusions reached therein. The design change area of NoR1 will introduce major roading infrastructure into a future, heavily built receiving environment. The main difference when compared with the design assessed in the existing LVA is that the permanent infrastructure will now sit closer to the adjoining properties along Don Buck Drive and will occupy land at a higher elevation.

7.3.1 Landscape Effects

Major roading infrastructure forms an integral structuring element within urban settings. The key consideration for operational effects is the way in which, through aligning conditions and design, it is possible to create high amenity landscape outcomes for the infrastructure, the receiving environment, and for those experiencing it.

Shifting the road alignment to a higher elevation and away from the low-lying wetlands, tributaries and associated terrestrial vegetation of Ngongetepara Stream will reduce adverse effects on biophysical landscape values. Furthermore, the new alignment will create opportunities to reinststate the natural patterns and processes of the landscape, which are currently degraded. This is in keeping with the Redhills Precinct Plan which anticipates the enhancement of stream corridors and open spaces as a structuring element within the new urban form.

The road corridor can be conceived of as a green (ecological) corridor that contributes to the biophysical and amenity values of the future urban setting and connects the site to the Northwest Wildlink. To this effect, it is recommended that contiguous swathes of vegetation along the margins of road are established, where practicable.

The undulating topography contributes strongly to the existing landscape character and expression of the surficial (geological) processes. This landform in the surrounding area will be significantly modified and reshaped to accommodate future urban development. Within this context, the road corridor will become a coherent part of the future urban landscape typology and will help to express the underlying landform as it generally hugs and 'renders' the contour of the ground. Where modification of landform will occur through the introduction of fill slopes and cut embankments on either side of the transport route, it is recommended to plant these slopes with native species where practicable.

Adverse effects of dominance may arise in relation to the scale and appearance of infrastructure; however, this is expected to be lessened due to the alignment sitting closer to natural ground level.

Overall, the operational stage of the Project provides opportunities to create enhanced physical landscape outcomes when compared with the existing landscape baseline and in consideration of the future receiving environment. Landscape effects are assessed as **moderate positive** following mitigation.

7.3.2 Visual Effects

There is potential for adverse visual effects associated with the design change area of NoR1 to be greater than that of the original alignment. This is due to bringing the road closer to the houses along the adjoining boundary with Don Buck Road. However, given the future urbanisation of the Redhills Precinct and the changes in land use proximate to the designation, the visual quality of the transport route will be coherent with the urban setting.

Attention will still need to be given to the appearance of the roading infrastructure so that it contributes an attractive element in the landscape and is not visually dominant. This will be achieved through suitable landscape enhancement measures designed and integrated into the Urban Landscape and Design Management Plan (**ULDMP**).

Measures that will contribute to visual amenity include:

- vegetated embankments to create a green visual buffer from the overlooking properties along Don Buck Road
- planting of fill batter slopes to minimise the visual prominence of the new road alignment which sits at a higher elevation than the original alignment
- design of hard infrastructure to visually integrate into the surrounding built form, and
- design of any bridges as art bridges that contribute to the attractiveness of the landscape setting.

While temporary residual adverse visual effects are expected from properties and from a transient audience, it is anticipated that the overall development of Redhills will absorb any adverse visual amenity effects and offer enhanced streetscape appeal, mature trees and quality infrastructure within the Residential – Mixed Housing Suburban zoning.

Overall effects on visual amenity associated with design change are considered **low adverse**, taking into account mitigation measures.

Table 4: Summary of Assessment of Operational Effects on Landscape

Stage	Assessment Summary	Nature of Effect	Magnitude of Effect	Recommendations
Operational	<p>Permanent landscape effects relate to the introduction of roading infrastructure into an environment that will in the future be heavily urbanised. Major roads are an expected part of the urban landscape typology and as such are not discordant with the landscape setting.</p> <p>The appearance of the infrastructure can contribute a positive amenity to the landscape through careful design of the hard infrastructure to integrate with the surrounding urban setting. Any bridges can be designed as 'art bridges' in the tradition of West Auckland's art strategy and will contribute to landscape aesthetic qualities and associative aspects of landscape.</p> <p>Extensive planting on batter slopes and between the road corridor and adjacent land uses will contribute to the visual quality of the route as a green corridor and its function as a link in the Northwest Wildlink.</p>	Neutral	Very Low	Refer to Section 7.4

7.4 Recommended Measures to Avoid, Remedy or Mitigate Operational Effects

This addendum considers the measures to avoid remedy or mitigate operational effects described in the existing LVA and AEE are appropriate to the proposed design change area of NoR1. Some minor amendments take account of the closer proximity to properties along Don Buck Road and the higher elevation of the infrastructure. The measures from the existing LVA include the following:

- Roading infrastructure is to be designed, constructed, and managed in keeping with the Urban & Landscape Design Management Plan (ULDMP).
- All cut and fill slopes will be shaped to a natural profile to integrate into the surrounding natural landform. Where there are large-scale fill slopes (that are retained within the road reserve) it is recommended these are reinstated with grass, where practicable.
- Noise mitigation walls shall be designed to integrate with private boundary fencing and avoid double layering. It is also recommended to incorporate amenity planting in a way to improve streetscape character and visual amenity within the wider open space development.
- A planting plan to be implemented during detailed design phase under the ULDMP for the open spaces (fill batter slopes)

- Implement further riparian and wetland planting measures to reinstated areas where proposed stream crossings are identified to enrich natural character values.
- Bat and bird habitat – it is recommended to provide appropriate landscape measures i.e., mature native buffer planting along the existing riparian corridor and implementation of a Bat Management Plan (BMP) as per the recommendations in the Assessment of Ecological Effects. Careful consideration of measures to maintain bat connectivity, e.g. street lighting placement and noise management, is required under the EMP, refer to the (Assessment of Ecological Effects).
- Where practicable incorporate reinstatement planting to private properties that have resulted in vegetation loss during construction.
- Investigate walking and cycling connectivity opportunities to integrate with existing and future open space (as indicated the Redhills Precinct Plan).

In addition, further mitigation measures are applicable to the design change area of NoR1 have been proposed below. It is recommended that these should be addressed through future outline plan or resource consent processes (as appropriate):

- Introduction of any heritage plant species collected from the site during construction phase, to retain landscape memory.
- Consideration of mitigation buffer planting between residential properties along Don Buck Road and the proposed road alignment
- Minimise Crime Prevention through Environmental Design (CPTED) issues by giving effect to CPTED principles across the NoR1 works, as required by the ULDMP condition.

This addendum generally agrees with the overall conclusion of the existing LVA in relation to the magnitude and nature of landscape and visual effects. Overall, the effects resulting from the design change are assessed as being **low adverse**. This is primarily because the transport route will be set within a future landscape that has transitioned from the existing peri-urban landscape character to a future heavily urbanised landscape setting in terms of the Redhills Precinct Plan and PC78. Rooding infrastructure of the type proposed is a coherent part of the urban landscape typology and as such is not discordant with the anticipated landscape setting.

Consideration needs to be given to the appearance of the infrastructure to ensure that it integrates in scale and visual quality with its surrounding context and contributes overall to positive landscape and urban amenity. This will be achieved through conditions requiring the implementation of quality design as set out in the Urban & Landscape Design Management Plan (ULDMP).

Positive landscape effects will be achieved through shifting the alignment away from the low-lying, higher-valued stream tributaries and restoring these natural systems. This is consistent with the intentions of the Redhills Precinct Plan. Furthermore, the transport corridor can be designed to integrate within the landscape of the Red Hills Precinct.

Visual effects resulting from shifting the alignment closer to the properties along Don Buck Drive will need to be mitigated through buffer planting. Consideration of effects takes account of the likelihood that the proximate viewing audience will in the future be those occupying the Business- Local Centre zoned properties and not the residents who constitute the viewers within the existing environment.

The following effects of relevance to the design change area of NoR1, taking into account mitigation measures, are:

- Vegetation clearance will be reduced when compared to the original design, due to the change in road alignment avoiding disruption of ecological habitat and vegetated corridors, resulting in **low adverse** effects.
- Some areas that possess indigenous biophysical landscape values will still be disturbed. Effects during construction are assessed as **low adverse**. Following mitigation, which is recommended to include restoration of natural vegetation patterns through planting, effects on biophysical landscape values are assessed as **moderate positive**.
- Modification of the natural landform due to the design change will have low adverse construction effects within the design change area of NoR1 because of reduced fill batter slope gradients and cutting of natural terrain. Permanent (operational) effects on the surficial features of the landscape are assessed as **very low adverse**.
- Construction effects on private properties along western Don Buck Road will be greater than what was assessed in the existing LVA, due to the closer proximity of the new road alignment to the dwellings. These effects are related to construction activities, noise and vibration, removal of private gardens and mature planting and existing boundary fencing. Effects, which will be mitigated through screening and management of the timing of activities to minimise disruption, are assessed as **low-moderate adverse**. Permanent effects (Operation) take account of the changed context to a heavily urbanised landscape setting and are assessed as **low adverse**.

- Visual effects are likely to increase when compared with the original design, due to the proximity of the proposed road alignment to neighbouring properties. However, the future plan-enabled urban context means that the visibility and visual quality of roading infrastructure will be coherent with a future urban landscape typology. Temporary (construction) visual effects on adjoining properties are **moderate-low adverse** and on transient viewers are **low adverse**. Operational visual effects after mitigation on adjoining properties and transient viewers are assessed as **low adverse**.

Recommendations identified in the existing LVA and AEE that applied to the original design are considered relevant to the design change area in NoR1. Further to those mitigation measures, this addendum includes additional recommendations to mitigate constructions and operational effects as described in Sections 7.2 & 7.4.

ATTACHMENT 22

**SUPPORTING GROWTH ALLIANCE
REDHILLS – REPRESENTATIVE VIEWPOINTS**



Redhills Arterial Transport Network: Viewpoint location map



LC1: View from the pasture land at 458 Don Buck Road of the general landscape character

Project Name: Te Tupu Ngātahi Supporting Growth | Redhills Arterial Transport Network | Addendum to the Landscape and Visual Effects Assessment Redhills Arterial Transport Network

Date: 21 February 2023

Status: Draft

Revision: 0.1

Prepared By: Riyasp Bhandari

Reviewed By: Catherine Hamilton

Figure: LA002

Photo Location: -36.831369, 174.602974

Photo taken using a Canon EOS 5D Camera with 50mm lens at 2pm on 20/02/2023



VP 1: View from 458 Don Buck Road to the north towards the upper section of proposed North-South road corridor

Project Name: Te Tupu Ngātahi Supporting Growth | Redhills Arterial Transport Network | Addendum to the Landscape and Visual Effects Assessment Redhills Arterial Transport Network

Date: 21 February 2023

Status: Draft

Revision: 0.1

Prepared By: Riyasp Bhandari

Reviewed By: Catherine Hamilton

Figure: LA003

Photo Location: -36.831618,174.603707

Photo taken using a Canon EOS 5D Camera with 50mm lens at 2pm on 20/02/2023



VP 2: View from northern paper road looking south-west towards the proposed design change area

Project Name: Te Tupu Ngātahi Supporting Growth | Redhills Arterial Transport Network | Addendum to the Landscape and Visual Effects Assessment Redhills Arterial Transport Network

Date: 21 February 2023

Status: Draft

Revision: 0.1

Prepared By: Riyasp Bhandari

Reviewed By: Catherine Hamilton

Figure: LA004

Photo Location: -36.827692, 174.605464

Photo taken using a Canon EOS 5D Camera with 50mm lens at 2pm on 20/02/2023



VP 3: View from northern paper road looking south towards the proposed design change area

Project Name: Te Tupu Ngātahi Supporting Growth | Redhills Arterial Transport Network | Addendum to the Landscape and Visual Effects Assessment Redhills Arterial Transport Network

Date: 21 February 2023

Status: Draft

Revision: 0.1

Prepared By: Riyasp Bhandari

Reviewed By: Catherine Hamilton

Figure: LA005

Photo Location: -36.827510,174.603780

Photo taken using a Canon EOS 5D Camera with 50mm lens at 2pm on 20/02/2023



VP 4: View from southern paper road looking north-east towards the proposed design change area

Project Name: Te Tupu Ngātahi Supporting Growth | Redhills Arterial Transport Network | Addendum to the Landscape and Visual Effects Assessment Redhills Arterial Transport Network

Date: 21 February 2023

Status: Draft

Revision: 0.1

Prepared By: Riyasp Bhandari

Reviewed By: Catherine Hamilton

Figure: LA006

Photo Location: -36.835463,174.596243

Photo taken using a Canon EOS 5D Camera with 50mm lens at 2pm on 20/02/2023



VP 5: View from southern paper road looking north-east towards the proposed design change area

Project Name: Te Tupu Ngātahi Supporting Growth | Redhills Arterial Transport Network | Addendum to the Landscape and Visual Effects Assessment Redhills Arterial Transport Network

Date: 21 February 2023

Status: Draft

Revision: 0.1

Prepared By: Riyasp Bhandari

Reviewed By: Catherine Hamilton

Figure: LA007

Photo Location: -36.833691,174.596950

Photo taken using a Canon EOS 5D Camera with 50mm lens at 2pm on 20/02/2023



VP 6: View from southern paper road looking east towards the proposed design change area

Project Name: Te Tupu Ngātahi Supporting Growth | Redhills Arterial Transport Network | Addendum to the Landscape and Visual Effects Assessment Redhills Arterial Transport Network

Date: 21 February 2023

Status: Draft

Revision: 0.1

Prepared By: Riyasp Bhandari

Reviewed By: Catherine Hamilton

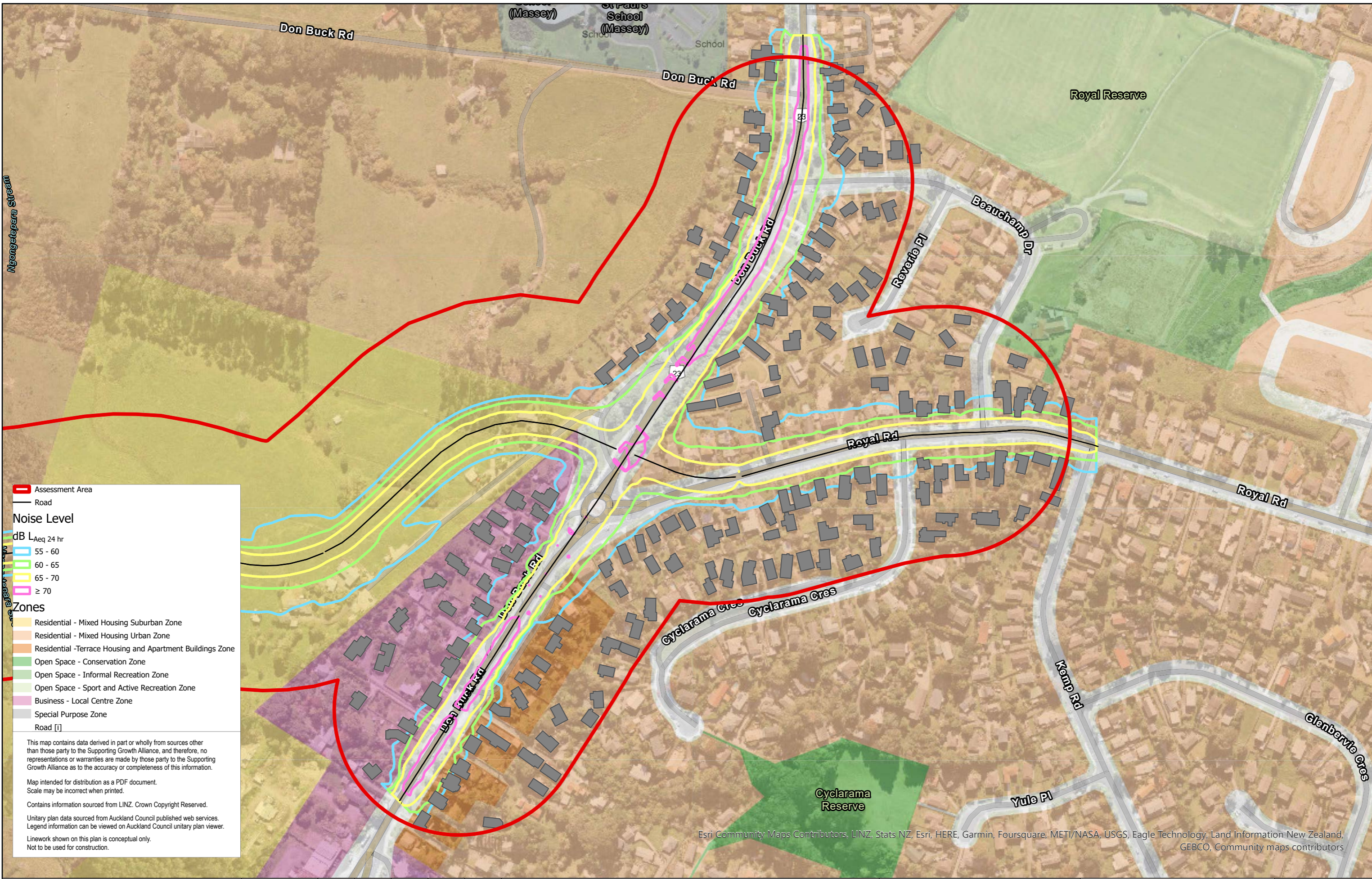
Figure: LA008

Photo Location: -36.831968,174.596838

Photo taken using a Canon EOS 5D Camera with 50mm lens at 2pm on 20/02/2023

ATTACHMENT 23

**SUPPORTING GROWTH ALLIANCE
NOISE CONTOURS – REDHILLS**



Assessment Area

Road

Noise Level

dB LAeq 24 hr

- 55 - 60
- 60 - 65
- 65 - 70
- ≥ 70

Zones

- Residential - Mixed Housing Suburban Zone
- Residential - Mixed Housing Urban Zone
- Residential - Terrace Housing and Apartment Buildings Zone
- Open Space - Conservation Zone
- Open Space - Informal Recreation Zone
- Open Space - Sport and Active Recreation Zone
- Business - Local Centre Zone
- Special Purpose Zone
- Road [i]

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Legend information can be viewed on Auckland Council unitary plan viewer.

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Map Scale @ A3:



Revision	Author	Verified	Approved	Date
1	Author	DRAFT	DRAFT	dd/mm/yyyy

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Supporting Growth

AUP Maps - Do Minimum Scenario - NoR 1

Working Plans of Te Tupu Ngatahi.
For the purpose of INTERNAL WORKSHOPS (not for wider distribution).

Client:	Supporting Growth
Project:	North West HIF



Discipline:	GIS
Drawing No:	SGA-NV-NW-013

School

Date Printed:

Name: 3_Do_Minimum_AUP

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Assessment Area

— Road

Noise Level

dB LAeq 24 hr

- 55 - 60
- 60 - 65
- 65 - 70
- ≥ 70

Zones

- Residential - Mixed Housing Urban Zone

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Supporting Growth

AUP Maps - Do Minimum Scenario - NoR 1

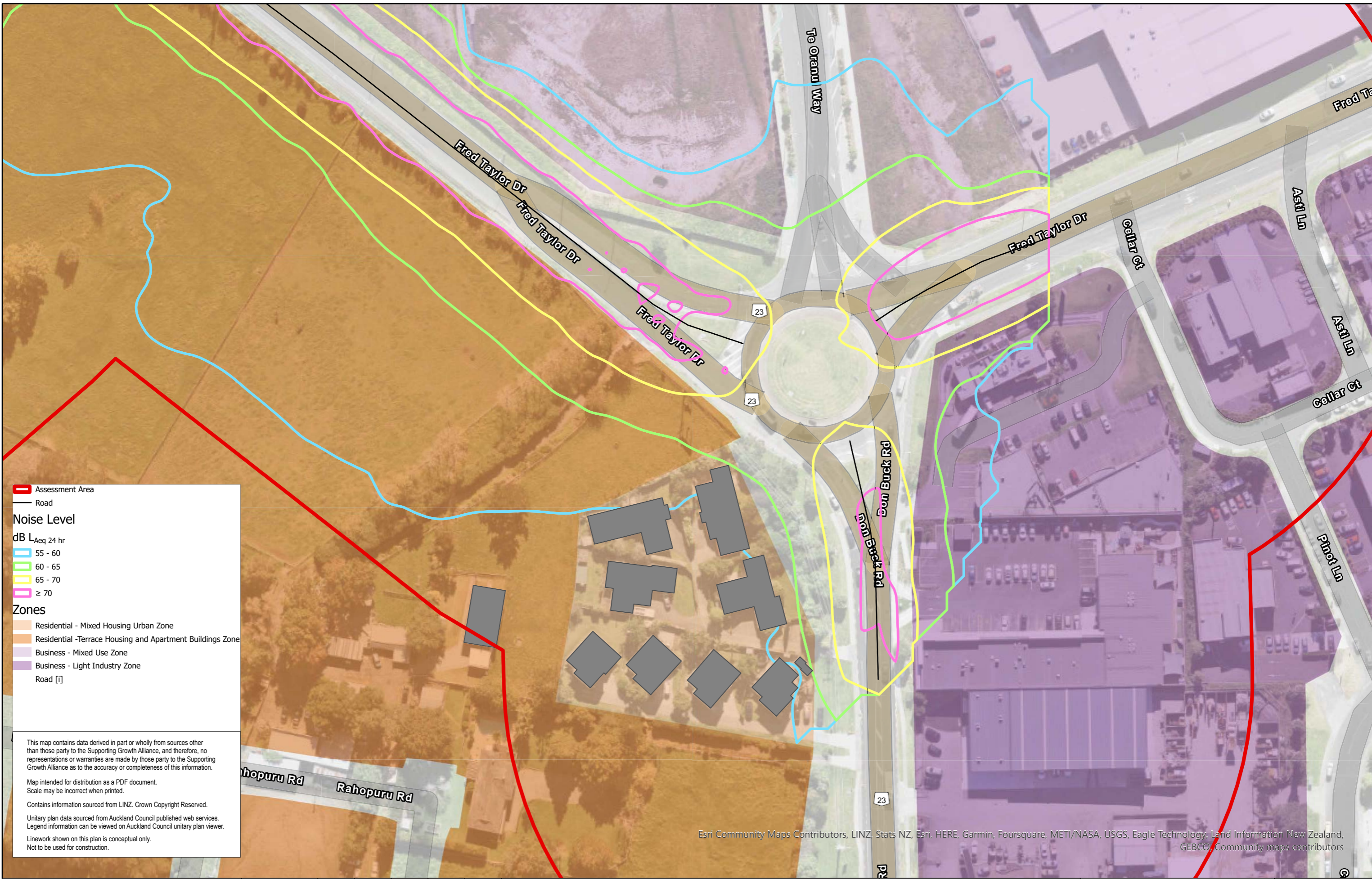
Working Plans of Te Tupu Ngatahi.
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322

Client:	Supporting Growth
Project:	North West HIF



Discipline:	GIS
Drawing No:	SGA-NV-NW-013



Assessment Area
 Road

Noise Level
 dB LAeq 24 hr

- 55 - 60
- 60 - 65
- 65 - 70
- ≥ 70

Zones

- Residential - Mixed Housing Urban Zone
- Residential - Terrace Housing and Apartment Buildings Zone
- Business - Mixed Use Zone
- Business - Light Industry Zone
- Road [i]

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Supporting Growth

AUP Maps - Do Minimum Scenario - NoR 2b

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323

Client: **Supporting Growth**

Project: **North West HIF**



Discipline: **GIS**

Drawing No: **SGA-NV-NW-013**



Assessment Area

— Road

Noise Level

dB L_{Aeq} 24 hr

- ▭ 55 - 60
- ▭ 60 - 65
- ▭ 65 - 70
- ▭ ≥ 70

Zones

- ▭ Residential - Single House Zone
- ▭ Residential - Mixed Housing Suburban Zone
- ▭ Rural - Countryside Living Zone
- Road [i]

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Supporting Growth

AUP Maps - Do Minimum Scenario - NoR 2c

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Client: **Supporting Growth**

Project: **North West HIF**



Discipline: **GIS**

Drawing No: **SSGA-NV-NW-013**

ATTACHMENT 24

**SUPPORTING GROWTH ALLIANCE
ADDENDUM TO TRIG ROAD
LANDSCAPE VISUAL ASSESSMENT**

Trig Road Corridor Upgrade Addendum to the 2020 Landscape and Visual Effects Assessment

March 2023

Version 0.3

Document Status

Responsibility	Name	Signature
Author	Riyasp Bhandari, NZILA Landscape Architect / WSP New Zealand Ltd	
Reviewer	Catherine Hamilton, NZILA Fellow / WSP New Zealand Ltd	
Approver	Joao Machado, New Zealand Planning Institute (Associate) / WSP New Zealand Ltd Bridget O'Leary, Planning Lead, Te Tupu Ngātahi Supporting Growth Alliance	 

Revision Status

Version	Date	Reason for Issue
0.1	24/02/2023	Draft
0.2	02/03/2023	Final Draft to client
0.3	21/03/2023	Final

Disclaimer

This is a draft document for review by specified persons at Auckland Transport and the New Zealand Transport Agency. This draft will subsequently be updated following consideration of the comments from the persons at Auckland Transport and the New Zealand Transport Agency. This document is therefore still in a draft form and is subject to change. The document should not be disclosed in response to requests under the Official Information Act 1982 or Local Government Official Information and Meetings Act 1987 without seeking legal advice.

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Glossary of Defined Terms and Acronyms

Acronym/Term	Description
AEE	Assessment of Effects on the Environment report
AT	Auckland Transport
AUP:OIP	Auckland Unitary Plan: Operative in Part
CPTED	Crime Prevention through Environmental Design
LVA	Landscape and Visual Assessment
NoR	Notice of Requirement
NZILA	New Zealand Institute of Landscape Architects
PPC5	Proposal Plan Change 5
RMA	Resource Management Act 1991
SEA	Significant Ecological Area
Te Tangi a te Manu	Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines
Te Tupu Ngātahi	Te Tupu Ngātahi Supporting Growth Alliance
TDM	AT's Transport Design Manual: AT Engineering Design Codes – Transport Design Manual
TRCU	Trig Road Corridor Upgrade
ULDMP	Urban Landscape and Design Management Plan
Waka Kotahi	Waka Kotahi New Zealand Transport Agency

1 Introduction

This report is an addendum to the Landscape and Visual Effects Assessment (LVA) for the Trig Road Corridor Upgrade (the Project), dated August 2020. The existing LVA was prepared for Te Tupu Ngātahi Supporting Growth Alliance (Te Tupu Ngātahi) in support of Auckland Transport's (AT) Notice of Requirement (NoR) under the Resource Management Act 1991 (RMA) to designate land for the construction, operation and maintenance of the Project and the application for resource consents for the Project.¹

The Project forms part of the Supporting Growth Programme; a collaboration between Auckland Transport (AT) and Waka Kotahi NZ Transport Agency (Waka Kotahi), to investigate, plan and deliver the transport networks needed to support Auckland's future urban growth areas over the next 10-20 years. The Project consists of the widening and upgrade of Trig Road between the SH18 off-ramps and Hobsonville Road from a current rural standard road corridor into an urban standard road corridor to support the future urban environment on both sides of Trig Road. The widening will allow for the provision of a two-lane arterial standard corridor, as well as a dedicated, bi-directional cycleway on the eastern side of the corridor and new footpaths on either side of the corridor. The Project also includes the signalisation of the intersections at Trig Road and Hobsonville Road, and Luckens Road and Hobsonville Road, as well as the upgrade of Hobsonville Road between these intersections.²

This addendum exclusively addresses the landscape effects that may occur from a design change within the Project. The design change involves a shift in the stormwater dry pond from 9 Trig Road to predominantly sit within the parcel boundary of 7 Trig Road, with an overlap to 9 Trig Road, refer Figure 2. The dry pond was relocated due to the presence of an existing wetland at 9 Trig Road.

Purpose and Scope of this Report

The purpose of this addendum is to assess the landscape and visual effects resulting from the design change, which are described more fully in Section 6. The general premise of the existing LVA assessment still stands, with one amendment made to the shift in location of the stormwater dry pond approximately 90m further south from its original location.

The landscape and visual effects of the design change on the future receiving environment, both during the construction and operational phases of the Project, are covered, as well as recommended measures to avoid, remedy and/or mitigate potential adverse effects.

The addendum forms part of the suite of technical reports prepared to support the AEE for the Project. Consideration has been given to the assessments prepared for ecology and stormwater. This addendum should be read in conjunction with the existing LVA and AEE, which contains further details on the history and context of the Project.

Catherine Hamilton has reviewed the existing LVA and agrees with the methodology, conclusions and recommendations of the report.

¹ Te Tupu Ngātahi Trig Road Corridor Upgrade – Assessment of Landscape and Visual Effects, 2020

² Te Tupu Ngātahi Trig Road Corridor Upgrade – Assessment of Landscape and Visual Effects, 2020

2 Statutory and Non-Statutory Considerations

The following statutory documents were assessed in relation to the design change. Any changes in statutory documents since the existing LVA was prepared, are noted below:

Resource Management Act (RMA)

No change recorded and current RMA is consistent with the existing LVA

RMA matters of relevance to landscape have been reviewed in relation to the design change. The following considerations apply:

In relation to Matters of National Importance – (s.6 RMA):

- s.6(a): The site does not fall within the definition of a coastal landscape (including the coastal marine area), wetlands, and lakes and rivers and their margins, and as such s.6(a) does not apply.
- s.6(b): The site is not identified as an Outstanding Natural Landscape or Outstanding Natural Feature

In relation to Other Matters (s.7 RMA):

- s.7(c): The maintenance and enhancement of amenity values applies
- s.7 (f): Maintenance and enhancement of the quality of the environment applies

Auckland Unitary Plan Operative in Part (AUP:OIP)

Proposed Plan Change 5 (PPC5): Whenuapai Plan Change

As outlined in the AEE, PPC5 was a Council-led proposed plan change to the AUP:OIP, with the intent of rezoning the Whenuapai Structure Plan Stage 1 area adjacent Trig Road. PPC5 was withdrawn in June 2022.³

Non-statutory guidance documents:

The following non-statutory documents were referenced in the assessment in relation to the design change area of (the Project), with no changes to guidance noted as part of this addendum:

- **Te Tupu Ngātahi Design Framework – Version 1.0**
- **Whenuapai Structure Plan – September 2016**

As stated in the AEE:

“The Whenuapai Structure Plan was completed in 2016 by the Council and sets out the framework for transforming Whenuapai from a semi-rural environment to an urbanised community over the next 10 to 20 years. The structure plan will be implemented through a statutory plan change process to the AUP:OIP to rezone land within the area from FUZ to different urban zones”.

- **Transport Design Manual – Auckland Transport**
- **Bridging the Gap: Waka Kotahi NZ Transport Agency Urban Design Guidelines (2013)**
- **New Zealand Transport Agency Landscape Guidelines (Final Draft, 2014)**

³ Te Tupu Ngātahi North-West Assessment of Effects on the Environment (AEE) – Trig Road Corridor Upgrade, 2022

3 Methodology

This assessment follows a similar methodology to that used for the existing LVA, but with a specific focus on the design change. The approach further recognises the guidance provided in Te Tangi a te Manu, Landscape Assessment Guidelines (TTatM)⁴ which were published after the preparation of the existing LVA. The Guidelines are now widely accepted as the basis for best practice within a statutory planning context in Aotearoa New Zealand.

In accordance with TTatM guidelines, landscape is recognised as having overlapping dimensions of physical, associative, and perceptual values. Effects on landscape values consider not only the physical environment but also associative values derived from peoples' relationships with the landscape and how it is perceived (including visual values).

TTatM guidelines go further to promote integration of Te Ao Māori – our unique indigenous worldview, as a keystone of Aotearoa landscape assessment practice. It is not however, the role of the Landscape Architect to determine these values unless designated to do so. Accordingly, this addendum does not specifically address Mana Whenua values which are being considered through a separate, parallel process. Refer to the AEE for details.

Natural character, as defined by Te Tangi a te Manu, is the distinct combination of an area's natural characteristics and qualities, including degree of naturalness. Natural character is the outcome of physical environment and perception. Within the RMA (Section 6(a)) natural character only relates to the coastal environment and to waterbodies and their margins, rather than the landscape in its entirety.

The design change does not sit within the RMA (Section 6(a)) definition of Natural Character and as such is considered only in a more general sense of the natural characteristics and qualities of the landscape.

The steps taken to assess the landscape effects of the design change are set out below:

- A desktop analysis of relevant background information was undertaken to review information pertinent to the design change, including the existing LVA, relevant statutory and planning provisions, updated NoR design plans and technical assessments from relevant specialists.
- A site visit was undertaken on 20 February 2023 by Catherine Hamilton and Riyasp Bhandari to evaluate the landscape values and character of the receiving environment and its wider landscape context. The visual catchment and viewing audience were identified, and photographs taken from representative viewpoints.
- Engagement with Te Tupu Ngātahi Planning Lead and AEE Programme Wide Lead to understand project context and details of the design change.
- Discussions with ecologist and stormwater specialists on respective technical assessments pertaining to the design change.

⁴ 'Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines', Tui Pito Ora New Zealand Institute of Landscape Architects, July 2022

- The design change was evaluated to understand any implications for landscape values and character that depart from the existing LVA.
- An assessment of Landscape and Visual Effects pertaining to the design change was prepared.

Effects Scale

The nature (qualitative) and magnitude (degree/level) of effects change both during construction and following construction once the landscape strategy including mitigation measures have been assessed. The landscape architecture profession promotes a seven-point scale as a universal scale to describe the level of effects as a qualitative measure as described below, between very low and very high rather than concluding the level of effects (less than minor, minor or more than minor) which rests with the planner.

Table 1. 7-point scale rating to describe magnitude of landscape effects. Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines

Very Low (V-L)	Low (L)	Low- Moderate (L-M)	Moderate (M)	Moderate- High (M-H)	High (H)	Very High (V-H)
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Change in a landscape does not, of itself, necessarily constitute an adverse landscape or visual effect. Landscape is dynamic and is constantly changing over time in both subtle and more dramatic transformational ways. These changes are both natural and human induced. Within the context of continual landscape change, is the importance of managing human induced change so that significant adverse effects are avoided or sufficiently mitigated to reduce the effects of the change in land use. Furthermore, landscape and visual effects can be temporary or permanent and that also contributes to the significance of landscape and visual effects.

Effects include positive effects. Consideration is given to enhancing positive effects through alignment between mitigation and design, rather than merely minimizing harm which is considered by the landscape profession to be a low baseline.

4 Existing Environment

Physical context

The Project is located along Trig Road and Hobsonville Road in Whenuapai, approximately 13km north-west of Auckland Central Business District. The Project is in a transitional landscape on the edge of the existing built urban environment of northwest Auckland. The surrounding context consists of the established urban environment to the south and east (West Harbour), and a developing urban environment to the west (Westgate).

A full description of the landscape setting and wider context of the design change area is provided in the existing LVA. In summary, the landscape is a transitional peri-urban landscape distinguished by an interplay of grazed pastureland, hedgerows, single amenity trees and associated dwellings and ancillary buildings set within. Lifestyle and suburban development occupies the mid-distant ground, with arterial transport corridors to the north and south-east. A mix of exotic and native vegetation

follow hydrological patterns including stream tributaries and low wetlands. The Project area occupies elevated terrain which falls away across gently to steeply undulating landform towards the gullies of Trig Stream and its tributaries in the north.

Trig stream tributaries are interlaced with the rolling landform and have natural forming wetlands established along the gullies, which offer landscape values at a wider scale. The hydrological features within the Trig Stream catchment have been notably modified as a result of rural land use and agrarian activities, however, are considered to have moderate ecological value.⁵ While the underlying hydrological patterns with interlacing landforms and vegetative corridors are evident in the local and wider landscapes, the landscape values have degraded over time due to modification of rural land use accommodate urban development.

Viewing context

The viewing context is consistent with that described in the existing LVA and mainly consists of private landowners located along Trig Road corridor. The transient viewing audience is comprised of people travelling along Trig Road, who are afforded views of the Project area from openings between hedgerows along the berm.

The shift in the location of the proposed stormwater dry pond further south sits well within the sightlines of the private properties at #16 to #28 Trig Road and #30 to #34 Ryans Road and enables more prominent views of the Project than what was previously assessed in the existing LVA.

Two lifestyle blocks (7 & 9 Trig Road) are located partially within the designation of the design change area and the dwellings on these sites are assumed to be removed.

5 Future Receiving Environment

In the context of the RMA assessment process, the effects of the construction and operation of the design change are considered in terms of the future plan-enabled environment; that is, the anticipated environment at the time the project is likely to be constructed. Therefore, both the existing environment as the baseline, and the likely future receiving environment inform this addendum to the LVA.

The Whenuapai Structure Plan: 2016 sets out the framework for transforming the Future Urban Zone (FUZ) surrounding Trig Road corridor from a semi-rural environment to a highly urbanized zoning over the next 10-20 years. The Whenuapai Structure Plan will be implemented following a statutory plan change process to the AUP:OIP, within the FUZ. The proposed zoning identified in the structure plan amongst the design change area is classified as 'medium-density' and 'high-density'.⁶

The future receiving environment within which the design change area is set will be medium to high density residential housing, mixed with a neighbourhood centre and a school, as documented in the Whenuapai Structure Plan 2016.

Based on the AUP:OIP and Whenuapai Structure Plan 2016, it anticipated that the likelihood of landscape change from rural to urban will be high due to zoning provisions and development

⁵ Te Tupu Ngātahi Trig Road Corridor Upgrade – Assessment of Landscape and Visual Effects, 2020

⁶ Te Tupu Ngātahi North-West Assessment of Effects on the Environment (AEE) – Trig Road Corridor Upgrade, 2022

pressure. For this assessment, it is assumed that the Project will be constructed within a transitional landscape environment and will be operated within an urban or rapidly urbanising environment.

The magnitude of effect on the land use change regarding the land use planning context within the design change area has been identified in Table 2 below. This has been used to inform the assumptions made on the likely future environment.

Table 2. Likelihood and magnitude of land use change

Existing environment	Current AUP:OP Zoning	Likelihood of Change for the environment ⁷	Likely Receiving Environment ⁸
Rural	Future Urban Zoning	High ⁹	Urban

6 Proposal

6.1 Review of Design Changes

Within the area of NoR, the original design (Map 05, documented in Appendix 2 of the existing LVA), identifies the stormwater dry pond location largely within 9 Trig Road parcel boundary, between CH340-440 (refer Figure 1). The dry pond was originally situated at a low point, within an existing natural wetland and would likely have adverse effects on the wetland’s ecology. In addition, the original proposal involved high volumes of fill batter slopes within proximity to existing wetlands which would considerably alter the landform and natural flow paths associated with it.

⁷ Based on AUP:OP zoning/policy direction

⁸ Based on AUP:OP zoning/policy direction

⁹ There are areas of existing Residential Zone land that has recently been intensified (i.e. new build developments), as such is unlikely to change in the near future.

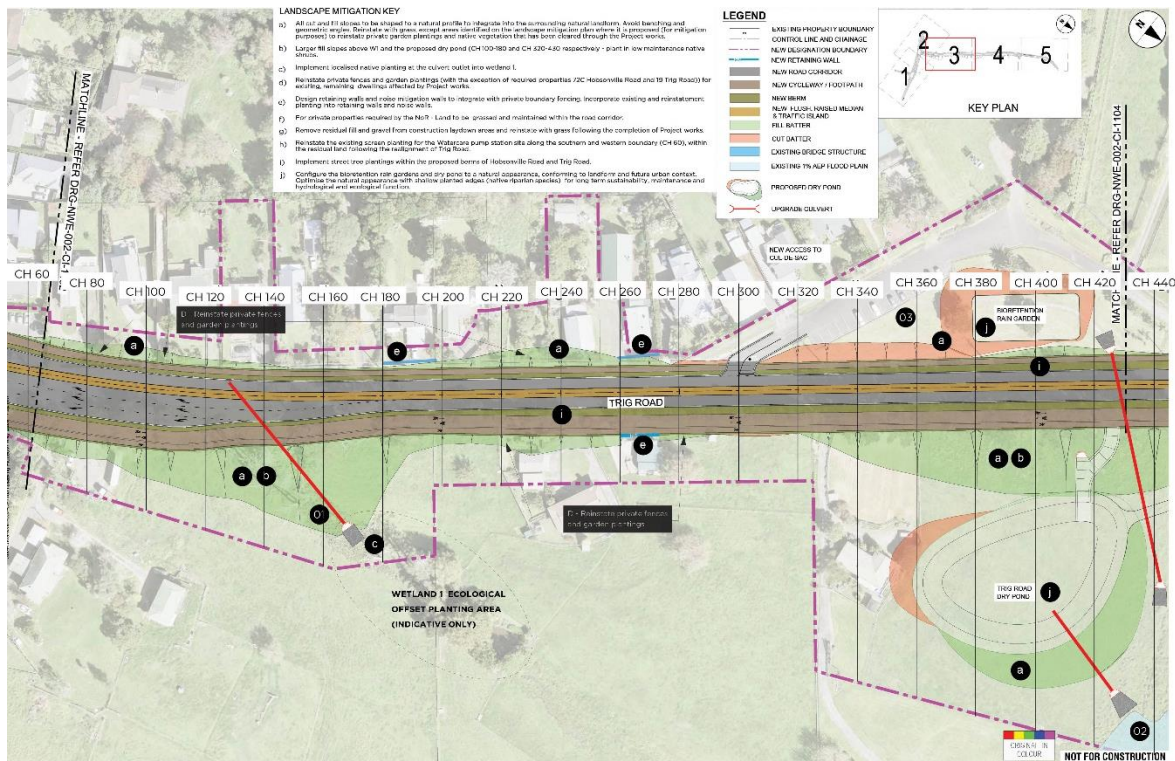


Figure 1: NoR before design change (Original stormwater dry pond location) between chainage 340-440 at 9 Trig Road. Refer Appendix 3 of existing LVA

The design change in this addendum consists of relocating the stormwater dry pond approximately 90m south from the original location (refer Figure 1) to straddle the boundary between 7 & 9 Trig Road (CH280-350). This change proposal is documented in the Trig Road Resource Consent drawing SGA-DRG-NEW-002-CI-1103 (refer Figure 2). Refer Appendix 1 for reference drawings for the Project.

The objective for the change in location of the attenuation pond was to alleviate adverse ecological effects from potential wetland impact and maintain landscape and natural values. The new location reduces wetland reclamation and is still sufficiently close to the topographical low point to function from a stormwater perspective, whilst maintaining existing stream crossings to the rear of 7 & 9 Trig Road. The proposal reduces the amount of fill batter slopes, thus minimising the level of modification to the natural landform.

All existing private properties and structures within the designation boundary are to be demolished and removed, leaving the closest residential properties on the opposite (western) edge of Trig Road corridor.

The existing fixed viewing audience along western Trig Road (between CH150-350) are likely to receive greater adverse landscape and visual effects, due to the shift in the stormwater dry pond. These effects are assessed during the construction and operational phase of the overall project works in Section 7 below.

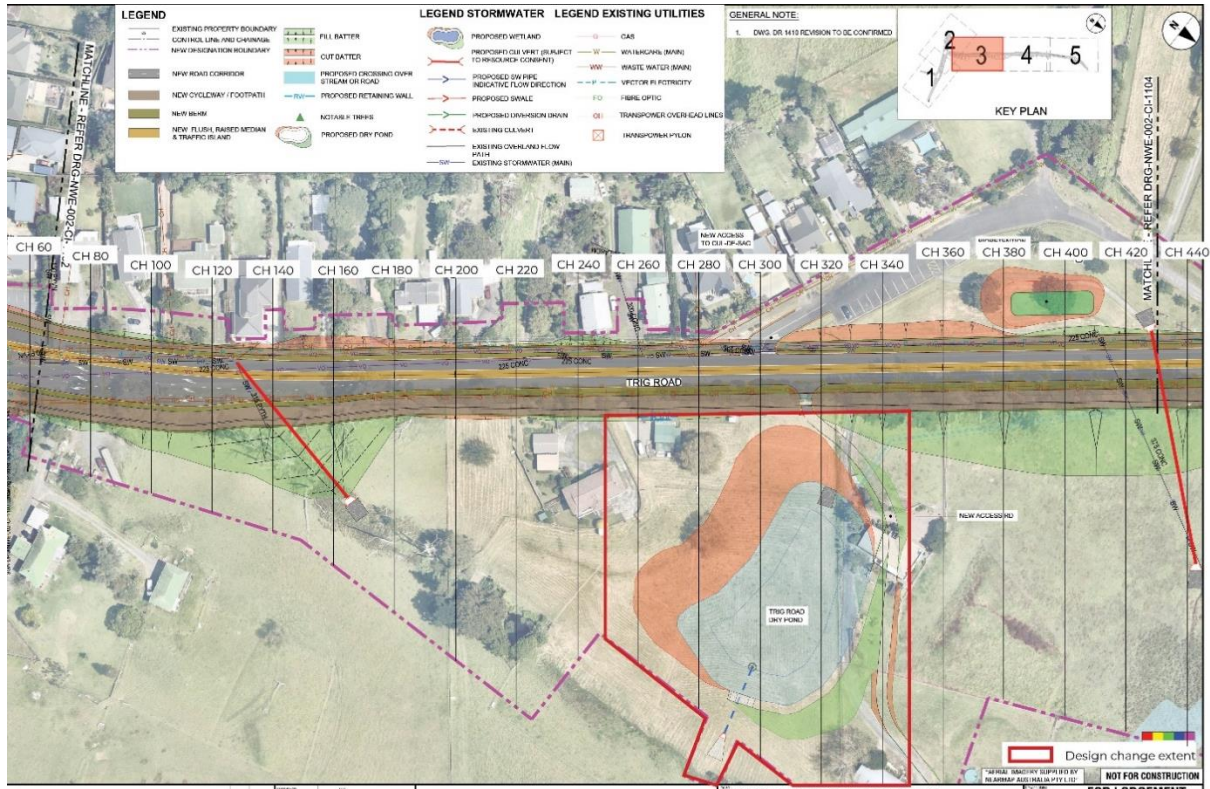


Figure 2: NoR after design change (Proposed stormwater dry pond location) between chainage 250-350 at 7 & 9 Trig Road. Refer drawing SGA-DRG-NEW-002-CI-1103, rev B

7 Assessment of Landscape and Visual Effects of the Design Change

7.1 Assessment of Construction Effects

The assessment of landscape and visual effects associated with the design change during the construction phase are coherent with the conclusions reached in the existing LVA, with the following minor departures.

- Adverse visual effects on the fixed viewing audience along western Trig Road between CH150-CH350 resulting from construction
- Adverse landscape effects resulting from construction relating to increased cut volumes of earthworks around the formation of the proposed stormwater dry pond.

The principal elements of the design change area that give rise to landscape and visual effects are outlined below:

- Physical work, including the construction of the stormwater dry pond undertaken near waterways and wetlands which could cause waterway, riparian and wetland bed disturbance and result in negative impacts on the biophysical values of the landscape. Large construction buffer areas are proposed around wetlands and stream crossings to allow for construction works to be undertaken around sensitive natural features within the Project area.
- Re-alignment and profiling of the landform to accommodate the new stormwater dry pond.
- Clearance of vegetation removal from existing landscape between CH280-350 of the pastureland.
- Proximity to the fixed viewing audience

Overall, the physical landscape effects resulting from the construction phase are assessed as **low adverse**, taking into account mitigation measures. The following sections 7.1.1, 7.1.2 and 7.1.3 provide the reasoning for this conclusion.

Careful management of effects during construction will be required. Management plans are to form part of the construction methodology and a suite of management plans have been outlined in the AEE and will be secured by designation conditions. These management plans will also apply to the design change area of (the Project).

7.1.1 Demolition and Earthworks

7.1.1.1 Formation and Earthworks

The proposed stormwater dry pond location, as shown in Figure 2, will require large volumes of cut and fill to achieve the proposed gradients as illustrated in the stormwater drawings (refer Appendix 2 of the Stormwater Assessment).

Fill batter slope volumes around the proposed dry pond and access road is slightly reduced in comparison to the original design of the dry pond. However, a greater volume of excavation is required around the dry pond to achieve the appropriate grade for pond to function as intended. This will result in modification of the landform, which will likely incur the loss of landscape values associated with perceived naturalness of the landscape. It should, however, be noted that the landscape is already a highly modified landscape which has been altered from its natural state to

enable agrarian activities and as such does not possess a high level of naturalness. Natural Landscape values can potentially be restored through landscape mitigation measures outlined in section 7.2.3.

In addition, a new open channel inlet to the dry pond will need to be excavated for any residual groundwater flow into the pond. It is recommended appropriate levels of controls are in place to avoid sediment flow from entering the wetland (TR-W4) and the proposed stormwater dry pond as set out in the Erosion and Sediment Control Plan prepared in support of the Project.

The nature of landscape effects are considered to be adverse, due to further modification of the landform, resulting in a change in the landscape character. This is also likely to have associated visual effects on transient and fixed viewing audiences at Trig Road from exposed earthworks.

Overall, the formation of the landform and earthworks draws similar conclusions to what was assessed in the existing LVA. Therefore, the construction effects are considered to have **low-moderate adverse** effects on the physical attributes of the landscape, following implementation of mitigation measures outlined in the existing LVA and AEE.

7.1.1.2 Vegetation Clearance

Vegetation removal within the design change area is minimal. Minor singular tree specimens and groupings of exotic mature trees and amenity planting that fall within the parcel boundaries of rural lifestyle blocks (7 & 9 Trig Rd) will need to be removed to accommodate the stormwater dry pond and other stormwater features.

Construction effects relating to vegetation clearance are likely to be negligible due to the minimal landscape values that this vegetation contributes to landscape character. Furthermore, the Project area is not within an SEA and possesses low terrestrial ecological habitat as documented in the ecological assessment.¹⁰

Overall, the construction effects are assessed as **very low adverse** and in line with the assessment of the existing LVA, provided mitigation measures are implemented.

7.1.2 Impact on private properties

The affected residential properties include the rural lifestyle blocks within the designation zones, namely 7 and 9 Trig Road. These dwellings are assumed to be removed, along with existing driveways, private gardens, mature trees and associated fencing. Where private properties and structures are removed within the designation, it is recommended the landform be re-grassed after completion of works, to preserve landscape amenity.

The overall construction impact on neighbouring private properties is expected to be **low-moderate adverse**. These adverse effects can be further reduced with appropriate mitigation measures, refer section 7.1.4.

7.1.3 Visual Effects

Visual effects associated with construction works will include site establishment, demolition, vegetation clearance, bulk earthworks, land formation and construction of site heavy infrastructure.

¹⁰ Te Tupu Ngātahi Trig Road Corridor Upgrade – Assessment of Ecological Effects, 2022

These are likely to endure over 16-18 months for the total construction phase. The project works are proposed to occur in 3 stages.¹¹

Visual effects have been assessed in terms of the existing visual quality of the landscape and visibility for fixed and transient audiences in relation to the design change. This information, together with consideration of the likely future receiving environment, are taken into account. Overall, visual effects during construction must be considered against the sensitivity of the future receiving environment which will likely possess high frequency of construction activities and higher density developments enabled within the Whenuapai Structure Plan:2016.

Representative viewpoints were selected from public viewpoints along Trig Road to determine views commonly experienced by transient viewing audiences. Private properties were not entered as part of the assessment as permissions had not been sought and granted, however viewpoints were selected adjacent to the residential properties as a proxy.

Viewing audiences affected by the project works within the design change area between (CH 150-350), will include:

- Private properties along western Trig Road between #16 and #28, and along Ryans Road between #30 and #34
- Transient viewers traversing at 50km/h on Trig Road
- Transient public walking along Trig Road

Construction activities will introduce a significant amount of infrastructure works into a receiving environment that currently possesses a moderate degree of visual amenity derived from the scenic qualities of rural landscape attributes, including glimpsed views to the far horizon. Visual intrusion of construction works will have the greatest effects on residents near the construction works on the western side of Trig Road when assessed in relation to the existing environment. Views will become dominated by construction activity including large machinery and earthworks. This will result in a reduction of visual amenity in relation when assessed against the existing environment.

When considered in the context of the future receiving environment, timing of construction works will have a large bearing on visual effects. Within this assessment, it is assumed that construction associated with the plan-enabled urban development will be prevalent in the visual landscape, and existing scenic qualities will have already been substantially altered from the current peri-urban state to an urban landscape predominantly characterised by buildings and infrastructure.

Irrespective of the extent of urban change in the future receiving environment, it is still considered necessary to afford mitigation to the residential properties on the western side of Trig Road. The level of visual effects is higher for properties at 16-28 Trig Road and 30-34 Ryans Road, than what was assessed in relation to the original design's viewing catchment. While some private properties (as mentioned above) will have natural vegetative screening that will remain in their front yards to protect from visual impact, other properties will be exposed to the physical works and are expected to experience heightened visual effects. Overall, fixed viewing audience are likely to benefit from temporary visual screening, as provided for in the Construction Environmental Management Plan (CEMP) condition, to reduce adverse visual effects.

Public viewing audiences will generally be transient and are likely to experience adverse visual effects in areas where the landscape has been subject to vegetation removal and where construction

¹¹ Te Tupu Ngātahi Trig Road Corridor Upgrade – Assessment of Landscape and Visual Effects, 2022

activities along Trig Road are evident over the construction period. For these viewers, only fleeting views are afforded and are not considered to have adverse effects overall.

Overall, the visual effects for private properties between CH150-350 is **moderate adverse** due to prolonged viewing of ongoing construction activities within the viewing catchment, reducing to **moderate-low adverse** with mitigation measures.

The temporary visual effects on the existing landscape is expected to be **low adverse** for transient viewing audience.

Table 3. Summary of Landscape Effects during Construction

Stage	Assessment Summary	Magnitude of Effect	Nature of Effect	Recommendations
Construction	<p>Landscape effects during construction will result from earthworks, formation of bunds and removal of minor vegetation. When considered in the context of the likely future receiving environment, and taking account of mitigation measures, adverse effects are assessed as low.</p> <p>Visual effects are greatest for residents on the western side of Trig Road at 16-28 Trig Road and 30-34 Ryans Road, due to their close proximity to the Project area. The level of effects will be influenced by the extent to which the Future Receiving Environment is predominantly characterised by urban development at the time of construction, and hence existing rural amenity values have been altered.</p> <p>Taking account of the urbanisation of the future receiving environment, and mitigation measures to screen activities, the visual effects are assessed as moderate-low adverse.</p> <p>Overall, landscape and visual effects relating to construction are assessed as Low adverse.</p>	Low	adverse	7.1.5

7.1.4 Recommended Measures to Avoid, Remedy or Mitigate Construction Effects

This addendum considers the measures to avoid remedy or mitigate construction effects described in the existing LVA and AEE are appropriate to the proposed design change area. These measures include the following:

- Cut and fill slopes are proposed to be shaped to a natural slope to integrate with the surrounding landform and reinstated with appropriate landscaping.
- Localised planting is proposed to mitigate physical landscape effects and to assist with integrating the larger fill slopes further into adjacent landscape and ecological mitigation measures along Trig Road.
- Reinstatement of the Project area following the completion of construction, including the removal of residual fill and gravel from construction laydown areas and reinstatement with grass and landscaping.
- Minimise work in and around existing waterways and wetlands where practicable.

In addition, further mitigation measures applicable to the design change area have been proposed below:

- Minimise vegetation loss by restricting the construction footprint as far as practicable, as required by the ULDMP condition.
- Provide temporary screening during construction for adversely affected residential areas, as provided for in the CEMP condition.

7.2 Assessment of Operational Effects on Landscape

The assessment of landscape and visual effects associated with the design change during operational phase is coherent with the conclusions reached in the existing LVA, with the following minor departures:

- Adverse visual effects resulting from the operational phase on the fixed viewing audience along western Trig Road between CH150-350 of the rural landscape.
- Adverse landscape effects resulting from the operational phase relating to increased earthworks around the formation of the proposed stormwater dry pond.
- Positive effects resulting from planting established around stormwater dry pond fill batters which contributes to enhanced visual amenity for fixed and transient viewers.

7.2.1 Landscape Character Effects

The upgrade of Trig Road corridor will become a feature of a future intensively built receiving environment that includes a significant wider transport network. This network will include walking and cycling provisions, public transport links and road user safety in the existing landscape. There are very few landscape values of the existing environment that would be adversely affected by the design change as part of the overall Project.

There is opportunity in to restore landscape and visual amenity values through mitigation measures, which will later be integrated in the future receiving environment. Given the baseline of almost no natural values within the designation and surrounds, this presents a real opportunity for betterment.

Where modification of landform will occur through the introduction of fill slopes and cut embankments, it is recommended to plant these slopes with native species. These vegetated embankments would potentially create a green visual buffer that could tie in with the offset planting around the natural wetlands in order to promote positive effects and enhance landscape values. This will likely form a natural backdrop to the streetscape upgrade in the foreground for transient and fixed viewing audiences. Careful consideration of species selection will be required at a detailed design phase to ensure no terrestrial or aquatic habitat is created to minimise the risk of bird strike.

It is recommended all landscape and urban design considerations within the design change area are to be designed, constructed, and managed in keeping with the Urban & Landscape Design Management Plan (ULDMP).

Based on the above considerations, the operational effects on existing and future anticipated landscape character are assessed as **moderate positive** considering post-mitigation measures, outlined in section 7.2.3.

7.2.2 Visual Effects

Due to the shift in location of the proposed stormwater dry pond, the visual effects will be experienced predominantly by those residents located at 16-28 Trig Road and 30-34 Ryans Road compared to that of the original assessment in the existing LVA. Fixed viewing audience have a higher sensitivity to visual change because of the permanent nature of the change and associations in relation to established views.

The design change constitutes a minor shift in location for what will eventually be a soft landscape/wetland feature that will be generally integrated into the natural landform. When compared with the existing landscape character derived from modified grazed pastureland and scant indigenous vegetation cover, the dry pond and its surrounding vegetation batters will introduce a landscape feature that contributes to enhanced amenity values.

Once operational, it is considered that the design change area will absorb and offer enhanced streetscape appeal within the future receiving environment, along with specimen trees along the edge that would naturally tie in with the mitigation planting on fill batter slopes.

Overall, it is expected that the visual amenity effects associated with the design change area are considered **moderate positive** for private properties and **neutral** for transient viewing audience following mitigation.

Table 4. Summary of Operational Landscape Effects

Stage	Assessment Summary	Magnitude of Effect	Nature of Effect	Recommendations
Operational	Landscape effects during operation will be enhanced compared with the current modified grazed pastureland.	Moderate	positive	7.2.4

Stage	Assessment Summary	Magnitude of Effect	Nature of Effect	Recommendations
	<p>This is due to the introduction of extensive native vegetation around a soft engineered dry pond that sits close to existing topography. Overall, the effect will be to introduce increased biotic landscape values which will contribute to the naturalness of the existing and anticipated future receiving environment.</p> <p>Visual amenity values for residents on the western side of Trig Road are derived from the scenic qualities of the grazed pastureland. This landscape is in transition to a highly built urban environment and as such, the design change proposals will afford a naturalised landscape feature within the built setting.</p> <p>Overall, landscape and visual effects are assessed as moderate-positive following mitigation.</p>			

7.2.3 Recommended Measures to Avoid, Remedy or Mitigate Operational Effects

This addendum considers the measures to avoid remedy or mitigate operational effects described in the existing LVA and AEE are appropriate to the proposed design change area. These measures include the following:

- All cut and fill slopes will be shaped to a natural profile to integrate into the surrounding natural landform and reinstate with grass or planting where practicable.
- Stormwater features will be configured to a natural appearance with appropriate vegetation and integrated into the surrounding urban landscape context, so that any physical landscape effects are ameliorated.
- Residual land parcels acquired through the Project should be grassed and maintained within the road corridor.
- Street tree planting will be provided along Trig Road, which along with indigenous planting within the stormwater features will assist with moderating the shift from rural to urban landscape character.

In addition, further mitigation measures are applicable to the design change area have been proposed below. It is noted where these are addressed by the current resource consent application. The remaining recommendations should be addressed through future outline plan processes:

- Planting plan - The planting plan should incorporate riparian planting for affected wetland zones, as proposed in the draft Wetland Restoration and Enhancement Plan consent conditions. Selected species are to discourage any forming of habitat within the proposed stormwater dry pond area to reduce risk of bird strike.

8 Conclusion

This addendum agrees with the general conclusions of the existing LVA. During construction, it is expected the physical attributes of the landscape will be adversely affected by modification of landform, physical works within proximity of waterways and natural wetlands and removal of remnant vegetation. Adverse visual effects are also likely to be heightened for transient and fixed viewing audiences for whom the construction works will be visible. These landscape effects can be mitigated by implementing appropriate measures and management controls as outlined in the AEE. Furthermore, introduction of indigenous amenity planting to fill batter slopes and around the stormwater dry pond will uplift the landscape values and enhance visual amenity.

The land to the east of Trig Road displays a strong rural landscape character which in itself is a highly modified landscape possessed of low natural landscape attributes. The future anticipated land use is expected to become more densely urbanised in accordance with the Whenuapai Structure Plan, 2016. This zoning framework will alter the landscape character surrounding the proposed stormwater dry pond so that the facility will become a somewhat naturalised feature within a built urban environment.

Due to the unresolved nature of the current structure plan framework, design strategies can be incorporated to further enhance natural landscape values associated with the dry pond and ultimately contribute positively to the landscape amenity of the future urban environment.

In conclusion, with the implementation of the recommended mitigation measures, potential adverse landscape and visual effects of the design change will be avoided, while the permanent outcomes are assessed as contributing positively to landscape character.

Overall, the landscape and visual effects of the design change area during construction are **low adverse**, while effects during operational phase of the Project are **moderate-positive** following mitigation.

Recommendations identified in the existing LVA and AEE that applied to the original design are also considered relevant to the design change area. Further to the mitigation measures outlined in the existing LVA and AEE, this addendum includes additional recommendations to mitigate construction and operational effects. These are described in Sections 7.1.4 & 7.2.3.

9 Appendix 1 – Representative Viewpoints

ATTACHMENT 25

**SUPPORTING GROWTH ALLIANCE
TRIG ROAD – REPRESENTATIVE VIEWPOINTS**



Trig Road Corridor Upgrade: Viewpoint location map



VP 1: View from the driveway entrance of 9 Trig Road looking east and south-east of existing land use

Project Name: Te Tupu Ngātahi Supporting Growth | Trig Road Corridor Upgrade | Addendum to the Landscape and Visual Effects Assessment of Trig Road Corridor Upgrade

Date: 21 February 2023

Status: Draft

Revision: 0.1

Prepared By: Riyasp Bhandari

Reviewed By: Catherine Hamilton

Figure: LA002

Photo Location: -36.813194,174.622954

Photo taken using a Canon EOS 5D Camera with 50mm lens at 4.30pm on 20/02/2023



VP 2: View along the grass berm of 7 Trig Road corridor looking into the proposed design change area

Project Name: Te Tupu Ngātahi Supporting Growth | Trig Road Corridor Upgrade | Addendum to the Landscape and Visual Effects Assessment of Trig Road Corridor Upgrade

Date: 21 February 2023

Status: Draft

Revision: 0.1

Prepared By: Riyasp Bhandari

Reviewed By: Catherine Hamilton

Figure: LA003

Photo Location: -36.813456,174.623115

Photo taken using a Canon EOS 5D Camera with 50mm lens at 4.30pm on 20/02/2023



VP 3: View from Ryans Road looking east towards Trig Road. Proposed design change area behind hedgerow of trees

Project Name: Te Tupu Ngātahi Supporting Growth | Trig Road Corridor Upgrade | Addendum to the Landscape and Visual Effects Assessment of Trig Road Corridor Upgrade

Date: 21 February 2023

Status: Draft

Revision: 0.1

Prepared By: Riyasp Bhandari

Reviewed By: Catherine Hamilton

Figure: LA004

Photo Location: -36.813509, 174.622772

Photo taken using a Canon EOS 5D Camera with 50mm lens at 4.30pm on 20/02/2023

ATTACHMENT 26

**SUPPORTING GROWTH ALLIANCE
NOISE CONTOURS
TRIG ROAD SOUTH**



Assessment Area

Roads

Noise Level

dB LAeq 24 hr

- 55 - 60
- 60 - 65
- 65 - 70
- ≥ 70

Zones

- Residential - Mixed Housing Suburban Zone
- Residential - Mixed Housing Urban Zone
- Open Space - Conservation Zone
- Open Space - Informal Recreation Zone
- Business - Light Industry Zone
- Future Urban Zone
- Strategic Transport Corridor Zone
- Special Purpose Zone
- Road [i]

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Map Scale @ A3:		Revision	Author	Verified	Approved	Date	Title: Supporting Growth AUP Maps - Mitigation 1 Scenario <small>Working Plans of Te Tupu Ngatahi. For the purpose of INTERNAL USE ONLY (not for wider distribution).</small>	Client: Supporting Growth		Discipline: GIS
		1	Author	DRAFT	DRAFT	dd/mm/yyyy		Project: North West HIF		Drawing No: SGA-NV-NW-013

