

Section 32 Evaluation Report

Part 2: Noise

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1.0 Overview and Purpose

1.1 Introduction to the resource management issue/s

Noise can have an adverse effect on health and amenity values, and has the potential to interfere with communication and disturb sleep. The purpose of the Noise Chapter is to appropriately manage noise and vibration to avoid or minimise effects, while still enabling a diverse range of activities to occur.

There is great variation in the background noise levels between different parts of the City, in the characteristics of the noise generated, and in what noise reducing measures could be easily implemented. For instance, sound insulation can make a difference, especially for noise sensitive activities.

The measurement of noise arising from any activity must be in accordance with New Zealand Standard NZS6801:2008 Acoustics – Measurement of Environmental Sound, and with New Zealand Standard NZS6802:2008 – Environmental Noise. An example where another standard may be expressly provided for is the application of New Zealand Construction Standard NZS6803:1999 Acoustics Construction Noise. Some other specific activities have applicable noise standards including wind farms, airports, and ports. Sometimes compliance with standards is incorporated in resource consent conditions, but the existence of the various standards also needs to inform the provisions of the district plan.

The Operative District Plan (ODP) manages noise through conditions supporting rules, and via standards, within various zone chapters. In contrast, the National Planning Standards requires that the District Plan (DP) uses a single, citywide Noise chapter. Noise generated in one zone can create adverse effects in another, so the Noise chapter is an efficient way of addressing effects.

Several major sources of noise are addressed in the proposed provisions. These are Wellington Airport, the Port (CentrePort), railway lines, and state highways. For that reason, these particular noise sources are identified by the DP, with consistent approaches developed for management. Some activities that generate noise are exempt from the noise rules of this chapter as they are not controlled under the RMA.

2.0 Reference to other evaluation reports

This report should also be read in conjunction with the following evaluation reports:

Report	Relationship to this topic
Temporary Activities	This chapter contains provisions providing for temporary activities, including some specific rules and standards relevant to noise. These include military training exercises, and special entertainment events at the Basin Reserve and Wellington Stadium.
Other chapters containing noise references include: <ul style="list-style-type: none"> • General Industrial Zone (GIZ-P3) • Port Zone (PORTZ-P4) • Quarry Zone (QUARZ-R3, QUARZ-PREC01-R1, QUARZ-PREC01-S5) • Stadium Zone (STADZ-P2) • Tertiary Education Zone (TEDZ-R3) • Waterfront Zone (WFZ-R9) • Lincolnshire Farm Development Area (DEV2-P4) 	<p>Most chapters of the DP do not contain specific noise provisions. Minor exceptions to this are where noise is listed as a general amenity consideration, or in relation to specific management plan requirements, when considering potential effects.</p> <p>Development of noise sensitive activities within any zone subject to the Airport or Port noise overlays is modified by provisions of the Noise chapter. Similarly, the ability to develop up to the full MDRS parameters is modified by the Noise chapter provisions.</p>

3.0 Strategic Direction

The following objectives in the Strategic Direction chapter of the Proposed District Plan that are relevant to this issue/topic are:

CC-O2	Wellington City is a well-functioning Capital City where:
	<ol style="list-style-type: none"> 1. A wide range of activities that have local regional and national significance are able to establish. 2. Current and future residents can meet their social, cultural, economic and environmental wellbeing. 4. Urban intensification is delivered in appropriate locations and in a manner that supports future generations to meet their needs. 6. Values and characteristics that are an important part of the City's identity and sense of place are identified and protected.
CC-O3	Development is consistent with and supports the achievement of the following strategic City goals:
	<ol style="list-style-type: none"> 1. Compact: Wellington builds on its existing urban form with quality development in the right locations. 2. Resilient: Wellington's natural and built environments are healthy and robust, and we build physical and social resilience through good design.
CEKP-O3	Mixed use and industrial areas outside of Centres:
	<ol style="list-style-type: none"> 2. Provide for activities that are compatible with other Centres-based activities

SCA-O4	
The adverse effects of infrastructure are managed having regard to the economic, social, environmental and cultural benefits, and the technical and operational needs of infrastructure.	
SCA-O5	
Infrastructure operates efficiently and safely and is protected from incompatible development and activities that may create reverse sensitivity effects.	
UFD-O6	Development supports the creation of liveable, well-functioning urban environments
1. Are safe and well-designed	

An evaluation of these objectives is contained in the companion Section 32 Evaluation Overview Report.

4.0 Regulatory and policy direction

In carrying out a s32 analysis, an evaluation is required of how the proposal achieves the purpose and principles contained in Part 2 of the RMA.

Section 5 sets out the purpose of the RMA, which is to promote the sustainable management of natural and physical resources.

Sustainable management '*means managing the use, development, and protection of natural and physical resources to enable people and communities to provide for their social, economic and cultural wellbeing and for their health and safety, while -*

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

In achieving this purpose, all persons exercising functions and powers under the RMA also need to:

- Recognise and provide for the matters of national importance identified in s6
- Have particular regard to the range of other matters referred to in s7
- Take into account the principles of the Treaty of Waitangi/Te Tiriti o Waitangi in s8.

4.1 Section 6

There are no s6 matters relevant to this topic.

4.2 Section 7

The s7 matters that are relevant to this topic are:

Section	Relevant Matter
7(b)	The efficient use and development of natural and physical resources. Some land use activities have a direct operational or functional need to emit noise.
7(c)	The maintenance and enhancement of amenity values.

	The emission of noise from activities has the potential to have adverse effects on the amenity values of a site or area.
7(f)	Maintenance and enhancement of the quality of the environment. The quality of the environment can be affected by activities that emit noise, this can result in adverse effects on the health and wellbeing of the environment.

4.3 Section 8

There are no s8 principles relevant to this topic.

4.4 National Direction

4.4.1 National Policy Statements

There are five National Policy Statements (NPS) currently in force:

- NPS for Electricity Transmission 2008
- New Zealand Coastal Policy Statement 2010
- NPS for Renewable Electricity Generation 2011
- NPS for Freshwater Management 2020
- NPS on Urban Development 2020

NPS	Relevant Objectives / Policies
NPS on Urban Development 2020	<p>In relation to densification where affected by Airport noise.</p> <p>Nationally significant infrastructure means all of the following:</p> <ul style="list-style-type: none"> (a) State highways (h) any airport (but not its ancillary commercial activities) used for regular air transport services by aeroplanes capable of carrying more than 30 passengers (i) the port facilities of each port company <p>3.31 Tier 1 territorial authorities implementing intensification policies</p> <ul style="list-style-type: none"> (2) If the territorial authority considers that it is necessary to modify the building height or densities in order to provide for a qualifying matter (as permitted under Policy 4), it must: <ul style="list-style-type: none"> (a) identify, by location, where the qualifying matter applies; and (b) specify the alternate building heights and densities proposed for those areas. <p>3.32 Qualifying matters</p> <ul style="list-style-type: none"> (1) In this National Policy Statement, qualifying matter means any of the following:

	<p>(c) any matter required for the purpose of ensuring the safe or efficient operation of nationally significant infrastructure</p> <p>(e) an area subject to a designation or heritage order, but only in relation to the land that is subject to the designation or heritage order</p> <p>(h) any other matter that makes high density development as directed by Policy 3 inappropriate in an area, but only if the requirements of clause 3.33(3) are met.</p> <p>3.33 Requirements if qualifying matter applies</p> <p>(2) The evaluation report prepared under section 32 of the Act in relation to the proposed amendment must</p> <p>(a) demonstrate why the territorial authority considers that:</p> <p style="padding-left: 20px;">(i) the area is subject to a qualifying matter; and</p> <p style="padding-left: 20px;">(ii) the qualifying matter is incompatible with the level of development directed by Policy 3 for that area; and</p> <p>(b) assess the impact that limiting development capacity, building height or density (as relevant) will have on the provision of development capacity; and</p> <p>(c) assess the costs and broader impacts of imposing those limits.</p>
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4.4.2 Proposed National Policy Statements

In addition to the five NPSs currently in force there are also two proposed NPS under development, noting that these are yet to be issued and have no legal effect:

- Proposed NPS for Highly Productive Land
- Proposed NPS for Indigenous Biodiversity

Neither proposed NPS is relevant to noise.

4.4.3 National Environmental Standards

In addition to the NPS documents there are nine National Environmental Standards (NES) currently in force:

- NES for Air Quality 2004
- NES for Sources of Human Drinking Water 2007
- NES for Electricity Transmission Activities 2009
- NES for Assessing and Managing Contaminants in Soil to Protect Human Health 2011
- NES for Telecommunication Facilities 2016
- NES for Plantation Forestry 2017
- NES for Freshwater 2020
- NES for Marine Aquaculture 2020
- NES for Storing Tyres Outdoors 2021

The following standard/s and associated provisions relevant to this topic are:

NES	Relevant Regulations
NESTF	Regulation 24 – Noise limits for cabinets in road reserve
	Regulation 25 – Noise limits for cabinet not in road reserve
NESETA	Noise and vibration from construction activity Regulation 37 – permitted activities Regulation 38 – controlled activities
NESPF	Noise and vibration Regulation 98 Permitted activity: territorial authority Regulation 99 Restricted discretionary activity: territorial authority

All these provisions override any rules in the District Plan for the regulated activity described in NES.

4.4.4 National Planning Standards

The National Planning Standards require that where the following matters are addressed, they must be included in the Noise chapter in Part 2 – District-Wide Matters of the District Plan:

- Noise provisions (including noise limits) for zones, receiving environments or other spatially defined area
- Requirements for common significant noise generating activities
- Sound insulation requirements for noise sensitive activities and limits to the location of those activities relative to noise generating activities.
- Any noise-related metrics and noise measurement methods must be consistent with the *Noise and vibrations metrics* Standard¹ set out in section 15 of the NPS.
- The Noise chapter must include cross-references to any relevant noise provisions under the *Energy, infrastructure, and transport heading*.

Note that the New Zealand Planning Standards refers to “New Zealand Standard 6805:1992 Airport noise management and land use planning” – but in relation to noise measurement only.

4.5 National Guidance Documents

The following national guidance documents are considered relevant to this topic:

Document	Relevant provisions
New Zealand Standards	
NZS 6801:2008 Acoustics – Measurement of environmental sound	This standard defines sound in community environments and sets out methods for their measurement, in order to create a consistent measurement of sound for all conditions in the scope of the community environments listed.

¹ These are the NZ Standards referred in the table under section 4.5 of this evaluation report

NZS 6802:2008 Acoustics – Environmental Noise	This standard sets out methods for the assessment of noise and provides guidance on setting noise limits.
NZS 6803:1999 Acoustics – Construction noise	This standard sets out recommended upper noise limits for noise from construction work in residential areas. It allows for the production of significant noise between the hours of 7.30am to 6pm during weekdays, and has provisions relating to: <ul style="list-style-type: none"> • the measurement of noise from construction, maintenance, and demolition work • the assessment of this noise to determine whether action is required to control those noise emissions.
NZS 6805:1992 – Airport Noise Management and Land Use Planning	The Standard is intended to be applicable to ensure communities living close to an airport are properly protected from the effects of aircraft noise while recognising the need to be able to operate an airport efficiently. It limits the average daily aircraft noise exposure. Inside an area defined by a fixed Air Noise Boundary, the noise exposure can be greater than the permitted average.
NZS 6809:1999 Acoustics – Port Noise Management and Land Use Planning	As above for Airport noise, with limits set in relation to a Port Noise Boundary.
NZS 6806:2010 Acoustics Road Traffic Noise – new and altered roads	Sets out procedures and requirements for the prediction, measurement, and assessment of road traffic noise for new and substantially altered state highways and local roads. The Standard is intended to be used primarily by local authorities and road controlling authorities.
NZS 6807:1994 – Noise from Helicopter Landing Areas	Details procedures for the measurement and assessment of noise from helicopter landing areas and recommends land use planning measures where necessary to mitigate the adverse effects of noise on land uses surrounding the helicopter landing area.
New Zealand Standard 6808:2010 Acoustics – Wind farm noise	This standard recommends limits on wind farm noise, as well as providing tools to assess, measure and limit noise from wind turbines by considering predicted noise emitted from the proposed farm through assessing background sound, wind conditions, topography, receiver locations, and turbine layout, number, size and type.
Other	
Guidance Material for Land Use at or Near Aerodromes (Civil Aviation Authority of NZ, June 2008)	Noise issues to do with aerodromes / airports are the responsibility of the local controlling authority and the CAA does not have any statutory function in relation to aircraft or aerodrome noise. The Minister does produce rules relating to noise abatement measures under Civil Aviation Rule Part 93 which are published on behalf of the aerodrome operator from local authority requirements.

As noted by Standards NZ: “Standards are agreed specifications for products, processes, services, and performance. They are generally voluntary but can be mandatory when cited in Acts, regulations or other legislative instruments”.

There are currently no New Zealand standards for vibration; typically the standards below are adopted for the management of vibration in New Zealand and are used to form rules in a number of District Plans:

- DIN 4150-3:1999 Structural vibration – Effects of vibration on structures
- NS 8176.E Vibration and shock – Measurement of vibration in buildings from land based transport and guidance to evaluation of its effects on human beings
- BS 5228-2:2009 Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration

This section 32 evaluation identifies noise as a qualifying matter for being less enabling of the medium density residential standards.

4.6 Regional Policy and Plans

Regional Policy Statement for the Wellington Region 2013 (RPS)

The table below identifies the relevant provisions and resource management topics for Noise contained in the RPS. Note that mostly, these provisions are relevant to considering noise in relation to:

- General adverse effects.
- ‘Sensitive activities’, which are vulnerable to noise effects.
- ‘Reverse sensitivity’, which can impact on a legally established and operating activity that emits noise.
- Regionally significant infrastructure which emits noise (Airport, port, state highways, rail).

RPS Appendix 3 - Definitions	
Section	Relevant matters
<u>Definitions</u> Regionally significant infrastructure	Regionally significant infrastructure includes: ... <ul style="list-style-type: none"> • The Strategic Transport Network², as defined in the Wellington Regional Land Transport Strategy 2007-2016 • Wellington International Airport • Commercial Port Areas within Wellington Harbour and adjacent land used in association with the movement of cargo and passengers ...
<u>Definitions</u> Sensitive activities	Activities which suffer should they experience adverse effects typically associated with some lawful activities. For example, dust or noise from a quarry or port facility, noise in an entertainment precinct, smells from a sewage treatment facility. Activity considered sensitive includes, any residential activity, any early childhood education centre, and any hotel or

² The strategic transport network as shown by the 2007-2016 RLTS includes railways lines, state highways, the Port, and the Airport

RPS Appendix 3 - Definitions	
Section	Relevant matters
	other accommodation activity. It may also include hospitals, schools and respite care facilities.
<u>Definitions</u> Reverse sensitivity	Reverse sensitivity means the vulnerability of an existing lawfully established activity to other activities in the vicinity which are sensitive to adverse environmental effects that may be generated by such existing activity, thereby creating the potential for the operation of such existing activity to be constrained.

RPS 3.3 Energy, Infrastructure and Waste	
Section	Relevant matters
3.3(b) Infrastructure	The roading network, airports, the port, telecommunication facilities, the rail network and other utilities and infrastructure, including energy generation, transmission and distribution networks, are significant physical resources. This infrastructure forms part of national or regional networks and enables communities to provide for their social, economic, and cultural wellbeing and their health and safety. The efficient use and development of such infrastructure can be adversely affected by development. For example, land development can encroach on infrastructure or interfere with its efficient use. Infrastructure can also have an adverse effect on the surrounding environment. <i>For example, the operation or use of infrastructure can create noise which may adversely impact surrounding communities. These effects need to be balanced to determine what is appropriate for the individual circumstances.</i>

RPS 3.11 Soil and Minerals	
Section	Relevant matters
3.11(b) Minerals	Mineral resources are fixed in location, unevenly distributed and finite. Extraction processes, sites and transportation routes can create adverse environmental effects. If activities sensitive to the effects of extraction, processing and transportation are established nearby, the full and efficient future extraction of these resources can be compromised. Additionally, <i>reverse sensitivity effects</i> can arise where a new sensitive activity must either accept or protect itself from the effects associated with the working site. These effects are most likely to arise where working sites and their access routes are adjacent to residential and rural-residential subdivisions or adjacent to areas which can be subdivided. In such circumstances, the new activities would need to incorporate provisions that ensure adequate protection from <i>potential effects such as noise</i> , dust and visual impacts from the established activity.

RPS 4.1 Regulatory policies – direction to district and regional plans and the Regional Land Transport Strategy	
Section	Relevant matters
Policy 8 – Protecting regionally significant infrastructure	<p>District and regional plans shall include policies and rules that protect regionally significant infrastructure from incompatible new subdivision, use and development occurring under, over, or adjacent to the infrastructure.</p> <p><i>Explanation</i></p> <p>Incompatible subdivisions, land uses or activities are those which adversely affect the efficient operation of infrastructure, its ability to give full effect to any consent or other authorisation, restrict its ability to be maintained, or restrict the ability to upgrade where the effects of the upgrade are the same or similar in character, intensity, and scale. It may also include <i>new land uses that are sensitive to activities associated with infrastructure</i>.</p>

RPS 4.2 Regulatory policies – matters to be considered	
Section	Relevant matters
Policy 60	<p><i>Explanation</i></p> <p>Policy 60 directs that particular regard be given to the social, economic, and environmental benefits of utilising mineral resources within the region. It also requires that particular regard be given to protecting significant mineral resources from incompatible and inappropriate land use alongside. This protection extends to both the land required for the working site and associated access routes. Examples of methods to protect significant mineral resources include the use of buffer areas in which sensitive activities may be restricted, and <i>the use of noise reduction measures</i> and visual screening.</p>

M = policies which must be implemented in accordance with stated methods in the RPS
R = policies to which particular regard must be had when varying a district plan

Regional Plans

There are currently five operative regional plans and one proposed regional plan for the Wellington region:

- Regional Freshwater Plan for the Wellington Region, 1999
- Regional Coastal Plan for the Wellington Region, 2000
- Regional Air Quality Management Plan for the Wellington Region, 2000
- Regional Soil Plan for the Wellington Region, 2000
- Regional Plan for discharges to the land, 1999
- Proposed Natural Resources Plan, appeals version 2021

The proposed Natural Resources Plan (PNRP) replaces the five operative regional plans, with provisions in this plan now largely operative with the exception of those that are subject to appeal.

The table below identifies the relevant provisions for Noise contained in the Regional Plans.

Proposed Natural Resources Plan	
Section	Relevant matters
<u>Definition</u> Noise sensitive activities	Any residential activity, any early childhood education centre, or any hotel, motel or other accommodation activity.
<u>Definition</u> Reverse sensitivity	The vulnerability of an existing lawfully-established activity to other activities in the vicinity which are sensitive to adverse environmental effects that may be generated by such existing activities, thereby creating the potential for the operation of such existing activity to be constrained.
<u>Definition</u> Sensitive activity	Activities which suffer should they experience adverse effects typically associated with some lawful activities. For example, dust or noise from a quarry or port facility, noise in an entertainment precinct, smells from a sewage treatment facility. Activities considered sensitive include any residential activity, any early childhood education centre, and any hotel or other accommodation activity. It may also include hospitals and respite care facilities.
<u>Definition</u> Sensitive area	A sensitive area includes the following: (a) dwelling house, or marae and (b) educational facilities, and (c) public places, and
<u>Definition</u> Regionally significant infrastructure	Regionally significant infrastructure includes: <ul style="list-style-type: none"> • the Strategic Transport Network (including ancillary structures required to operate, maintain, upgrade and develop that network) • Wellington International Airport • Commercial Port Area and infrastructure associated with Port related activities in the Lambton Harbour Area within Wellington Harbour (Port Nicholson) and adjacent land used in association with the movement of cargo and passengers
<u>Definition</u> Port noise control line	The line at or beyond which the rule controlling the emission of noise from port related activities applies and where the noise from port related activities is monitored.

Proposed Natural Resources Plan

	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>PNRP Map 32</p>  </div> <div style="text-align: center;"> <p>PNRP Map 33</p>  </div> </div> <div style="text-align: center; margin-top: 10px;"> <table border="0"> <tr> <td> State Highway</td> <td> Commercial Port Area</td> </tr> <tr> <td> Port noise control line</td> <td> Lambton Harbour Area</td> </tr> <tr> <td></td> <td> Lambton Harbour Area (Northern Zone)</td> </tr> </table> </div>	State Highway	Commercial Port Area	Port noise control line	Lambton Harbour Area		Lambton Harbour Area (Northern Zone)
State Highway	Commercial Port Area						
Port noise control line	Lambton Harbour Area						
	Lambton Harbour Area (Northern Zone)						
<p>Objective O12</p>	<p>The social, economic, cultural and environmental benefits of regionally significant infrastructure, renewable energy generation activities and the utilisation of mineral resources are recognised.</p>						
<p>Policy P12</p>	<p>When considering proposals that relate to the provision of regionally significant infrastructure, or renewable energy generation activities, particular regard will be given to the benefits of those activities.</p>						
<p>Policy P13</p>	<p>The use, development, operation, maintenance, and upgrade of regionally significant infrastructure and renewable energy generation activities are provided for, in appropriate places and ways. This includes by having particular regard to:</p> <ul style="list-style-type: none"> (a) the strategic integration of infrastructure and land use, and (b) the location of existing infrastructure and structures, and (c) the need for renewable energy generation activities to locate where the renewable energy resources exist, and (d) the functional need and operational requirements associated with developing, operating, maintaining and upgrading regionally significant infrastructure and renewable energy generation activities. 						
<p>Policy P14</p>	<p>Regionally significant infrastructure, renewable energy generation activities and significant mineral resources shall be protected from incompatible use and development occurring under, over or adjacent to it, by locating and designing any use and development to avoid, remedy or mitigate any reverse sensitivity effects.</p>						

Proposed Natural Resources Plan

General coastal management conditions

5.7.2(p)

Noise from port-related activities located within the Commercial Port Area shown on Map 32, Map 33 and Map 34 and the Lambton Harbour Area (Northern Zone) shown on Map 32 shall comply with the following noise standards:

- (i) the activity shall not cause excessive noise (defined in section 326 of the Resource Management Act 1991) outside the coastal marine area, and
- (ii) noise shall be measured in accordance with the requirements of NZS 6801:2008 Acoustics – Measurement of environmental sound and NZS 6809:1999 Port noise management and land use planning, and
- (iii) noise from port-related activities in a Commercial Port Area and the part of the Lambton Harbour Area shown on Map 32 shall not exceed the following at or beyond the Port Noise Control Line as shown on Map 32, Map 33 and Map 34, and

Time (any day)	Limits (dB(A))		
	L _{dn}	L _{max}	L _{eq}
Any 5 consecutive 24 hour periods	65	-	-
Any 24 hour period	68	-	-
10pm – 7am		85	60 (9hr) 65 (15mins)

- (iv) CentrePort shall undertake a noise monitoring programme to ensure that noise from port-related activities comply with limits in (p)(iii) at the Port Noise Control Line as shown on Map 32, Map 33 and Map 34. This monitoring will be undertaken in accordance with the Port Noise Management Plan for CentrePort Limited (Dec 2008) and the information shall be reported to the Wellington Regional Council, and conditions (p)(i), (p)(iii) and (p)(iv) shall not apply to the following:
 - (v) noise generated by navigational aids, safety signals, warning devices or emergency pressure relief valves, and
 - (vi) noise generated by emergency work arising from the need to protect life or limb or prevent loss or serious damage to property or minimise or prevent environmental damage, and
 - (vii) noise generated by construction activities which shall meet the standards specified in Table 1 of NZS 6803:1999 Acoustics – Construction Noise, and
 - (viii) noise generated by helicopter landing areas which shall meet the standards specified for commercial areas in Table 1 of NZS 6807:1994 Noise management and land use planning for helicopter landing areas, and
- (r) Habitable rooms in buildings containing noise sensitive activities in a Commercial Port Area, the Lambton Harbour Area and the Lambton Harbour Area (Northern Zone), shown on Map 32, Map 33 and Map 34,

Proposed Natural Resources Plan

shall be protected from noise arising from outside the building by ensuring the external sound insulation level achieves the following minimum performance standards:

Area	Planning Map	Performance standard
Commercial Port Area	Map 32, Map 33, Map 34	$D_{nT,w} + C_{tr} > 35$ dB
Lambton Harbour Area (Northern Zone)	Map 32	$D_{nT,w} + C_{tr} > 35$ dB
Lambton Harbour Area	Map 32 (excluding northern zone)	$D_{nT,w} + C_{tr} > 30$ dB

- (s) Where bedrooms with openable windows are proposed, a positive supplementary source of fresh air ducted from outside is required at the time of fit-out. For the purposes of this requirement, a bedroom is any room intended to be used for sleeping. The supplementary source of air is to achieve a minimum of 7.5L/s per person. The required airflow level is based on the minimum standard for habitable spaces set out in NZS 4303:1990 Ventilation for Acceptable Indoor Air Quality, and

Port Noise Management Plan

- (t) CentrePort shall at all times have a port noise management plan in place.

4.7 Iwi Management Plan(s)

There are no Iwi Management Plans relevant to this topic.

4.8 Relevant plans or strategies

The following plans / strategies are relevant to this topic:

Plan / Strategy	Organisation	Relevant Provisions
Medium Density Housing Assessment Tools: Summary Report 2018	Ministry of Business Innovation & Employment	1.2.4 Liveability Noise Control – Design and ongoing management reduces noise to acceptable levels between dwellings as well as between dwellings and public spaces.
Wellington International Airport Noise Management Plan	WIAL / WCC/ Community	The entire plan is relevant. Note that the NMP is now a condition of the Airport's designation.
Quieter Homes Programme	WIAL	The Quieter Homes Programme is based on outcomes from the LUMINS work (Land Use Management and Insulation for Airport Noise Study). On application by a homeowner within the ODP air noise boundary, WIAL offers a package of noise mitigation measures at either a 100% or 75% subsidy, depending on the degree of aircraft noise experienced. The roll out commenced in 2016 and

		is not programmed to be complete until 2024. Note that the Airport designation conditions require a continuation of the Quieter Homes programme within the Air Noise Boundary.
Port Noise Management Plan 2008	Centreport	The entire plan is relevant. The plan's Port Noise Control Line is the same as shown by map 32 of the PNRP. The PNRP 'inner port noise affected area' equates to the DP Port Zone east of the control line.
On-licence noise management plans	Licence holders	Licence applicants must show how noise from their business will be managed. This must include a noise management plan. If a business is trading past 3am, the NMP must be prepared by an acoustic consultant.
Noise management plans prepared under resource consent conditions	Consent holders / WCC	The conditions of some resource consents require noise management plans – especially in relation to construction noise management.

4.9 Other relevant legislation or regulations

The following additional legislative / regulatory requirements are also relevant to this topic:

Legislation / Regulation	Relevant Provisions
Building Act 2004 and the Building Regulations 1992, Schedule 1, The Building Code	<ul style="list-style-type: none"> • Clause G6 – Airborne and impact sound (safeguard people from illness or loss of amenity as a result of undue noise being transmitted between abutting occupancies) • Clause G4 – Ventilation (safeguard people from illness or loss of amenity due to lack of fresh air)
Health Act 1956	<ul style="list-style-type: none"> • Sections 29-35 – enable the Council to deal with nuisance noise and vibration that is likely to affect people's health
Resource Management Act	<ul style="list-style-type: none"> • Section 16 – duty to avoid unreasonable noise • Section 17 – duty to avoid, remedy or mitigate adverse effects • Section 31(d) – functions of territorial authorities, the control of the emission of noise and the mitigation of the effects of noise • Section 326 – meaning of excessive noise
Resource Management Act	<ul style="list-style-type: none"> • Section 77I and 77L in relation to qualifying matters, if noise is to be considered a qualifying matter for the MDRS, being less enabling of development (on a site specific basis).

5.0 Resource Management Issues Analysis

5.1 Background

The Resource Management Act (RMA) provides a legislative basis for managing the effects of noise and is NZ's principal statute outlining the framework for the management and control of noise and vibration. The Act's provisions are designed to protect people from unreasonable or excessive noise and vibration, whilst protecting the rights of people and industry to make a reasonable level of noise and vibration. In accordance with RMA definitions, noise includes vibration.

Environmental noise in New Zealand is controlled under the RMA and the Health Act 1956. The Health Act contains nuisance provisions, in particular, sections 29-35 of the Health Act deal with nuisances including s29(ka): "Where any noise or vibration occurs in or is emitted from any building, premises, or land to a degree that is likely to be injurious to health".

Under the Health Act, nuisances such as noise are the responsibility of local authorities. This provides a potential alternative mandate and enforcement mechanism for the control of noise. Enforcement under the Health Act can extend to prosecution through the district court.

However, most territorial authorities have adopted the RMA as the main method for controlling environmental noise. Noise within the workplace is dealt with by the Occupational Safety and Health (OSH) Service of the Department of Labour.

The RMA places responsibility for the management of noise both on local authorities and on noise makers. RMA section 31(d) states that it is a function of territorial authorities to control the emission of noise and the mitigation of the effects of noise. Section 16 of the RMA requires all noise makers to adopt the best practicable option to avoid the emission of unreasonable noise. Section 17 of the Act also refers to the general duty of "every person" to avoid, remedy or mitigate adverse effects – which of course includes noise.

As defined in section 2 of the RMA, best practicable option (as referred to under section 16) means "the best method for preventing or minimising the adverse effects on the environment having regard, among other things, to:

- The nature of the discharge or emission and the sensitivity of the receiving environment to adverse effects; and
- The financial implications, and the effects on the environment, of that option when compared with other options; and
- The current state of technical knowledge and the likelihood that the option can be successfully applied."

The duty to adopt the best practicable option is in addition to the duty to comply with district plan noise limits. This duty applies to every person, company, legal entity, and the Crown, and includes persons undertaking activities on designated sites. There are no exceptions.

The enforcement tools available within the RMA to control adverse noise effects in the environment are:

- abatement notices issued by territorial local authorities subject to s322(1)(c)
- enforcement orders to avoid unreasonable noise or enforce plan rules under sections 314-321
- excessive noise direction notices issued by or on behalf of a territorial authority subject to s327.

Excessive noise is defined by section 326 in the following ways:

- “(1) In this Act, the term excessive noise means any noise that is under human control and of such a nature as to unreasonably interfere with the peace, comfort, and convenience of any person (other than a person in or at the place from which the noise is being emitted), but does not include any noise emitted by any—
- (a) aircraft being operated during, or immediately before or after, flight; or
 - (b) vehicle being driven on a road (within the meaning of section 2(1) of the Land Transport Act 1998); or
 - (c) train, other than when being tested (when stationary), maintained, loaded, or unloaded.
- (2) Without limiting subsection (1), excessive noise—
- (a) includes noise that exceeds a standard for noise prescribed by a national environmental standard; and
 - (b) may include noise emitted by—
 - (i) a musical instrument; or
 - (ii) an electrical appliance; or
 - (iii) a machine, however powered; or
 - (iv) a person or group of persons; or
 - (v) an explosion or vibration.”

The definition of excessive noise is relevant to proposed district plan provisions, including in relation to the maximum permitted noise levels set out in standard NOISE-S2 e.g., blasting and electronic sound systems.

5.2 Airport Noise

Airport noise is a significant environmental effect and is experienced well beyond the boundaries of the Airport³. It is perhaps the most significant / sustained noise source within the city. It can have a substantial effect on residential quality of life, as has been evidenced by survey results⁴. Airport noise management issues were extensively canvassed during the notices of requirement hearing held in May 2021, and via the ultimate settlement of appeals via the Environment Court mediation process (June 2022).

The following subsections provide historical background context relevant to Wellington Airport and the assessment of noise. These matters have been reflected in the final form of designation conditions settled by the Environment Court mediation.

(1) The District Plan

The operative district plan permits Airport noise subject to a detailed set of noise rules / standards. The provisions in the district plan were substantially reproduced in the initially proposed designation conditions.

Another operative district plan measure to manage the effects of noise is the Air Noise Boundary (ANB) which is shown by district plan Map 35. The ANB is linked to district plan Rule 11.1.1.1 which requires as a permitted activity, that on a 90 day rolling average, a sound

³ NB: the Airport is subject to the Airport Chapter in the DP. As required by the National Planning Standards framework, that chapter does not include noise management provisions.

⁴ *Wellington International Airport Sound Abatement Survey*, as reported in PowerPoint presentation by Colmar Brunton for Wellington Air Noise Committee, February 2008

level of 65 dB L_{dn} is not exceeded outside the ANB. The origin and relevance of 65 dB L_{dn} as a boundary limit is outlined in section (2) below, part of which is adapted from a report prepared for Auckland International Airport⁵.

In response to Airport noise issues, an Air Noise Management Committee (ANMC) was formed in 1997 and a Noise Management Plan has been developed. The requirement for the ANMC and the Plan is enshrined in district plan provisions (see section (3) below). This management system led to outcomes such as the Quieter Homes initiative (see section (4) below).

(2) New Zealand Standard NZS 6805

Activities Sensitive to Aircraft Noise (“ASAN”) located in areas affected by aircraft noise can result in adverse noise effects on those sensitive activities and can also cause reverse sensitivity effects on the Airport. NZS6805:1992 Airport Noise Management and Land Use Planning (6805) provides guidance to territorial authorities on implementing appropriate land use controls and controls on the noise generated by aircraft using the Airport in order to manage these effects.

Clause 1.1.1 of NZS 6805 states the scope of the standard includes establishing “maximum acceptable levels of aircraft noise exposure around Airports for the protection of community health and amenity values whilst recognising the need to operate an Airport efficiently”. NZS 6805 recommends “practical land use planning controls and Airport management techniques to promote and conserve the health of people living and working near Airports, without unduly restricting the operation of Airports”.

NZS6805 recommends that noise boundaries be developed to achieve its objectives. This involves fixing an Outer Control Boundary (“OCB”) based on 55 dB L_{dn} and a smaller, much closer ANB based on 65 dB L_{dn} . These boundaries represent noise limits which the Airport must not exceed, as well as guidelines for land use planning.

NZS6805 recommends that inside the 65 dB L_{dn} contour, new sensitive activities (ASAN) should be prohibited. Between 55 dB and 65 dB L_{dn} new ASAN should also be prohibited “unless a district plan permits such uses, subject to a requirement to incorporate appropriate acoustic insulation to ensure a satisfactory internal noise environment”. It is understood that this qualification was inserted into NZS6805 to accommodate new ASAN establishing within areas already zoned or designated for such development rather than to facilitate new zoning or designations. The 65 dB L_{dn} boundary is also the location for noise compliance monitoring. The location of noise boundaries is established by calculating noise contours for a future operating scenario at the Airport. A future operating scenario allows for the expected growth of the Airport and NZS6805 recommends a minimum 10-year projection period.

An outcome of the NOR / designation process was the adoption of new noise contours to replace those of the operative district plan shown by Map 35. The new contours are 65 dB as recommended by NZS6805, and 60 dB, which is a variation from the 55 dB contour recommended by the Standard. The Hunt report describes this variation in the following way⁶:

“Extension of mitigation measures out to L_{dn} 55 dBA is not considered warranted. At levels of received aircraft noise below L_{dn} 60 dB, modern thermally efficient building designs coupled with appropriate building materials such as double glazing will allow indoor

⁵ *Auckland International Airport Proposed Northern Runway Assessment of Noise Effects*, Rp 003 2013310a, Marshall Day Acoustics, 24 February 2017

⁶ Page 18 of the Hunt report

aircraft noise levels to be maintained to within acceptable levels without any specific acoustic requirements.”

(3) Air Noise Management Committee and Plan

The Wellington ANMC was formed in 1997, allowing community and industry representatives to advise on the Airport’s Noise Management Plan. The ANMC is an independent body with representatives from residents, the Airport, The Board of Airline Representatives of New Zealand Inc, Airlines, Wellington City Council, Airways Corporation New Zealand and the New Zealand Defence Force. Acoustic experts provide technical advice to the ANMC.

Policy 10.2.5.4 of the operative district plan requires there to be a Noise Management Plan (NMP). The Policy’s explanation sets out expectations for the NMP contents.

- The NMP includes methods and processes for remedying and mitigating adverse effects of Airport noise including:
- Strictly governing the total noise for aircraft movements at Wellington Airport.
- Controlling hours of flight with a curfew in place (from midnight to 6am for domestic flights and international departures, and from 1am to 6am for international arrivals, with allowances for delayed flights and exemptions for emergencies).
- Implementing the Quieter Homes noise mitigation package (section below).
- Controlling engine testing and other land based activities.
- Improving the Airport’s layout and equipment to reduce ground noise.

The Airport designation now provides for the existence of the ANMC and NMP via conditions 32 to 34.

(4) WIAL Quieter Homes Initiative

WIAL offers homeowners within the ANB a subsidised package of acoustic mitigation treatment. The tailored treatments are designed to reduce aircraft noise in habitable rooms to a day/night average (L_{dn}) of 45 dB. Homes built before March 2012 are eligible, with either a 100% or a 75% subsidy of the cost depending on the degree of aircraft noise experienced. Note that the March 2012 cut off appears to have been amended via the designation conditions which require that “The Requiring Authority shall offer to fund noise mitigation for *all existing* residential properties within the Air Noise Boundary in accordance with the Quieter Homes Programme”.

As keeping doors and windows closed substantially reduces the impact of external noise levels, all packages include a mechanical ventilation system. In some cases, ceilings, walls, windows and doors may require further treatments such as insulation, acoustic glazing or new seals.

The initiative’s phased roll out had (as at March 2022) been offered to 627 properties. As a result, 144 applications have been received and 86 packages of treatment have been completed. The initiative commenced in 2016 and was initially programmed for completion in 2023. To date (March 2022) the cost of the programme so far has reached \$16.7 Million (which includes houses that WANT⁷ Limited has purchased and decommissioned where noise levels received are above 75 dbA)

⁷ Wellington Airport Noise Treatment

5.3 Evidence Base - Research, Consultation, Information and Analysis undertaken

The Council has reviewed the operative District Plan, commissioned technical advice and assistance from various internal and external experts and utilised this, along with internal workshops and community feedback to assist with setting the plan framework. This work has been used to inform the identification and assessment of the environmental, economic, social and cultural effects that are anticipated from the implementation of the provisions. This advice includes the following:

Title	Author	Brief synopsis
District Plan Review: Port Noise and Airport Noise Provisions	Malcolm Hunt Associates (June 2022)	This report, authored by Malcolm Hunt, provides a review of draft district plan provisions, submissions received on the DDP, and recommendations for proposed district plan. It recommends amendments and enhancements to the noise provisions relevant to the Airport and the Port so that the Proposed District Plan incorporates worthwhile feedback from submitters and more closely implements the recommendations of relevant NZ noise Standards, also taking into account the likely effects of national directions around densification of urban areas and changes to the RMA.
District Plan Review: Noise and Vibration, Background Report	Wellington City Council – 2021	The report sets out the legislative and regional context for noise and vibration issues. It details the relevant district plan elements that were being reviewed as a part of the Planning for Growth workstream. It also identifies previous district plan changes which have addressed noise and vibration matters, and reviews existing information on noise and vibration. It details the matters required to be considered under the National Planning.
District Plan Review: Noise and Vibration, Issues and Options Report	Wellington City Council – 2021	<p>Two groups of issues are considered in this report:</p> <ul style="list-style-type: none"> • specific issues with the operative district plan provisions; and • issues potentially not adequately addressed in the operative plan. <p>Issues identified with current provisions include definitions and terminology, permitted sound levels, certification, sound and noise insulation, existing rules and standards. Issues potentially not adequately addressed in the district plan include wind farm noise, road traffic noise from new and/or altered roads, noise from specific activities and/or land uses (e.g. dog kennels/ doggy day care, shooting ranges, blasting etc.).</p> <p>Options to address these issues were developed from a review of how other district plans had approached these issues, as well as guidance set out</p>

		in the National Planning Standards and applying this to a Wellington City context.
District Plan Review: Noise and Vibration, Monitoring Report	Wellington City Council – 2021	This report is based on a review resource consents; reviews of five different district plans; and comparative analysis of provisions in those plans. It identifies that noise generating activities often breach the Wellington district plan standards for noise where activities occur in the evening and on weekends. Noise from fixed plant and reverse sensitivity effects from the conversion of buildings to noise sensitive activities (e.g. residential dwellings) was identified as a common issue in the resource consents analysed. The report identifies similarities in how selected district plans address noise and vibration provisions.
Wellington Airport Air Noise Boundary Review	Tonkin & Taylor Limited (May 2022)	The report describes the noise modelling methodology used to generate new Air Noise Boundary contours, prepared using the guidance of New Zealand Standard NZS 6805:1992 'Airport Noise Management and Land Use Planning'. The contours are a projection of the future noise situation considering changes in aircraft movement numbers and the types of aircraft that will be operating in 2050.
Various: Internal and external advice in relation to the Main Site, East Side, and Miramar South NoRs / designations – 2019 to 2021	WCC technical staff and external experts	Reviews / advice were completed in relation to noise, traffic, construction / earthworks, landscape and urban design, lighting, and legal. These assessments were used in relation to further information requests for the notices of requirement, and the preparation of hearing evidence.
Airport and Golf Course Precinct and Air Noise Boundary; Monitoring and Evaluation Report – August 2019	Wellington City Council	This report presents the findings of a review of resource consent data in relation to the Airport Precinct and the Air Noise Boundary of the Operative Wellington City District Plan. It is based on a review of resource consent data from 21 November 2009 (when Plan Change 57 became operative) to 9 August 2019. The data includes resource consents within the Airport and Golf Precinct, and also within the Air Noise Boundary area.
Wellington International Airport Sound abatement survey, 2008	Colmar Brunton, for Wellington Air Noise Management Committee	This was a survey of 181 households within the Air Noise Boundary (ANB). There were 22 interviews in the high (> 74 dB) zone, 62 interviews in the medium (70 – 74 dB) zone, and 97 interviews in the low (65 – 69 dB) zone. The majority of residents (86%) indicated that airport noise had at least some negative impact on their satisfaction – interfering with conversation or TV, waking them up, and

		making them keep windows shut when they would otherwise prefer them to be open.
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In addition to the material listed in the table above, the Council has also gathered the following information and advice that is relevant to this topic:

- Advice / feedback from council officers in relation to various noise issues.
- Advice / feedback from Marshall Day Acoustics in response to various noise questions as they arose, outside of matters related to the Airport and Port (where Marshall Day has a conflict of interest).
- District Plan Maps – relevant to the air noise boundary.
- Proposed Natural Resources Plan (PNRP) provisions, submissions and appeals relevant to Wellington Airport.
- Notice of Requirement documentation in relation to Airport noise, including expert reports and hearing evidence prepared by WIAL and its advisors.
- Noise conditions attached to Airport designations, as agreed through the Environment Court mediation process.

5.3.1 Analysis of Operative District Plan provisions relevant to this topic

For the purposes of this report the key provisions in the Operative Wellington District Plan of relevance to this topic are summarised below.

Topic	Summary of relevant provisions
Noise	<p>Noise is not addressed as a single chapter in the operative district plan. Instead various objectives across seven plan chapters address noise either directly or indirectly. Indirect references to noise can be considered to occur in objectives that reference ‘amenity’ as a broad class of potential effects / environmental outcomes.</p> <p>The are no objectives in the ODP that include a headline reference to noise. However, there are many throughout the ODP that can either be directly or indirectly inferred to cover noise. The objectives set out below are limited to those where policies sitting below the objectives do include a headline reference to noise. On that basis, the ODP contains eight noise relevant objectives which individually or collectively seek the following:</p> <ul style="list-style-type: none"> • Maintaining or enhancing amenity values in the Rural and Residential areas, and the Institutional precincts • Managing noise (enabling, but also avoiding, remedying and mitigating) noise arising from activities in the regional stadium, Central Area, Centres zones, and Business Areas. • Protecting amenity in areas surrounding the Airport <p>Note that these objectives do not cover every chapter of the ODP. Chapters which have no noise relevant objectives (i.e., having no noise specific policies) include:</p> <ul style="list-style-type: none"> • Open space • Conservation sites • Heritage • Utilities • Renewable energy • Urban development area • Earthworks

Topic	Summary of relevant provisions
	<ul style="list-style-type: none"> • Contaminated land • Curtis Street business area <p>The eight noise relevant objectives are implemented by a framework of eighteen noise specific policies intended to achieve the objectives. The most notable of these relate to:</p> <ul style="list-style-type: none"> • ‘Controlling’ adverse noise in the Residential zone, Centres, Institutional precincts, Central Area, Rural zone, and Business areas • Protecting noise sensitive activities in Centres, Central Area, Business 1, and within the air noise boundary • Discouraging noise sensitivity activities from establishing in Business 2 • Ensuring that established and permitted activities are not constrained by noise sensitivity activities in Centres and Business 1 • Requiring noise insulation for specific locations affected by Port noise and Airport noise • Maintaining and enhancing community health and welfare in relation to Airport noise <p>With noise being addressed in seven ODP chapters, there is both commonality and differences in approach to the building and structure standards.</p> <p>Key activity and building and structure standards include:</p> <ul style="list-style-type: none"> • Appendices setting out decibel (dB) standards for noise measured at or within the boundary of an adjoining residential or rural site, for noise generated within: Institutional, Airport; Rural; Residential; Centres; Business Areas; Curtis Street • Air noise (received from aircraft) insulation and ventilation based on internal noise levels (dB): Residential; Centres; Business Area; Curtis Street • External sound insulation, based on minimum building materials performance standards: Residential; Centres; Business Area; Courtenay Place noise area; Inner Port noise area • Noise emitted and received within the same zone: Business 1; Business 2 • Fixed plant noise: Residential; Centres; Business Area; Curtis Street • Electronic sound system noise: Centres; Central Area; Business Area • Ventilation: Residential; Business Area • Stadium special event noise: Central Area <p>Note: Airport noise (including noise from aircraft) is subject to rules, with detailed conditions, in the Airport and Golf Course Precinct chapter, rather than standards.</p> <p>During the course of reviewing the operative provisions for the purposes of this report several key issues were identified. These include:</p> <ul style="list-style-type: none"> • Different approaches to specifying noise standards and measuring where noise is received • The opportunity for consistency of approach to major noise sources, such as the Airport, Port, state highways, and rail

5.3.2 Advice received from Taranaki Whānui and Ngāti Toa Rangatira

The District Plan Review has included significant engagement with our mana whenua partners - Taranaki Whānui ki te Upoko o te Ika and Ngāti Toa Rangatira. This has included over 100 hui and wānanga attended by Council officers over the last 12 months. This has provided a much greater understanding of mana whenua values and aspirations as they relate to the DP.

The DP elevates the consideration of mana whenua values in resource management processes, including:

- A new Tangata Whenua chapter which provides context and clarity about who mana whenua are and what environmental outcomes they are seeking.
- A new Sites and Areas of Significance to Māori chapter that provides greater protection for sites and areas of significance than the current District Plan.
- Integrating mana whenua values across the remainder of the plan where relevant.

This is consistent with both the City Goal of ‘Partnership with mana whenua’ in the Spatial Plan; and the recently signed Tākai Here (2022), which is the new partnership agreement between the Council and our mana whenua partners, Rūnanga o Toa Rangatira, Taranaki Whānui ki Te Upoko o Te Ika and Te Rūnanganui o Te Āti Awa.

A full copy of the advice received is attached as an addendum to the complete suite of Section 32 reports as Addendum A – Advice received from Taranaki Whānui and Ngāti Toa Rangatira.

No specific advice has been received from Taranaki Whānui/Ngāti Toa Rangatira regarding the topic of noise and the proposed provisions evaluated within this report.

5.3.3 Consultation undertaken to date

The following table summarises the primary consultation undertaken in respect of this topic. Note that much consultation on the topic of Airport noise can be considered to have occurred via the notices of requirement issued by WIAL, and the subsequent processes that led to the designations being confirmed, after resolution of appeals through mediation directed by the Environment Court. Council staff were fully engaged in those processes and therefore aware of the objectives of the Airport company (WIAL), the nature of noise issues associated with the existence and future development of the Airport, and the community views expressed on that matter.

The following is a summary of the primary consultation undertaken in respect of this topic:

Who	What	When	Relevant Issues Raised
General Public	Airport notices of requirement for designation NoR hearing (May 2021) Appeal / mediation of designations by third parties	Dec 2020 – June 2022	<ul style="list-style-type: none"> • Noise was one of the major issues associated with the operation and future growth of the Airport

Landowners	Notices of requirement for designation NoR hearing (May 2021) Appeal / mediation of designations by third parties	Dec 2020 – June 2022	<ul style="list-style-type: none"> Noise was one of the major issues associated with the operation and future growth of the Airport
Feedback on Draft District Plan	Feedback on Draft Plan, through submissions and targeted discussions	Late 2021	<ul style="list-style-type: none"> Feedback on may noise issues, but especially in relation to major emitters such as the Airport

A summary of specific feedback on this topic received during consultation on the Draft District Plan is contained in Appendix 1, including how it has been responded to in the Proposed District Plan. Additional detail concerning the wider consultation undertaken in preparing the Proposed District Plan is contained in the companion Section 32 Evaluation Overview Report.

In summary, the key findings arising from the consultation undertaken on this topic are:

- Wellbeing of residents, including in relation to health effects arising from noise, needs to be recognised
- Reverse sensitivity effects need to be addressed
- More restrictions needed on residential development
- Depending on particular submitters, a desire to strengthen or relax various standards for noise insulation
- Amendment needed of air noise boundary
- Amendment needed of various standards for specific noise sources and circumstances – including for temporary activities
- Clarification required about relationship with other district plan chapters
- Greater clarity required about relationship between Noise chapter and Airport designations
- Aircraft noise is a significant issue for the community

5.4 Summary of Relevant Resource Management Issues

Based on the research, analysis and consultation outlined above the following issues have been identified:

Issue	Comment	Response
Issue 1: Terminology and definitions	<ul style="list-style-type: none"> There is inconsistency with current definitions and terms used across the plan. This creates confusion about different meanings of words where different terms are used. 	<ul style="list-style-type: none"> The district plan chapter needs to be in accordance with the National Planning Standards and achieve consistency of terminology within the Noise chapter, and across other chapters.
Issue 2:	<ul style="list-style-type: none"> Reverse sensitivity issues arise in resource consent 	<ul style="list-style-type: none"> Existing authorised noise emitting land uses must be able

Issue	Comment	Response
Reverse sensitivity	assessments and are not adequately provided for by the operative plan.	<p>to continue without the risk of complaints from new land uses.</p> <ul style="list-style-type: none"> For new noise emitting activities, the plan needs appropriate provisions that limit the risk of future reverse sensitivity issues.
Issue 3: Major noise sources	<ul style="list-style-type: none"> Major noise sources (Airport, Port, rail, state highways) share common issues in terms of potential health / amenity effects for nearby residential development and other sensitive activities. The ODP provisions do not have a consistent approach to major noise sources, with respect to how internal amenity standards can be measured / achieved (also see Issue 4). 	<ul style="list-style-type: none"> The DP provisions categorise receiving environments from major noise sources based on whether they are 'high' or 'moderate' noise areas. High noise areas include land close to the Airport (within the 65 dB contour); land close to state highway and railway corridors; and the operative plan's Courtenay Place noise area. Moderate noise areas include Airport adjacent land beyond the 65 dB contour (out to the 60 dB contour); Port adjacent land; various noise zones (e.g. mixed use zone); and land further away from state highway and railway corridors.
Issue 4: Acoustic insulation and ventilation	<ul style="list-style-type: none"> The ODP takes varying approaches to managing the need for acoustic insulation. As noted in section 5.3.1 above, in different locations, the ODP uses a mix of internal dB levels, specified external building material performance standards, noise appendices etc. Some specified building materials have changed since the operative provisions were put in place, and some materials (e.g. 	<ul style="list-style-type: none"> Appendices have been developed with tables of permitted noise standards covering all receiving zones; standards for fixed plant noise; and temporary activity noise standards. Mechanical ventilation is required for new noise sensitive activities in noisier areas. There are respective tables of minimum construction materials requirements for 'high' and 'moderate' noise areas (see Issue 4). The standards are based on a recognised formula,

Issue	Comment	Response
	<p>12mm gypsum board) are no longer produced.</p> <ul style="list-style-type: none"> The lack of consistency in approach across the ODP is inefficient for both users and the council. 	<p>designed to achieve an acceptable level of indoor acoustic amenity.</p>
<p>Issue 5: Airport Noise</p>	<ul style="list-style-type: none"> Airport noise is the probably the most extensive and significant noise source in Wellington City. The environmental effect is experienced well beyond the boundaries of the Airport. It can have a substantial effect on residential quality of life. 	<ul style="list-style-type: none"> The DP addresses Airport noise in the Noise chapter and through mapped Air Noise overlays. The approach to noise management is consistent with the relevant NZ Standard and similar to that taken by the operative district plan.
<p>Issue 6: Airport noise contours</p>	<ul style="list-style-type: none"> The ODP airnoise contours date back to 1997. They do not reflect recent modelling based on air traffic projections / modern aircraft types. The ODP airnoise contours do not reflect the recommendation of NZS6805 that there should be both inner and outer air noise boundaries. 	<ul style="list-style-type: none"> The DP includes airnoise contours that are based on indicative modelling provided during the notice of requirement hearing, and subsequently confirmed during district plan development and resolution of the Airport appeals. The modelling takes account of air traffic growth out to 2050. The air noise contours include the 65 dB inner boundary recommended by NZ6805 and an outer 60 dB boundary. The contours have been 'cadastralised' for the purpose of defining air noise overlays in the DP. That is, they have been adjusted to match land title boundaries, for the purposes of both certainty and ease of administration. The cadastralised contours define the extent of Inner and Outer air noise overlays, with the Air Noise Boundary being

Issue	Comment	Response
		the dividing line between the two overlays.
Issue 7: Airport designations	<ul style="list-style-type: none"> • Designations have been put in place for the Airport, including conditions that relate to limits on and other management of noise. • Designation conditions place limits on that development, but anything exceeding those limits would be subject to district plan provisions and the likely need for a resource consent. 	<ul style="list-style-type: none"> • The policies and rules of the proposed plan are intended to dovetail with the designations, as opposed to the operative district plan which does not. • Airport chapter provisions have been clarified so that they are not reliant on the existence of designations.
Issue 8: Other specific noise situations	<ul style="list-style-type: none"> • There are some noise issues with specific characteristics / circumstances that require individualised management. • There are noise generating activities, and activities sensitive to noise, that are not provided for in the operative district plan. 	<ul style="list-style-type: none"> • In addition to the individual noise issues / management responses outlined above, the DP includes provisions specific to construction activities; blasting; Kiwi Point Quarry; home businesses; electronic sound systems; dog facilities; shooting ranges; Wellington Stadium and Basin Reserve; helicopter landing; and fixed plant. • The plan needs to provide for both specific activities (if there are specific noise issues) and for general noise management. • In all cases, the plan needs to have appropriate assessment measures.
Issue 9: MDRS outcomes	<ul style="list-style-type: none"> • The MDRS (medium density residential standards) require council to enable a greater development density across the city. • Higher development density on land very close to the Airport may not be consistent with achieving acceptable acoustic health / amenity 	<ul style="list-style-type: none"> • Acoustic / health amenity outcomes have been identified as a qualifying matter for the purpose of varying application of the MDRS. • Multi-unit development within the inner air noise overlay (out to the 65 dB contour) is subject to DP provisions that are more restrictive than the MDRS.

Issue	Comment	Response
	outcomes for residents – especially in relation to noise received outside a dwelling.	
Issue 10: Standardisation of hours	<ul style="list-style-type: none"> Night-time hours are inconsistently defined within the plan. The period differs depending on the zone. 	<ul style="list-style-type: none"> Consistency of approach is desirable for plan users, and with regard to Council enforcement.
Issue 11: Certification	<ul style="list-style-type: none"> There are inconsistent approaches to noise certification requirements within the plan. Ventilation currently requires sign off but not necessarily an acoustic engineer. 	<ul style="list-style-type: none"> Consistency about when certification is required, and the process used, is desirable.
Issue 12: Exemptions to provisions	<ul style="list-style-type: none"> Under law, and for specific purposes, the RMA or district plan does not manage some sources of noise. 	<ul style="list-style-type: none"> Circumstances under which the DP noise provisions do not apply are set out in the Noise chapter's introductory statement.

6.0 Evaluation of the Proposal

This section of the report evaluates the objectives of the proposal to determine whether they are the most appropriate means to achieve the purpose of the RMA, as well as the associated policies, rules and standards relative to these objectives. It also assesses the level of detail required for the purposes of this evaluation, including the nature and extent to which the benefits and costs of the proposal have been quantified.

6.1 Scale and Significance

Section 32(1)(c) of the RMA requires that this report contain a level of detail that corresponds with the scale and significance of the environmental, economic, social and cultural effects that are anticipated from the implementation of the proposal.

The level of detail undertaken for this evaluation has been determined by assessing the scale and significance of the environmental, economic, social and cultural effects anticipated through introducing and implementing the proposed provisions (i.e. objectives, policies and rules) relative to a series of key criteria.

Based on this the scale and significance of anticipated effects associated with this proposal are identified below:

Criteria	Scale/Significance			Comment
	Low	Medium	High	
Basis for change		X		<ul style="list-style-type: none"> Airport has recently been designated, with conditions that manage significant aspects of operation and development –

Criteria	Scale/Significance			Comment
	Low	Medium	High	
				<p>including noise. Where relevant, the Noise chapter should complement the direction taken by the designations</p> <ul style="list-style-type: none"> • Other aspects of change, in relation to various noise sources / circumstances, enhance consistency of approach where required
Addresses a resource management issue			X	<ul style="list-style-type: none"> • Noise can be a significant health / amenity issue • There is a general duty under the RMA to avoid unreasonable noise and to adopt the best practicable approach • The council must regularly deal with community noise issues at a compliance level
Degree of shift from the status quo		X		<ul style="list-style-type: none"> • Proposed provisions are broadly similar to operative in some respects • Changes introduce greater clarity, and consistency across different circumstances where appropriate
Who and how many will be affected/ geographical scale of effect/s			X	<ul style="list-style-type: none"> • Virtually all people within Wellington City will be affected to some degree by how noise is managed • Airport noise affects a significant number of people / properties but this is actually less than allowed for under the operative Air Noise Boundary, due to changes in aircraft technology
Degree of impact on or interest from iwi/ Māori	X			<ul style="list-style-type: none"> • No impact identified
Timing and duration of effect/s		X		<ul style="list-style-type: none"> • Noise impacts associated with infrastructure (Airport, Port, road and rail) are long term and ongoing
Type of effect/s		X		<ul style="list-style-type: none"> • Noise and associated health / amenity impacts
Degree of risk and uncertainty		X		<ul style="list-style-type: none"> • Good certainty around future noise levels at the Airport and Port, based on designation conditions (Airport), plus Airport and Port noise management plans

Criteria	Scale/Significance			Comment
	Low	Medium	High	
				<ul style="list-style-type: none"> Standards and noise limits in the DP will provide a good level of certainty around future noise outcomes

Overall, the scale and significance of the proposed provisions are considered to be medium for the following reasons

- Most criteria are rated as “medium”, as effects already exist (although some will continue to grow in scale / intensity).
- “High” impact for people / locations affected reflects the pervasiveness of noise as a citywide issue, and the specific issue of people living near noise emitting infrastructure such as the Airport.

Consequently, a detailed evaluation of these provisions has been identified as appropriate for the purposes of this report.

6.2 Quantification of Benefits and Costs

Section 32(2)(b) requires that, where practicable, the benefits and costs of a proposal are to be quantified.

Specific quantification of the benefits and costs beyond the information and evidence outlined in section 5.2 of this report is neither practicable nor readily available. However, a partly qualitative assessment of identifiable costs and benefits associated with this proposal is provided below and, where relevant, in the assessment of policies, rules and other methods is contained in section 10 of this report.

7.0 Overview of Proposal/s

The proposed provisions relevant to this topic are set out in detail in the ePlan and should be referenced to in conjunction with this evaluation report.

In summary, the proposed provisions include

- Definitions
 - A set of relevant definitions, including:
 - Air Noise Overlay (including an Inner Air Noise overlay, Outer Air Noise overlay, and an Air Noise Boundary)
 - Best practicable option
 - Noise
 - Noise rating level
 - Noise sensitive activity
 - Notional boundary
 - Port Noise Overlay (including an Inner Port Noise overlay, Outer Port Noise overlay, and a Port Noise Control Line)
 - Special audible characteristic
 - Wellington Air Noise Management Committee
- Two objectives that address:
 - Protecting people’s health and amenity from adverse noise levels
 - Protecting activities that are authorised to emit high levels of noise, from reverse sensitivity effects.

- Six policies that relate to:
 - Permitting noise where amenity and health are not compromised
 - Enabling construction activities while ensuring that noise and vibration effects are effectively managed
 - Allowing for higher noise levels to be generated in defined higher noise zones / locations
 - Requiring sound insulation and / or mechanical ventilation for new noise sensitive activities in defined zones / locations
 - Managing noise from the Wellington regional stadium and the Basin Reserve
 - Restricting development of noise sensitive activities within the inner air noise overlay
- A rule framework that manages land use and building and structure activities as follows:
 - Landuse activities
 - Noise compliant / not compliant with zone standards – Permitted and Restricted Discretionary
 - Noise sensitive activities with insulation in moderate / high noise areas – Permitted
 - Noise sensitive activities in moderate / high noise areas – Restricted Discretionary and Discretionary
 - Two / three⁺ residential units within the Inner Air Noise Overlay – Restricted Discretionary and Discretionary
 - Four⁺ residential units within the Outer Air Noise Overlay – Restricted Discretionary
 - Construction noise – Restricted Discretionary
 - Helicopter landing – Permitted and Discretionary
 - Stadium and Basin Reserve noise – Permitted and Restricted Discretionary
 - Fixed plant noise – Permitted and Restricted Discretionary
 - Commercial dog facility noise – Permitted and Discretionary
 - Shooting range and firearm noise – Discretionary
 - Blasting noise – Permitted and Restricted Discretionary
 - Home business noise – Permitted and Discretionary
 - Electronic sound system noise – Permitted and Discretionary
 - Port noise – Permitted and Discretionary
 - Airport noise – Permitted, Discretionary and Non-complying
- A complementary set of effects standards that address:
 - Maximum permitted activity noise levels by zone
 - Maximum permitted noise levels by activity
 - Noise management plans for the Port and Airport
 - Acoustic insulation in moderate and high noise areas
 - Ventilation requirements (to support acoustic insulation)
 - Fixed plant noise
 - Airport related noise (reflecting the Airport's extensive noise related designation conditions)

- Tables specifying acoustic performance of the building envelope (materials standards) necessary to achieve moderate and high external sound insulation levels
- Appendices specifying permitted noise levels: by zone; for temporary activities; for temporary military training; for special events at the stadium and Basin Reserve

8.0 Qualifying Matters

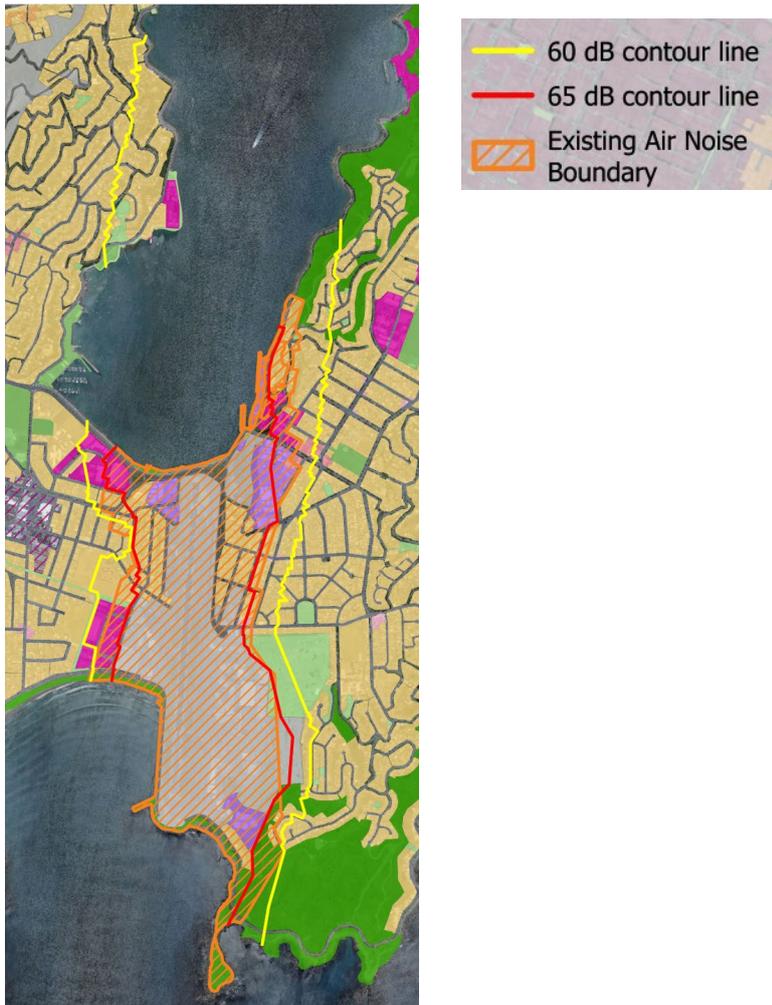
Section 771 of the Resource Management (Enabling Housing Supply and Other Matters) Amendment Act 2021 states that an authority,

“...may make the MDRS and the relevant building height or density requirements under policy 3 less enabling of development in relation to an area within a relevant residential zone only to the extent necessary to accommodate 1 or more of the following qualifying matters that are present...

(e) a matter required for the purpose of ensuring the safe or efficient operation of nationally significant infrastructure...”

Within the spatial extent of the area covered by this topic, the Airport’s air noise overlays have been identified as subject to a qualifying matter under (e) above. These include:

- The Inner Air Noise Overlay (land within the red 65 dB contour).
- The Outer Air Noise Overlay (land between the yellow 60 dB contour and the 65 dB contour).
- NB: the outer edge of the Inner overlay is the Air Noise Boundary (ANB).



An evaluation setting out how these areas meet the requirements outlined above is contained in the following supporting evaluation report:

- Airport Chapter s32 evaluation report; and
- The requirement of Section 77J(3)(b) to provide an assessment of the limiting impact of qualifying matters on development capacity is addressed in a separate report by Urban Edge Planning and Property Economics.

Airport noise is a 'qualifying matter' under the NPS-UD as:

- the Airport is nationally significant infrastructure⁸ [NPS-UD 3.32(1)(c)]; and
 - management of residential land use density is necessary to ensure the efficient operation of the Airport
- the airnoise contours allow a site specific analysis to identify the spatial extent of the qualifying matter and options for achieving density [(NPS-UD 3.33(3)(b)]; and
 - the spatial extent of the affected land has been identified and mapped as above

In addition, airport noise is considered an existing qualifying matter under RMA sections 77Q and 77O, as:

⁸ nationally significant infrastructure means: (h) any airport

- Restrictions on residential development already exist within the operative district plan's Air Noise Boundary [77Q(3)]
- It relates to the safe or efficient operation of nationally significant infrastructure [77O(e)]
- It relates to the need to give effect to a designation⁹, being designations WIAL4 (condition 23) and WIAL5 (condition 29) [77O(g)]

In summary the comparable numbers of affected properties under the DP noise overlays and the ODP provisions are:

DP Zones	Inner Air Noise Overlay (within 65 dB)			Outer Air Noise Overlay (Between 65 and 60 dB)			Combined Total		
	Sites	Area (ha)	Dwellings ¹⁰	Sites	Area (ha)	Dwellings	Sites	Area (ha)	Dwellings
Medium Density Residential	380	21.6	474	1,230	105.8	2,068	1,610	127.4	2,542
Mixed Use	10	6.3	17	43	11.7	76	53	18	93
General Industrial	29	15.8	51	8	0.93	15	37	16.73	66
Local Centre	-	-	-	9	1.8	24	8	1.8	24
Open Space	-	20.5	-	-	3.3	-	-	23.8	-
	419	64.2	542	1,290	123.5	2,183	1,708	187.7	2,725
ODP Zones	Sites	Area (ha)	Dwellings	Note: there is no ODP equivalent of the DP Outer Air Noise Overlay					
General Residential	652	37.5	845						
Business 1	53	9.5	97						
Business 2	40	14.4	69						
Centres	9	0.91	32						
Open Space	-	15.1	-						
	754	77.4	1,043						
Differences	Sites	Area (ha)	Dwellings						
DP MDR	- 335	- 13.2	- 501						

The ODP ANB is a 65 dB contour based on modelling undertaken in the late 1990s. It is equivalent in concept to the DP Inner Air Noise overlay. However, due to aircraft being noisier when the ODP modelling was undertaken, there are 335 fewer properties within the DP's 65 dB contour, when compared to the number of properties within the ODP Air Noise Boundary. This is because recent modelling of the airnoise contours has allowed the Air Noise Boundary (65 dB contour) to be reduced – covering 13.2 fewer hectares of land than under the ODP.

The following analysis ignores the existence of the DP Outer Air Noise Overlay because:

- There is no equivalent area in the ODP; and

⁹ In relation to the Inner Air Noise Overlay

¹⁰ All dwelling calculations in this table are approximate

- The DP Outer Air Noise Overlay permits up to three residential units (i.e., equivalent to the MDRS)

If the MDRS provisions were to apply in the DP Inner Air Noise Overlay, the theoretic number of dwellings able to be developed as a Permitted activity would be 1,140¹¹. However, the DP provisions permit¹² only one dwelling per residential site in the overlay – the outer edge of which is the Air Noise Boundary (ANB). In effect, the DP forgoes 760 potential dwelling units in the overlay through identifying noise as a qualifying matter and having more restrictive provisions.

DP – MDRS dwellings forgone within Air Noise Boundary (Inner Air Noise Overlay)

- 380 (sites) x 3 (dwellings) = 1,140 (potential MDRS dwellings)
- 1,140 (potential dwellings) minus 380 (sites) = 760 (dwellings forgone)

The current ODP provisions are similarly restrictive of development within the Air Noise Boundary. However, this has a greater impact than under the DP, due to the operative district plan's ANB encompassing a wider area. As a result, if the ODP provisions (including the current ANB) remained in place, the plan would forgo 1,304 potential MDRS enabled dwelling units.

ODP – MDRS dwellings forgone within Air Noise Boundary

- 652 (sites) x 3 (dwellings) = 1,956 (potential MDRS dwellings)
- 1,956 (potential dwellings) minus 652 (sites) = 1,304 (dwellings forgone)

Therefore, notwithstanding that the DP limits the MDRS potential of land close to the Airport, the potential for MDRS development will still be greater than under the existing ODP provisions – while providing better internal acoustic outcomes for future residents.

9.0 Evaluation of Proposed Objective/s

9.1 Introduction

Section 32(1)(a) of the RMA requires that the evaluation report examine the extent to which the objectives of the proposal are the most appropriate way to promote the sustainable management of natural and physical resources.

An examination of the proposed objectives along with reasonable alternatives is included below, with the relative extent of their appropriateness based on an assessment against the following criteria:

1. Relevance (i.e. Is the objective related to addressing resource management issues and will it achieve one or more aspects of the purpose and principles of the RMA?)
2. Usefulness (i.e. Will the objective guide decision-making? Does it meet sound principles for writing objectives (i.e. does it clearly state the anticipated outcome?)
3. Reasonableness (i.e. What is the extent of the regulatory impact imposed on individuals, businesses or the wider community? Is it consistent with identified tangata whenua and community outcomes?)

¹¹ This figure ignores the existing 474 dwellings in the Inner Noise Overlay – treating the existing 380 sites as empty

¹² More could potentially be developed, subject to resource consent

4. Achievability (i.e. Can the objective be achieved with tools and resources available, or likely to be available, to the Council?)

9.2 Evaluation of Objectives

While not specifically required under s32, it is appropriate to also consider alternative objectives to those currently included in the Proposed District Plan, so as to ensure that the proposed objective(s) are the most appropriate to achieve the purpose of the RMA.

For the purposes of this evaluation, the Council has considered two potential objectives:

1. The proposed objective
2. The current most relevant objective - the status quo

Proposed objectives NOISE-01 AND NOISE-02:

- NOISE-01: Amenity values and peoples' health and well-being are protected from adverse noise levels, consistent with the anticipated outcomes for the receiving environment.
- NOISE-02: Existing and authorised activities that generate high levels of noise are protected from reverse sensitivity effects.

General intent:

These objectives set the overarching framework for the Noise chapter. That is, an acknowledgement that noise management is a significant issue and that its management should also take a balanced approach where generation of high noise levels are already authorised.

Other potential objectives

Status quo:

- 4.2.7 To facilitate a range of activities within Residential Areas provided that adverse effects are suitably avoided, remedied or mitigated, and amenity values are maintained or enhanced.
- 6.2.2 To facilitate vibrant and viable Centres through enabling a wide range of appropriate activities to occur to meet the economic and social needs of the community, whilst avoiding, remedying or mitigating adverse effects.
- 8.2.2 To maintain and enhance the amenity values of Institutional Precincts and any nearby Residential Areas.
- 10.2.5 To protect the amenities of areas surrounding, and within, the [Airport] Precinct from adverse environmental effects.
- 12.2.2 To facilitate a vibrant, dynamic Central Area by enabling a wide range of activities to occur, provided that adverse effects are avoided, remedied or mitigated.
- 12.2.9 To support the use and development of the regional stadium so that it continues to contribute to the well-being of the local and regional community.
- 14.2.3 To maintain and enhance the amenity values and rural character of Rural Areas.
- 33.2.2 To enable an appropriate range of activities to occur in Business Areas, provided they do not undermine the City's Centres, and that adverse effects are avoided, remedied or mitigated.

	Preferred objective	Status quo
<i>Relevance:</i>		
Addresses a relevant resource management issue	<ul style="list-style-type: none"> • Relates to: <ul style="list-style-type: none"> ○ S.5(2) in relation to health and safety or people and communities ○ s.7(c) the maintenance and enhancement of amenity values ○ s.7(f) maintenance and enhancement of the quality of the environment 	<ul style="list-style-type: none"> • Relates to the same RMA section 5 and 7 matters, but with less clarity
Assists the Council to undertake its functions under s31 RMA	<ul style="list-style-type: none"> • Achieves s.31(1)(a) with respect to integrated management 	<ul style="list-style-type: none"> • Neutral or uncertain outcomes under s.31(1)(a) with respect to integrated management

Gives effect to higher level documents	<ul style="list-style-type: none"> • Achieves consistency with RPS 3(3)(b) in relation to the roading network, airports, port, and rail network as significant infrastructure – with potential to generate noise • Gives effect to the National Planning Standards, by being within a specific Noise chapter 	<ul style="list-style-type: none"> • Does not clearly give effect to RPS status of regionally significant infrastructure and its potential to generate noise • Does not give effect to the National Planning Standards
Usefulness:		
Guides decision-making	<ul style="list-style-type: none"> • Achieves greater clarity for decision makers 	<ul style="list-style-type: none"> • Guidance is less certain by comparison with preferred objectives
Meets best practice for objectives	<ul style="list-style-type: none"> • Achieves best practices by more clearly stating outcomes 	<ul style="list-style-type: none"> • Neutral or uncertain by comparison with preferred objectives
Reasonableness:		
Will not impose unjustifiably high costs on the community/parts of the community	<ul style="list-style-type: none"> • Generally neutral with regard to costs borne by the community, as most impacts are 'business as usual'. 	<ul style="list-style-type: none"> • Neutral – impacts are existing, although in some cases may continue to intensify under the operative provisions
Acceptable level of uncertainty and risk	<ul style="list-style-type: none"> • Achieves greater clarity for decision makers 	<ul style="list-style-type: none"> • Uncertain by comparison with preferred objectives
Achievability:		
Consistent with identified tangata whenua and community outcomes	<ul style="list-style-type: none"> • Neutral with respect to tangata whenua outcomes (none have been identified) • Achieves / neutral with respect to community outcomes, including in relation to the recent settlement of designations covering the Airport, which included noise conditions 	<ul style="list-style-type: none"> • Neutral with respect to tangata whenua outcomes (none have been identified) • Achieves / neutral with respect to community outcomes, although noting dissatisfaction of residents (within in the ANB) in terms of noise effects¹³ (Colmar Brunton report, 2008)
Realistically able to be achieved within the Council's powers, skills and resources	<ul style="list-style-type: none"> • Achieved through proposed rules, standards, and council compliance actions. • Note that Airport related noise outcomes will also be achieved through WIAL compliance with the conditions of its designations. 	<ul style="list-style-type: none"> • Achieved through operative rules and standards
Summary		
The proposed objectives are more concise and targeted than the status quo, providing a better overarching framework for noise in in all parts of the City		

¹³ Since 2008, some of the effects for specific residents / sites will have been addressed via the WIAL Quieter Homes programme

10.0 Evaluation of Reasonably Practicable Options and Associated Provisions

10.1 Introduction

Under s32(1)(b) of the RMA, reasonably practicable options to achieve the objective/s associated with this proposal need to be identified and examined. This section of the report evaluates the proposed policies and rules, as they relate to the associated objective(s).

Along with the proposed provisions, the Council has also identified through the research, consultation, information gathering and analysis undertaken in relation to this topic to achieve the objectives.

The technical and consultation input used to inform this process is outlined in section 5 of this report.

10.2 Evaluation method

For each potential approach an evaluation has been undertaken relating to the costs, benefits and the certainty and sufficiency of information (as informed by section 5 of this report) in order to determine the effectiveness and efficiency of the approach, and whether it is the most appropriate way to achieve the relevant objective(s).

This evaluation is contained in the following sections.

10.3 Provisions to achieve Objectives

For the purpose of this evaluation, the Council has considered the following potential options:

1. The proposed provisions
2. The status quo

In relation to noise associated with the Airport, Port, state highways and the railway network, no 'reasonable alternative/s' are considered to exist because:

- The nature of noise associated with use of this infrastructure is driven by factors largely beyond the Council's control.
- Existing designations (with the exception of the Port), with associated conditions, have been approved through public processes. The designation conditions facilitate specific physical and effects outcomes – which include or naturally result in noise.
- The Airport and Port are subject to noise management plans as an outcome of designation or consent conditions respectively.
- The Airport, Port, state highways and the railway network are regionally significant infrastructure. Policy 8 of the RPS directs that it be 'protected' from incompatible subdivision, use and development occurring under, over or adjacent to it.

The explanation to Policy 8 in the RPS notes that:

"Incompatible subdivisions, land uses or activities are those which adversely affect the efficient operation of infrastructure, its ability to give full effect to any consent or other authorisation, restrict its ability to be maintained, or restrict the ability to upgrade where the effects of the upgrade are the same or similar in character, intensity, and scale. It may also include new land uses that are sensitive to activities associated with infrastructure.

Protecting regionally significant infrastructure does not mean that all land uses or activities under, over, or adjacent are prevented. The Wellington Regional Council and city and district councils will need to ensure that activities provided for in a district or regional plan are compatible with the efficient operation, maintenance, and upgrading (where effects are the same or similar in character, intensity, and scale) of the infrastructure and any effects that may be associated with that infrastructure. Competing considerations need to be weighed on a case by case basis to determine what is appropriate in the circumstances.”

While this direction from the RPS does not prevent the consideration of alternatives, it does severely limit the usefulness of an alternative assessment – especially in the context of operations that are managed by designations (an “other authorisation” in the language of the explanation). It is therefore considered unlikely that a ‘reasonable’ alternative objective could be identified.

For those reasons, the following evaluation has been confined to the proposed provisions and the status quo.

Objective NOISE-O1:

NOISE-O1: Amenity values and peoples' health and well-being are protected from adverse noise levels, consistent with the anticipated outcomes for the receiving environment.

Proposed provisions

This objective helps to set the overarching framework for the Noise chapter.

It should be read in conjunction with NOISE-O2 (see separate table). Note that, because of the protecting / enabling objectives, some of the policies listed under NOISE-O1 could also apply under NOISE-O2.

Together, NOISE-O1 and NOISE-O2 acknowledge that noise management is a significant issue but that its management should also take a balanced approach where generation of high noise levels are already authorised.

The words "... consistent with the anticipated outcomes for the receiving environment" is an important direction about the appropriateness of noise levels being considered on a locational basis.

Costs

The environmental, social and health costs of noise fall largely on the community. This is especially the case for immediate neighbours of significant noise sources. There are also costs imposed on building development through the imposition of noise standards. For high and moderate noise areas, this includes standards that specify minimum construction materials requirements.

Affected Group	Costs
Existing local community	Adverse effects on: <ul style="list-style-type: none"> Health General amenity Property values
Future generations	Risks: <ul style="list-style-type: none"> Perpetuation of existing adverse outcomes
Iwi/Māori	<ul style="list-style-type: none"> No identified impacts
Landowner	<ul style="list-style-type: none"> As above under local community No more than minor for noise emitting landowners Costs related to minimum construction materials requirements in high and moderate noise areas
Businesses	<ul style="list-style-type: none"> No more than minor For developers, costs related to acoustic performance of the building envelope (materials standards) in high and moderate noise areas
Consent authority	Cost of administering the new provisions: <ul style="list-style-type: none"> Providing information Recruiting and training staff

Benefits

Effective noise management can lead to environmental, social and health benefits for the community in general, and specifically for residents / noise sensitive activities in high and moderate noise areas.

Affected Group	Benefits
Existing city, regional, and national community	<ul style="list-style-type: none"> Management of noise impacts
Future generations	<ul style="list-style-type: none"> As above for community
Iwi/Māori	<ul style="list-style-type: none"> No identified impacts
Landowner (WIAL)	<ul style="list-style-type: none"> Certainty of consent thresholds and processes
Businesses	<ul style="list-style-type: none"> Certainty of consent thresholds and processes
Consent authority	<ul style="list-style-type: none"> Additional clarity in administrative, compliance, and enforcement burden.

Risk of Acting / Not Acting if there is uncertain or insufficient information about the subject matter of the provisions

Information is not insufficient or uncertain.

	<ul style="list-style-type: none"> Processing consent applications / outline plans <p>Cost of verifying compliance:</p> <ul style="list-style-type: none"> Conducting inspections and audits Monitoring <p>Cost of enforcement:</p> <ul style="list-style-type: none"> Investigating non-compliance Conducting prosecutions 		
Option 1: Proposed approach (recommended)	Costs	Benefits	Risk of Acting / Not Acting if there is uncertain or insufficient information about the subject matter of the provisions
<p>Policies:</p> <p>NOISE-P1 Enable the generation of noise from activities that:</p> <ol style="list-style-type: none"> Maintain the amenity values of the receiving environment; and Does not compromise the health, safety and wellbeing of people and communities. <p>NOISE-P4 Require sound insulation and / or mechanical ventilation for new noise sensitive activities within:</p> <ol style="list-style-type: none"> The City Centre Zone; The Waterfront Zone; The Centres Zones; The Mixed Use Zones; Outer Port Noise Overlay; The Air Noise Overlay; and Identified corridors adjacent to the State Highways and railway networks. 	<p>Costs as generally set out above under Proposed Provisions.</p> <p>Environmental</p> <ul style="list-style-type: none"> Nil <p>Economic</p> <ul style="list-style-type: none"> Costs to homeowners / developers for compliance with acoustic performance of the building envelope (materials standards) in high and moderate noise areas Limits on housing within the Inner Air Noise overlay, restricting application of the MDRS <p>Social</p> <ul style="list-style-type: none"> Limits on housing within the Inner Air Noise overlay Effects on enjoyment of external amenity in noise affected areas <p>Cultural</p> <ul style="list-style-type: none"> Nil 	<p>Benefits as generally set out above under Proposed Provisions.</p> <p>Environmental</p> <ul style="list-style-type: none"> Management of noise effects achieved through rules and standards <p>Economic</p> <ul style="list-style-type: none"> Lessening of health effects (e.g., sleep disturbance) that may impact on productivity <p>Social</p> <ul style="list-style-type: none"> Amenity and health <p>Cultural</p> <ul style="list-style-type: none"> Nil 	<p>It is considered that there is certain and sufficient information on which to base the proposed policies and methods.</p>

<p>Two standards of acoustic insulation are prescribed to achieve acceptable indoor acoustic amenity in habitable rooms.</p> <p><u>NOISE-P5</u> Require that activities at Wellington Regional Stadium and the Basin Reserve, other than special entertainment events authorised as temporary activities, are managed effectively to mitigate adverse noise effects on residential amenity.</p> <p><u>Rules:</u></p> <p><u>NOISE-R3</u> Noise sensitive activity in a new building, or in alterations / additions to an existing building</p> <p><u>NOISE-R5</u> Noise from Wellington Regional Stadium and the Basin Reserve</p> <p><u>NOISE-R8</u> Shooting range and firearm noise</p> <p><u>Other Methods:</u></p> <p>NOISE-S1: Maximum noise levels by zone and by activity</p> <p>NOISE-S4: Acoustic insulation – high noise areas</p> <p>NOISE-S5: Acoustic insulation – moderate noise areas</p> <p>NOISE-S6: Ventilation requirements</p> <p>NOISE-S3: Airport and Port noise management plans</p> <p>NOISE-S8 to NOISE-S15: Airport noise standards</p>			
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Airport noise overlays (Inner, Outer, and Air Noise Boundary)			
<u>Effectiveness and efficiency</u>	<i>Effectiveness</i> The proposed provisions are simplified by comparison with the ODP, bringing all noise provisions together in the one chapter and enhancing the consistency of approach to assessment of noise. To that extent, the provisions are more effective.		<i>Efficiency</i> The proposed provisions are simplified by comparison with the ODP, bringing all noise provisions together in the one chapter and enhancing the consistency of approach to assessment of noise. To that extent, the provisions are more efficient, including for council compliance staff.
<u>Overall evaluation</u>	This option is the most appropriate, as it brings greater consistency of approach to noise management across the entire city than under the operative provisions. With respect to Airport noise management, it is intended to dovetail with the existence of WIAL's designations and support the primary use of the Airport for Airport Purposes, while also managing noise impacts on the community.		
Option 2: Status Quo	Costs	Benefits	Risk of Acting / Not Acting if there is uncertain or insufficient information about the subject matter of the provisions
<p><u>Policies:</u></p> <p><u>Policy 10.2.5.4</u> Manage the [Airport] noise environment to maintain and where possible enhance community health and welfare.</p> <p><u>Policy 4.2.7.2</u> Control adverse noise effects within Residential Areas.</p> <p><u>Policy 6.2.2.4</u> Control the adverse effects of noise within all Centres.</p> <p><u>Policy 8.2.2.3</u> Control the adverse effects of noise within Institutional Precincts.</p> <p><u>Policy 12.2.2.4</u> Control the adverse effects of noise in the Central Area.</p> <p><u>Policy 14.2.3.2</u> Control the adverse effects of noise within the Rural Area.</p> <p><u>Policy 33.2.2.9</u> Control the adverse effects of noise within all Business Areas.</p> <p><u>Policy 12.2.2.5</u> Ensure that appropriate on-site measures are taken to protect noise sensitive</p>	<p>With respect to all outcomes, the costs of the status quo are largely the same as for the preferred option – although somewhat less effective and efficient by comparison with the single Noise chapter approach mandated by the National Planning Standards.</p> <p><i>Environmental</i></p> <ul style="list-style-type: none"> Less certain acoustic benefits by comparison with the proposed approach <p><i>Economic</i></p> <ul style="list-style-type: none"> Costs to homeowners / developers for compliance with acoustic performance conditions and standards Limitations on residential development within the Air Noise Boundary <p><i>Social</i></p> <ul style="list-style-type: none"> Limits on housing within the Air Noise Boundary Effects on enjoyment of external amenity in noise affected areas <p><i>Cultural</i></p> <ul style="list-style-type: none"> Nil 	<p>Benefits as generally set out above under Option 1: Proposed Approach.</p> <p><i>Environmental</i></p> <ul style="list-style-type: none"> Management of noise effects achieved through rules and standards <p><i>Economic</i></p> <ul style="list-style-type: none"> Possibly less cost for compliance with some acoustic performance requirements, by comparison with the proposed approach <p><i>Social</i></p> <ul style="list-style-type: none"> Amenity and health <p><i>Cultural</i></p> <ul style="list-style-type: none"> Nil 	<p>It is considered that there is certain and sufficient information to understand the implications of continuing with the operative provisions as they have been in place for a significant period of time.</p>

<p>activities that locate within the Central Area from any intrusive noise effects.</p> <p><u>Policy 6.2.2.5</u> Ensure that appropriate on-site measures are taken to protect noise sensitive activities within Centres from intrusive noise effects of other permitted or existing activities.</p> <p><u>Policy 33.2.2.11</u> Ensure that appropriate on-site measures are taken to attenuate intrusive noise effects in Business 1 Areas to protect noise sensitive activities.</p> <p><u>Policy 12.2.9.4</u> Ensure that any adverse environmental effects of activities associated with a stadium, especially the effects of day to day noise, will be avoided, remedied or mitigated.</p> <p><u>Policy 12.2.9.5</u> Provide for a limited number of special entertainment events in the regional stadium subject to standards which recognise and mitigate the temporary nature of noise experienced by the local community.</p> <p>Rules: PA – permitted activity RDA – restricted discretionary DA – discretionary activity</p> <p>There are a great many references to noise in the ODP rules, which often also cross reference to compliance with a mix of noise conditions and standards. Only major rules are listed below. The substantive management of noise is achieved through</p>			
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<p>compliance / non-compliance with noise standards – which are extensive for some zones / chapters.</p> <p><u>Residential Rules 5.3.10B, 5.4.4, 5.3.13</u> Multi-unit development and subdivision within the Air Noise Boundary, RDA, DA, RDA</p> <p><u>Business Area Rules 34.4.1 and 34.4.7</u> Noise sensitive activities within air noise boundary, DA</p> <p><u>Airport Precinct Rules 11.1.1 and 11.3.1.7</u> Detailed noise rules, covering emission from various sources at Airport, PA and RDA</p> <p><u>Airport Appendix 1</u> Airport noise levels received in outer residential area</p> <p><u>Institutional Appendix 1</u> Institutional noise levels measured in inner residential area</p> <p><u>Rural Appendix 1</u> Rural noise levels measured in outer residential area</p> <p><u>Other Methods:</u></p> <p>Noise standards in various chapters</p> <p>Air Noise Boundary mapped</p>			
<p><u>Effectiveness and efficiency</u></p>	<p><i>Effectiveness</i></p> <p>The status quo provisions are more complex by comparison with the DP, as noise provisions are scattered across various chapters and are somewhat less consistent in their approach to assessment of noise. To that extent, the provisions are less effective than the proposed approach.</p>		<p><i>Efficiency</i></p> <p>The status quo provisions are more complex by comparison with the DP, as noise provisions are scattered across various chapters and are somewhat less consistent in their approach to assessment of noise. To that extent, the status quo provisions are less efficient, including for council compliance staff.</p>
<p><u>Overall evaluation</u></p>	<p><i>Effectiveness</i></p> <p>The scattering of noise rules, conditions and standards throughout the operative district plan is now very much out of step with the National Planning Standards. In that respect, the status quo is not an effective approach. With respect to Airport noise management, it is intended to dovetail with the existence of WIAL’s designations while also managing noise impacts on the community.</p>		

Objective NOISE-O2:

NOISE-O2: Existing and authorised activities that generate high levels of noise are protected from reverse sensitivity effects.

Proposed provisions

This objective helps to set the overarching framework for the Noise chapter.

It should be read in conjunction with NOISE-O1 (see separate table). Note that, because of the protecting / enabling objectives, some of the policies listed under NOISE-O2 could also apply under NOISE-O1.

Together, NOISE-O1 and NOISE-O2 acknowledge that noise management is a significant issue but that its management should also take a balanced approach where generation of high noise levels are already authorised.

There are significant places where higher noise levels of noise are legitimately generated, such as the Airport, Port, state highways, and rail.

Costs

The environmental, social and health costs of noise fall largely on the community. This is especially the case for immediate neighbours of significant noise sources. There are also costs imposed on building development through the imposition of noise standards. For high and moderate noise areas, this includes standards that specify minimum construction materials requirements.

Affected Group	Costs
Existing local community	Adverse effects on: <ul style="list-style-type: none"> Health General amenity Property values
Future generations	Risks: <ul style="list-style-type: none"> Perpetuation of existing adverse outcomes
Iwi/Māori	<ul style="list-style-type: none"> No identified impacts
Landowner	<ul style="list-style-type: none"> As above under local community No more than minor for noise emitting landowners Costs related to acoustic performance of the building envelope in high and moderate noise areas
Businesses	<ul style="list-style-type: none"> No more than minor For developers, costs related to acoustic performance of the building envelope in high and moderate noise areas
Consent authority	Cost of administering the new provisions: <ul style="list-style-type: none"> Providing information Recruiting and training staff Processing consent applications / outline plans

Benefits

The effective management of noise can achieve environmental, social and health benefits for the community in general, and specifically for residents / noise sensitive activities in high and moderate noise areas.

Affected Group	Benefits
Existing city, regional, and national community	<ul style="list-style-type: none"> Management of noise impacts
Future generations	<ul style="list-style-type: none"> As above for community
Iwi/Māori	<ul style="list-style-type: none"> No identified impacts
Landowner (WIAL)	<ul style="list-style-type: none"> Certainty of consent thresholds and processes
Businesses	<ul style="list-style-type: none"> Certainty of consent thresholds and processes
Consent authority	<ul style="list-style-type: none"> Additional clarity in administrative, compliance, and enforcement burden.

Risk of Acting / Not Acting if there is uncertain or insufficient information about the subject matter of the provisions

Information is not insufficient or uncertain.

		<p>Cost of verifying compliance:</p> <ul style="list-style-type: none"> • Conducting inspections and audits • Monitoring <p>Cost of enforcement:</p> <ul style="list-style-type: none"> • Investigating non-compliance • Conducting prosecutions 		
Option 1: Proposed approach (recommended)	Costs	Benefits	Risk of Acting / Not Acting if there is uncertain or insufficient information about the subject matter of the provisions	
<p>Policies:</p> <p>NOISE-P2 Enable construction activities while ensuring that unreasonable noise and vibration effects are managed effectively.</p> <p>NOISE-P3 Allow for higher noise levels to be generated within:</p> <ol style="list-style-type: none"> 1. General Rural Zone; 2. Commercial and Mixed-Use Zones; 3. Hospital Zone; 4. Tertiary Education Zone; 5. Stadium Zone; 6. Port Zone; 7. Airport Zone and associated airspace; 8. City Centre Zone; 9. Mixed Use Zone; 10. General Industrial Zone; and 11. State Highway and Railway networks <p>NOISE-P6 Restrict the development of noise sensitive activities within:</p> <ol style="list-style-type: none"> 1. The Inner Air Noise Overlay; and 	<p>Costs as generally set out above under Proposed Provisions.</p> <p>Environmental</p> <ul style="list-style-type: none"> • Nil <p>Economic</p> <ul style="list-style-type: none"> • Costs to homeowners / developers for compliance with acoustic performance of the building envelope (materials standards) in high and moderate noise areas • Limits on housing within the Inner Air Noise overlay <p>Social</p> <ul style="list-style-type: none"> • Limits on housing within the Inner Air Noise overlay, restricting application of the MDRS • Effects on enjoyment of external amenity in noise affected areas <p>Cultural</p> <ul style="list-style-type: none"> • Nil 	<p>Benefits as generally set out above under Proposed Provisions.</p> <p>Environmental</p> <ul style="list-style-type: none"> • Management of noise effects achieved through rules and standards <p>Economic</p> <ul style="list-style-type: none"> • Lessening of health effects (e.g., sleep disturbance) that may impact on productivity <p>Social</p> <ul style="list-style-type: none"> • Amenity and health <p>Cultural</p> <ul style="list-style-type: none"> • Nil 	<p>It is considered that there is certain and sufficient information on which to base the proposed policies and methods.</p>	

2. Other locations where ventilation and acoustic insulation standards are not met.

Rules:

NOISE-R1

Noise not otherwise provided for

NOISE-R2

Noise from construction, maintenance, earthworks, and demolition activities

NOISE-R3

Noise sensitive activity in a new building, or in alterations / additions to an existing building

NOISE-R4

Helicopter landing noise

NOISE-R6

Fixed plant noise

NOISE-R7

Commercial facility dog noise (day care, dog parks, boarding kennels)

NOISE-R9

Blasting noise

NOISE-R10

Home business noise

NOISE-R11

Electronic sound system noise

NOISE-R12

Port noise

NOISE-R13

Airport noise

Other Methods:

NOISE-S1: Maximum noise levels by zone and by activity

NOISE-S4: Acoustic insulation – high noise areas

<p>NOISE-S5: Acoustic insulation – moderate noise areas</p> <p>NOISE-S6: Ventilation requirements</p> <p>NOISE-S3: Airport and Port noise management plans</p> <p>NOISE-S8 to NOISE-S15: Airport noise standards</p> <p>Airport noise overlays (Inner, Outer, and Air Noise Boundary)</p>			
<p>Effectiveness and efficiency</p>	<p>Effectiveness</p> <p>The proposed provisions are simplified by comparison with the ODP, bringing all noise provisions together in the one chapter and enhancing the consistency of approach to assessment of noise. To that extent, the provisions are more effective.</p>		<p>Efficiency</p> <p>The proposed provisions are simplified by comparison with the ODP, bringing all noise provisions together in the one chapter and enhancing the consistency of approach to assessment of noise. To that extent, the provisions are more efficient, including for council compliance staff.</p>
<p>Overall evaluation</p>	<p>This option is the most appropriate, as it brings greater consistency of approach to noise management across the entire city than under the operative provisions. With respect to Airport noise management, it is intended to dovetail with the existence of WIAL’s designations and support the primary use of the Airport for Airport Purposes, while also managing noise impacts on the community.</p>		
<p>Option 2: Status Quo</p>	<p>Costs</p>	<p>Benefits</p>	<p>Risk of Acting / Not Acting if there is uncertain or insufficient information about the subject matter of the provisions</p>
<p>Policies:</p> <p><u>Policy 6.2.2.6</u> Ensure that residential activities do not constrain the activities of established and permitted activities through reverse sensitivity to noise.</p> <p><u>Policy 33.2.2.10</u> Allow residential development in Business 1 Areas so long as it does not constrain established or permitted activities from reverse sensitivity through noise.</p> <p><u>Policy 33.2.2.12</u> Discourage noise sensitive activities from establishing in Business 2 Areas to avoid issues of reverse sensitivity from noise, lighting, dust and discharge of any</p>	<p>With respect to all outcomes, the costs of the status quo are largely the same as for the preferred option – although somewhat less effective and efficient by comparison with the single Noise chapter approach managed by the National Planning Standards.</p> <p>The larger area of the ODP Air Noise Boundary (by comparison with the DP Inner Noise Overlay) means that there would be a greater degree of forgone development with respect to development that would otherwise be enabled by the MDRS.</p> <p>Environmental</p> <ul style="list-style-type: none"> Less certain acoustic benefits by comparison with the proposed approach <p>Economic</p> <ul style="list-style-type: none"> Costs to homeowners / developers for compliance with acoustic performance conditions and standards Limitations on residential development within the Air Noise Boundary 	<p>Benefits as generally set out above under Option 1: Proposed Approach.</p> <p>Environmental</p> <ul style="list-style-type: none"> Management of noise effects achieved through rules and standards <p>Economic</p> <ul style="list-style-type: none"> Possibly less cost for compliance with some acoustic performance requirements <p>Social</p> <ul style="list-style-type: none"> Amenity and health <p>Cultural</p> <ul style="list-style-type: none"> Nil 	<p>It is considered that there is certain and sufficient information to understand the implications of continuing with the operative provisions as they have been in place for a significant period of time.</p>

<p>contaminants affecting industrial or business activities</p> <p><u>Policy 6.2.2.7</u> Require that noise sensitive activities and buildings in the Centres Area within the Wellington International Airport Air Noise Boundary identified on Map 35, be insulated from airport noise.</p> <p><u>Policy 33.2.2.12</u> Require that noise sensitive activities and buildings in the Business 1 Areas of Miramar South, Ropa Lane and Kilbirnie North within the Wellington International Air Noise Boundary identified on planning Map 35, be insulated from airport noise.</p> <p><u>Policy 33.2.2.13</u> Require that noise sensitive activities and buildings in the Business 1 Areas of Ropa Lane and Kaiwharawhara within the Outer Port Noise Affected Area and the Inner Port Noise Affected Area on planning Map 55, be insulated from port noise.</p> <p><u>Rules:</u></p> <p>PA – permitted activity RDA – restricted discretionary DA – discretionary activity</p> <p>There are a great many references to noise in the ODP rules, which often also cross reference to compliance with a mix of noise conditions and standards. Only major rules are listed below. The substantive management of noise is achieved through compliance / non-compliance with noise standards – which are extensive for some zones / chapters.</p>	<p>Social</p> <ul style="list-style-type: none"> Limits on housing within the Air Noise Boundary Effects on enjoyment of external amenity in noise affected areas <p>Cultural</p> <ul style="list-style-type: none"> Nil 		
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<p><u>Residential Rules 5.3.10B, 5.4.4, 5.3.13</u> Multi-unit development and subdivision within the Air Noise Boundary</p> <p><u>Business Area Rules 34.4.1 and 34.4.7</u> Noise sensitive activities within air noise boundary, DA</p> <p><u>Airport Precinct Rules 11.1.1 and 11.3.1.7</u> Detailed noise rules, covering emission from various sources at Airport, PA and RDA</p> <p><u>Airport Appendix 1</u> Airport noise levels received in outer residential area</p> <p><u>Institutional Appendix 1</u> Institutional noise levels measured in inner residential area</p> <p><u>Rural Appendix 1</u> Rural noise levels measured in outer residential area</p> <p><u>Other Methods:</u> Noise standards in various chapters</p>			
<p><u>Effectiveness and efficiency</u></p>	<p><i>Effectiveness</i></p> <p>The status quo provisions are more complex by comparison with the DP, as noise provisions are scattered across various chapters and are somewhat less consistent in their approach to assessment of noise. To that extent, the provisions are less effective than the proposed approach.</p>		<p><i>Efficiency</i></p> <p>The status quo provisions are more complex by comparison with the DP, as noise provisions are scattered across various chapters and are somewhat less consistent in their approach to assessment of noise. To that extent, the status quo provisions are less efficient, including for council compliance staff.</p>
<p><u>Overall evaluation</u></p>	<p><i>Effectiveness</i></p> <p>The scattering of noise rules, conditions and standards throughout the operative district plan is now very much out of step with the National Planning Standard. In that respect, the status quo is not an effective approach. With respect to Airport noise management, it is intended to dovetail with the existence of WIAL's designations while also managing noise impacts on the community.</p>		

10.4 Further Explanation of Proposed Approach to Provisions

In part, the proposed district plan provisions are based on technical advice from the experts Malcolm Hunt (Malcolm Hunt Associates) and Miklin Halsted (Marshall Day Acoustics). With regard to standardising the approach to noise assessment for major noise sources, the acoustic review provided by Malcolm Hunt notes that:

“Rules based on indoor sound level limits do not consistently ensure the room is as quiet or acceptable as the indoor dBA level may suggest. In fact, due to the need to estimate outdoor levels and sound spectrum as a starting point, insulation rules based on indoor received dBA levels hamper building designers and architects in their design of sensitive rooms (no information is provided within the district plan rule on the level of outdoor sound at the plan user’s address against which the building envelope must act acoustically, in order to adequately protect indoor spaces).

“Rather than continuing to adopt an acoustic insulation specification for the Proposed Plan based on specifying the maximum indoor dBA level due to outdoor sources, best practice is considered to be adopting minimum acoustic insulation standards using the Standardised Level Difference or $D_{tr,2m,nT,w} + C_{tr}$ metric (as defined within ISO 717-1:2020 Acoustics — Rating of sound insulation in buildings and of building elements — Part 1: Airborne sound insulation.) as is already adopted within the Operative District Plan (and within many other district plans in New Zealand) for specifying minimum acoustic insulation requirements for new habitable rooms located within port noise affected areas and central city and centres.

“One of the advantages of adopting acoustic insulation based on the $D_{tr,2m,nT,w} + C_{tr}$ metric is that insulation requirements can be field checked and tested in the field by adopting the procedures set out within relevant international Standards.”

11.0 Conclusion

This evaluation has been undertaken in accordance with section 32 of the RMA in order to identify the need, benefits and costs and the appropriateness of the proposal having regard to its effectiveness and efficiency relative to other means in achieving the purpose of the RMA. The evaluation demonstrates that this proposal is the most appropriate option as it:

- Aims to protect or management acoustic amenity for sensitive activities
- Brings more consistency of approach to the management of noise effects – especially in relation to major noise emitters / infrastructure
- Provides appendices of noise standards, taking a clear and consistent approach to noise emission locations and receiving locations
- Recognises that some major noise sources are unavoidable and, subject appropriate management of those effects, should themselves be protected from reverse sensitivity
- Where appropriate, distinguishes between different noise sources and the use of tailored rules
- Where appropriate, focuses on achieving good acoustic outcomes through prescribing minimum acoustic performance of the building envelope (rather than prescribing a maximum level of indoor sound) – achieved through compliance with building material standards
- Addresses the need for noise to be considered a qualifying matter in relation to MDRS development within the inner air noise boundary

Appendix 1: Feedback on Draft District Plan 2021

Who	Feedback Received	Response
Kāinga Ora; Environmental Noise Analysis and Advice Service Service (ENAAS)	With respect to NOISE-01, the submitter advocates for an enhanced recognition of residents' wellbeing.	Changes made for the following reason/s: One of the Noise chapter's two objectives focuses on amenity / health
Kāinga Ora; ENAAS; Kiwirail; NZTA; NZDF	With respect to NOISE-02, there are two views on the objective: <ul style="list-style-type: none"> • Kiwirail and NZDF are satisfied with the objective, submitting it be retained as currently drafted. Kāinga Ora supports the Objective but seeks amendments to more explicitly state the effect being managed is reverse sensitivity. • NZTA and ENAA appear to support the broad intention of the objective, amendments are sought to acknowledge adverse effects on the wellbeing and health of future residents/ noise sensitive activities. 	No changes made for the following reason/s: NOISE-02, and associated provisions, relate to the need to avoid reverse sensitivity effects on existing authorised emitters of noise. Management of reverse sensitivity is an important issue which needs to remain in the plan. Wellbeing, health and amenity are addressed under NOISE-01.
Kāinga Ora; ENAAS; NZDF	With respect to NOISE-P1, NZDF seeks to retain the policy as drafted while Kāinga Ora & ENAAS seek to amend the policy to reflect the fluid/changing nature of amenity values.	No changes made for the following reason/s: NOISE-P1 reflects the direction of objective NOISE-01
Kāinga Ora; Kiwirail; NZTA; CentrePort	With respect to NOISE-P3, two submission themes are: <ul style="list-style-type: none"> • Kainga Ora and NZTA seek to amend the locations to which the policy (noise insulation) applies; Kainga Ora seeks specific amendments and deletion of industrial and mixed zones. NZTA seeks to reduce insulation requirements through an identified State Corridor Mapped Area 100m from state highway). • CentrePort and Kiwirail support or are neutral to the proposal. 	Changes made for the following reason/s: NOISE-P3 has been revised to be NOISE-P3 and NOISE-P4 – applying to higher noise areas (P3) and acoustic treatment for noise sensitive activities in particular locations (P4). With regard to insulation requirements, the DP contains the following provisions:

	CentrePort has noted that no Rules give effect to the policy.	<ul style="list-style-type: none"> • Mechanical ventilation is required for new noise sensitive activities in noisier areas. • There are respective tables of minimum construction materials requirements for ‘high’ and ‘moderate’ noise areas. The standards are based on a recognised formula, designed to achieve an acceptable level of indoor acoustic amenity.
NZTA; ENAAS	<p>With respect to NOISE-R3 and R4, both submission responses support combining the two rules.</p> <p>ENAAS additionally supports the two-noise exposure into standards under a combined rule.</p>	<p>Changes made for the following reason/s:</p> <p>The two draft rules have been combined and clarified as to the locations where they apply.</p>
Kāinga Ora; Kiwirail	<p>With respect to NOISE-R4, Kāinga Ora and Kiwirail make opposing submission points. Kiwirail wishes to retain and strengthen standards controlling vibration effects while Kāinga Ora is opposed and seeks to delete such standards. Kāinga Ora’s position on NOISE-R4 is related to NOISE-S3.</p>	<p>Changes made for the following reason/s:</p> <p>Vibration from any construction, maintenance, earthworks and demolition is addressed via NOISE-S2 – referencing the widely used international standard.</p>
Kāinga Ora, WIAL; BARNZ, ENAAS	<p>With respect to NOISE-R5:</p> <ul style="list-style-type: none"> • Kāinga Ora seeks more permissive standards for noise insulation, in the form of removing R5 and associated standards, this stands in opposition to WIAL and ENAAS (and to some extent BARNZ) submission points which seek more restrictive standards for the development of residential properties and noise sensitive activities. Kāinga Ora appears to be seeking more permissive standards to avoid additional costs for housing developments, while 	<p>Changes made for the following reason/s:</p> <p>The DP’s approach to noise management within the air noise overlay is consistent with the relevant NZ Standard (NZS6805).</p> <p>The DP includes airnoise contours that are based on indicative modelling provided during the notice of requirement hearing, and subsequently confirmed during district plan development and resolution</p>

	<p>WIAL is seeking to avoid future reverse sensitivity conflicts by establishing appropriate noise insulation and strengthening Rules/ Activity statues to prevent noise sensitive activities from being developed within the ANB.</p> <ul style="list-style-type: none"> • BARNZ is additionally seeking to strengthen Rules pertaining to Activity Status, seeking an additional 'reverse sensitivity' section within the matters of discretion. • ENAAS seek to strengthen land-use controls around a much broader area in accordance with NZ 6805, which aligns with the standard referenced by WIAL and conflicts with the recommendations from Kāinga Ora. Seeks to update ANB with current and future projections from WIAL. 	<p>of the Airport appeals. The modelling takes account of air traffic growth out to 2050.</p> <p>The air noise contours include the 65 dB inner boundary recommended by NZ6805 and an outer 60 dB boundary.</p> <p>The contours have been 'cadastralised' for the purpose of defining air noise overlays in the DP. That is, they have been adjusted to match land title boundaries, for the purposes of both certainty and ease of administration.</p> <p>The cadastralised contours define the extent of Inner and Outer air noise overlays, with the Air Noise Boundary being the dividing line between the two overlays.</p>
<p>Kāinga Ora; ENAAS</p>	<p>With respect NOISE-R15, Kāinga Ora seeks a review of noise rules in relation to WHO guidance on safe levels of noise. ENAAS's objects to this rule on the basis of structural concerns.</p>	<p>Changes made for the following reason/s:</p> <p>The rule (now NOISE-R13) has been revised. The standards cross referenced in the rule reflect the designation conditions settled via an Environment Court process.</p>
<p>NZTA; CentrePort; ENAAS</p>	<p>With respect NOISE-S2, Centreport seeks to review and update their current noise management plan and wants this to be reflected in DP provisions.</p> <p>ENASS seek permanent live noise monitoring available to the public.</p>	<p>No changes made for the following reason/s:</p> <p>CentrePort's submission seeks removal of reference to the current (2008) date of the noise management plan – noting their intention to review the NMP and noise modelling to determine location of the port noise control line. It would be inappropriate to amend reference to the current NMP (and port noise control line)</p>

		until the Port's review has been undertaken and any changes, such as modifying the noise control line, have been considered via a Schedule 1 process.
Kāinga Ora; Kiwirail; NZTA; ENAAS	<p>With respect to NOISE-S3:</p> <ul style="list-style-type: none"> • Kāinga Ora seeks to reduce sound insulation standards as part of this proposal, believing them to be overly restrictive and places the burden for mitigating noise effects on residential land uses with no corresponding requirements for infrastructure providers. • Kāinga Ora's position stands in opposition to Infrastructure providers (NZTA & Kiwirail) which broadly support the standard. NZTA seeks to make amendments to NOISE -S3 to strengthen/ expand the requirements for noise insulation and setback distances for noise sensitive activities in close proximity to state highways. ENAAS has taken a similar position seeking to expand interior insulation standards. • ENAAS and NZTA share a structural concern with the standard seeking to either combine NOISE-S3 and S4 into an overarching standard. ENAAS is additionally open to breaking up the standards into their individual noise sources. This structural change does not conflict with other submission responses, with the exception of Kāinga Ora (seeking to delete the standards entirely). 	<p>Changes made for the following reason/s:</p> <p>NOISE-S3 (now NOISE-S4) addressed sound insulation standards for noise sensitive activities. NOISE-S4 has a particular focus on acoustic insulation in defined high noise areas – NOISE-S5 covers insulation in defined moderate noise areas.</p> <p>There are respective tables of minimum construction materials requirements for 'high' and 'moderate' noise areas (see Issue 4). The standards are based on a recognised formula, designed to achieve an acceptable level of indoor acoustic amenity.</p> <p>Mechanical ventilation is required for new noise sensitive activities in noisier areas.</p>
Kāinga Ora; NZTA; ENAAS	With regard to NOISE-S4, Kāinga Ora support for removing the rule is in opposition to the position of NZTA and ENAAS which support and seek to amend the rule's structure.	<p>Changes made for the following reason/s:</p> <p>NOISE-S4 under the draft district plan related to noise insulation within the Port noise affected area, and in</p>

		<p>the air noise overlay. For public health and amenity reasons, it is inappropriate to <u>not</u> have sound insulation standards associated with the Port and Airport. However, under the proposed district plan, the standard has been significantly reworked and split to cover high noise areas (NOISE-S4) and moderate noise areas (NOISE-S5).</p>
WIAL; Strathmore Park Residents Association	<p>With regard to NOISE-S7:</p> <ul style="list-style-type: none"> • WIAL notes that the current 65 dB limit will create difficulties with compliance and enforcement. • The Strathmore Park Residents Association seeks to tighten this limit which may exacerbate the issue presented by WIAL. 	<p>Changes made for the following reason/s:</p> <p>NOISE-S7 (now NOISE-S9) has been revised to be consistent with the relevant WIAL designation conditions.</p>
Aggregate and Quarry Association; ENAAS	<p>With respect to APP 5, the Aggregate and Quarry Association seek specific amendment to the noise standards while ENAAS is concerned with the format of the appendix.</p>	<p>Changes made for the following reason/s:</p> <p>The Appendix has been reviewed, but it is not clear whether the issue raised by AAQA has been addressed. This may need to be reviewed as part of the s42A process.</p>
Foodstuffs North Island (Foodstuffs); ENAAS	<p>With respect to APP 4, the Foodstuffs and ENAA submission points seek standardised noise limits. ENAAS additionally seeks structural changes to the appendix which do not conflict with Foodstuffs sought amendment.</p>	<p>Changes made for the following reason/s:</p> <p>Changes have been made to APP 4, such that the matter covered by Table 16 (referred to by Foodstuffs) is now covered by Tables 15 – 17. It is not clear whether the revised tables will have addressed the points of concern.</p>
NZDF; ENAAS	<p>With respect to TEMP-S4, TEMP-S6 and APP6, NZDF wish to retain the standard as drafted while ENAAS seek to specify the measurements used in</p>	<p>Changes made for the following reason/s:</p>

	<p>the application of the standard referring to NZS6801/6802. NZDF additionally wish to remove and adjust the standards (APP6).</p>	<p>The Appendix has been reviewed, but it is not clear whether the issue raised by NZDF has been addressed. This may need to be reviewed as part of the s42A process.</p>
<p>BARNZ; Guardians of the Bay (GoTB); CentrePort; ENAAS</p>	<p>With regard to the relationship between Noise and other DP chapters, the submitters generally seek greater clarification on relationship between the Noise chapter and other DP chapters. With the exception of CentrePort, greater clarity is sought about the relationship between the Noise chapter and the Airport designations.</p>	<p>Changes made for the following reason/s:</p> <p>The policies and rules of the proposed plan are intended to dovetail with the designations, as opposed to the operative district plan which does not.</p> <p>Airport chapter provisions clarified so that they are not reliant on the existence of designations.</p>

DISTRICT PLAN REVIEW

Port Noise and Airport Noise Provisions

Review of Draft District Plan Provisions, Submissions Received & Recommendations For Proposed District Plan

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DISTRICT PLAN REVIEW

Port Noise and Airport Noise Provisions

Review of Draft District Plan, Submissions Received & Recommendations For Proposed District Plan

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DISTRICT PLAN REVIEW

Port Noise and Airport Noise Provisions

Review of Draft District Plan, Submissions Received & Recommendations For Proposed District Plan

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1 Background

Wellington City Council (Council) are reviewing the existing District Plan including methods adopted within the plan to manage the effects of environmental noise. The Resource Management Act 1991 (RMA) sets out at s.31(1)(d) that Council has a duty to “...*the control of the emission of noise and the mitigation of the effects of noise*”. The RMA provides for Council’s to develop and maintain ‘district plans’ to manage land use activities so that the use and development of resources are controlled and managed in a sustainable manner.

The Council consulted on the Draft District Plan in late 2021 with over 1,000 submissions received. Noise issues relating to Wellington International Airport (WIA) and Port of Wellington (CentrePort) were included within submissions received. Based on our research and experience, we set out recommended amendments and enhancements to the noise provisions pertaining to WIA and CentrePort so that the ‘Proposed District Plan’ incorporates worthwhile feedback from submitters and more closely implements the recommendations of relevant NZ noise Standards, also taking into account the likely effects of national directions around densification of urban areas and changes to the RMA.

A key focus has been to recommend district planning methods and techniques to address potential “*Reverse Sensitivity*” effects of noise which are potentially deleterious to the established operations of WIA and the Port. The enhanced reverse sensitivity protections recommended below operate in addition and parallel to, the district plan’s more direct function of managing effects of aircraft and port noise on people and communities as receivers of noise.

2 Plans, Standards & Guidelines

The following guidance has been considered within the investigations carried out and have been relied upon when forming conclusions and recommendations set out below in this report;

- Operative WCC District Plan and maps [as at June 2022];
- Wellington City Spatial Plan (Our City Tomorrow – Planning For Growth)
- National Environmental Standards
- National Planning Standards
- Relevant NZ Standards dealing with port noise and airport noise.

2.1 Operative District Plan

The current Operative District Plan sets separate controls on the emission of cumulative aircraft noise and noise from port related activities based on two key NZ Standards;

- NZS6805:1992 *Airport Noise Management & Land Use Planning* (hereafter NZS6805); and
- NZS6809:1999 *Acoustics - Port Noise Management and Land Use Planning* (hereafter NZS6809)

Both Standards are designed for application within district plans formulated under the RMA. Both Standards and recommend that:

- Limits be set on the emission of noise from airports/ports based on a 'noise boundary' – a contour line based on the projected future level of Ldn 65 dB that can be justified based on current and future airport/port activities; and
- Land use planning measures intended to manage 'reverse sensitivity' noise effects. These measures are based on land use controls designed to prevent an increase in noise sensitive activities establishing in areas of high noise, and acoustic insulation of habitable rooms in new or altered buildings used for noise sensitive activities located within moderately noisy areas.

New Zealand Standards such as NZS6805 and NZS6809 do not have any 'regulatory force' on their own unless cited as a means of compliance in a statutory document such as in the District Plan or within a condition of Resource Consent. In reality, NZ Standards are often adopted in whole or in part. As explained below, in the case of the Operative District Plan port noise is controlled by adopting the full suite of NZS6809 for managing port noise, whereas effects of aircraft noise at WIA has controlled by a locally derived partial adaption of the full recommendations of NZS6805.

2.1.1 Port Noise & Airport Noise Emission Limits

Specific rules which limit noise emission are set out in Chapter 11A (Airport and Golf Course Recreation Precinct Area Rules) for airport noise and Chapter 13 (Central Area) and Chapter 34 (Business Area Rules) for port noise. These provisions prescribe permitted activity standards, setting noise limits that balance the effects on the environment with the aim being to limit these noise emissions to reasonable levels. Chapter 11 sets out a range of noise emission performance standards for aircraft and land-based noise sources operating at the airport. In summary, noise emission limits for aircraft operations are based on the recommendations of NZS6805 in addition to other rules which limit noise effects in terms of the timing of flight movements, engine testing, etc.

In terms of port noise emission, noise due to 'port related activities'¹ conducted on the landward side of the Coastal Marine Area are controlled via rule 34.6.1.5 which sets out noise limits based on the recommendations of NZ Standard NZS6809.

Recommendations adopted within the Operative District Plan NZS6805 and NZS6809 to control noise from activities taking place at WIA and from port related activities taking place at PoW (including Burnham Wharf in Miramar) are based on these two relevant Standards which appear to be working effectively. In the case of port noise, no changes to the Noise Control Boundaries (or limit lines) are recommended within the recommendations set out in Section 4.0 below, however, in response to submissions by WIA and others, a revised Airnoise Boundary is recommended for WIA to reflect changes in aircraft noise emissions, air traffic forecasts and to take into account cumulative noise due both aircraft taxiing noise and noise from aircraft taking off and landing.

¹ 'Port Related Activities' means activities within the Operational Port Area, the Port Redevelopment Precinct and adjacent Coastal Marine Area including the berthing, departure and movement of ships, storage and cargo handling, handling of goods and passengers.

2.1.2 Managing the Effects of Received Port Noise & Airport Noise

In terms of received noise, in summary, the Operative District Plan provides various performance standards and planning requirements within noise affected areas to control the effects of port and aircraft noise via various objectives, policies and rules applying within Residential Areas, Business Areas, Centres zone and Central Area summarised as follows;

- a) Within the 'Airnoise Boundary'² habitable rooms must be designed and constructed to achieve a specified internal level of indoor aircraft (with doors and windows closed). A minimum ventilation standard also applies to ensure indoor thermal comfort without the need to open windows.

- b) Within 'Port Noise Affected Areas'³ acoustic insulation (and minimum ventilation standards) also apply to new or modified habitable rooms. As explained below (Section 4.3) the insulation standards applying to habitable rooms in port noise affected areas (and within other 'noisy' areas of the city) are based on prescribing a minimum acoustic performance of the building envelope rather than prescribing a maximum level of indoor noise as per the acoustic insulation standards to address aircraft noise prescribed in the Operative District Plan. Regarding the insulation standards applying within port noise affected areas it is notable that a higher standard of acoustic insulation against port noise is required within the 'Inner Port Noise Affected Area' compared to the 'Outer Port Noise Affected Area'. As explained below, this 'two tier' acoustic insulation standard is considered to be technically superior and delivers implementation benefits to Council and users of the Plan compared to the 'indoor sound level' method for prescribing insulation that applies within the Airnoise Boundary under the Operative District Plan.

- c) In addition, the Operative District Plan places limitations over the construction new or altered to residential buildings within the Airnoise boundary where this results in two or more household units on a site. These are applications are treated as a Discretionary Activity (Restricted) in order to control housing density developing within the Airnoise Boundary as a means of addressing reverse sensitivity noise effects on the operation of the airport.

From our review, and taking into account matters raised in submissions on airport and port noise matters (see Section 3.0 below) we consider the general thrust of the above Operative District Plan provisions for managing the effects of airport noise and port noise in the district to be generally acceptable as they are consistent with noise control and management practices and principles recommended within the appropriate NZ Standards (NZS6805 and NZS6809). However, our review has found;

- A. To provide technical enhancements and provide benefits to Plan users and Council (in implementing, monitoring and enforcing district plan standards) methods used to prescribe acoustic insulation within areas affected by aircraft noise should be aligned with the methods adopted elsewhere in the plan and be based on prescribing a minimum acoustic performance

² 'Airnoise Boundary' is a line (shown on planning map 35) and is defined within NZS6805 as:
'an area around an airport within which the current or future daily amount of aircraft noise exposure will be sufficiently high to require appropriate land use controls or other measures to avoid, remedy or mitigate any adverse effects on the environment, including effects on community health and amenity values whilst recognising the need to operate an airport efficiently.'

³ Defined in the Operative Plan as including both *Inner Port Noise Affected Areas* and *Outer Port Noise Affected Areas*

of the building envelope (rather than prescribing a maximum level of indoor sound). See Section 4.3 below.

- B. The operative plan provisions relating to mitigating the effects of aircraft noise within sensitive residential areas to be deficient as only a limited in terms of providing adequate reverse sensitivity protection when compared to the guidance set out within the relevant NZ Standard – NZS6805:1992 *Airport Noise Management & Land Use Planning*.

Consistent with matters raised within some submissions to the Draft District Plan, our review has identified the Operative District Plan does offer some reverse sensitivity protection in key areas (e.g. acoustic insulation requirements within port noise and airport noise affected areas) however given the planned densification of residential areas it is considered important to update and upgrade these provisions to ensure district plan land use planning controls remain fit-for-purpose and appropriate going forward.

2.1.3 Port Noise & Airport Noise Management Plans

Both NZS6805 and NZS6809 emphasise the importance of noise management plans in managing potential adverse effects of aircraft or port noise (respectively) received within adjacent areas.

The noise management provisions of the Operative District Plan are summarised as follows;

- a) In terms of management of the emission of aircraft noise at WIA, Chapter 10 of the Operative District Plan prescribes (at Rule 10.2.5.4) a ‘method’ that requires WIA to implement a Noise Management Plan (NMP) to “...assist all interested parties in complying with the objectives and rules in the District Plan” (ref. Rule 10.2.5.4)⁴. The NMP is intended to manage the local noise environment to “...maintain and where possible enhance community health and welfare” and is required to cover specific matters detailed in the rule including specifying details of methods and processes for remedying and mitigating adverse effects of airport noise. It is noted within Chapter 10 and within the Airport Designation there is no obligation on WIA to conduct its activities in accordance with the NMP required by Rule 10.2.5.4.
- b) In terms of management of the effects of noise emitted from port-related activities, Rule 13.6.2.1.4 requires the port company to produce and operate in accordance with a *Port Noise Management Plan*, the contents of which are specified in Appendix 14 of the Operative District Plan which includes a requirement to identify the best practical options to ensure the emission of noise does not exceed the noise limits specified in the port noise rules levels of the Operative District Plan (e.g. Rule 13.6.2.1.4a). In addition, as much of the noise generated by port related activities originates within the Coastal Marine Area (CMA) this noise is subject to control via the *Regional Coastal Plan* administered by the Wellington Regional Council using similar rules and standards to the Operative District Plan⁵.

Submissions received the Draft District Plan and this review have identified no reasons for changing the current approach of the Operative District Plan of employing noise management plans to assist in management and mitigation of port noise and airport noise. While no changes in the general approach

⁴ A copy of Airport Noise Management Plan required Rule 10.2.5.4 can be found at;
https://www.wellingtonairport.co.nz/documents/232/Noise_Management_Plan.pdf

⁵ Noise rules and the requirements for a NMP specified within the *Regional Coastal Plan* continue to be applied within the Regional Council’s *Proposed Natural Resources Plan* notified on 31 July 2019.

of the Operative District Plan are considered necessary, it is noted that NOISE-S3 wording recommendations for the Proposed District Plan includes replacement wording requiring the Airport company (WIAL) to “maintain and implement” an Airport Noise Management Plan (ANMP). NOISE-S3 requires any alteration or update to the ANMP to be subject to certification by the Council. Revised requirements for noise management set out in NOISE-S3 (compared to those specified in 10.2.5.4 of the Operative District Plan for the airport noise management plan) are supported as they have been agreed among the parties in resolving the environmental court appeal on the recent Eastside NoR. AS below, one additional topic is recommended to be added to the minimum content specification for the ANMP to deal with potential effects at residential locations found within high noise areas (Ldn >70 dB) around the airport in order to give greater effect to the land use planning recommendations of NZS6805:1992.

2.2 National Environmental Standards

‘National Environmental Standards’ [NES] are regulations issued under the RMA. There are no NES applying to district plan methodologies or requirements for managing noise from airport or ports in New Zealand.

2.3 National Planning Standards

*National Planning Standards*⁶ sets national planning standards in relation to “District Plans” and places requirements on any new district plan. Noise is referred to as a “District-wide Matter” with the requirements set out in Chapter 15 of the Standard. The requirement is that mandatory noise measurement methods and symbols in the applicable New Zealand Standards be adopted within district plans. In the case of airport and port noise, recommendations of the following two NZ Standards are required to be followed;

1. NZS6805:1992 *Airport Noise Management & Land Use Planning*
2. NZS6809:1999 *Acoustics - Port Noise Management and Land Use Planning*

It is noted the Operative District Plan sets out requirements for port noise within Chapter 13 (Central Area) and Chapter 34 (Business Area Rules) based on both the measurement and assessment of port noise using NZS6809:1999, however the National Planning Standard includes an annotation of “measurement only” attached to NZS6809:1999. This means the mandatory requirement is limited to use of the port noise measurement methods and symbols of NZS6809:1999. It is not necessary to adopt the recommendations around noise limits or noise assessment or management recommendations of this Standard within new district plans. Proposals set out below for port noise provisions to be incorporated into the Proposed district plan are not considered to be undermined in any way by the above limitation on the mandatory requirements applying to the use of NZS6809:1999 within district plans.

Submissions received the Draft District Plan and this review has resulted in the continued use of NZS6805:1992 and NZS6809:1999 as no reasons have been identified that would justify changing the current approach under the Operative District Plan. It is reasonable to rely on both the measurement and assessment (management) of port noise and airport noise using NZS6809:199 and NZS6805:1992 respectively as these are well established and consistent methods and the best ones to adopt under the circumstances.

⁶ Ministry for the Environment <https://environment.govt.nz/acts-and-regulations/national-planning-standards/>

3 Submissions Received

While Council received over 1,000 submissions on Draft District Plan in 2021, the topics of airport and port noise attracted around 52 different submission points from 7 different submitters. Submission points covered a range of issues relating to port and aircraft noise rules & standards. While submissions received referred in some cases to relatively minor wording errors, cross-referencing issues or omissions within definitions of terms (which have been responded to via recommended wording changes to the noise chapter) most submissions requested amendments to managing noise at source, mitigating the effects of port / airport noise and protecting the port and airport infrastructure from inappropriate development on adjacent sites. Matters raised in submissions are summarised as follows;

3.1 Port Noise Matters

Issues raised in submissions relating to port noise were limited to two matters dealing with acoustic insulation of noise sensitive activities located within the port noise affected areas. Acoustic insulation matters are dealt with below in Section 4. The Port Company (CentrePort) requested more flexible wording of rules so that the rules do not fix requirements to the current Port Noise Management Plan with a fixed date. This matter is also addressed with Section 4 below.

Improved real-time monitoring of port noise emissions (with results being available to the public) was requested by one submitter however this is not supported based on our knowledge of the significance of port noise levels within the urban environments within which it is experienced. Although the concept of monitoring of port noise emissions is supported, any requirements for continuous monitoring of port noise (and reporting of results) is recommended to be dealt with by provisions of the Port Noise management Plan which is the subject of recommendations set out in Section 4.

3.2 Airport Noise Matters

By far the greater number of submissions received were related to airport noise matters. Submission topics from the airport operator (WIAL) requested the following;

- Provide a planning framework in the Proposed Plan for construction of noise sensitive activities based on available best practice for land use management around airports with amendments as appropriate to reflect historic and existing development patterns.
- Where the sound exposure exceeds 70dBA Ldn, follow NZS6805 recommends non-residential or non-noise sensitive land uses only. Where exposure exceeds 75dBA Ldn, follow NZS6805 in recommending that avoiding noise sensitive users due to the high probability of adverse health effects.
- Assisted or affordable housing should not result in residential housing occupying sites within close proximity to the airport, due to the potential for reverse sensitivity effects.
- Amend WIAL Main Site Designation so acoustic mitigation obligations currently delivered by the 'LUMINs programme' are extended out to the Ldn 60dB noise contour. Currently these obligations apply to existing residential dwellings within the Airnoise Boundary only.

Recommendations below in Section 4 respond to these matters.

The submission by WIAL also refers to 'difficulties with compliance and enforcement' of rules and standards that require that the Requiring Authority to ensure that aircraft operations are managed so

that the rolling day average 24 hour night weighted sound exposure level does not exceed Ldn 65 dBA beyond the Airnoise Boundary. Details of the nature of these difficulties with compliance and enforcement are not provided. Based on our experience and the wording of aircraft noise rules and designation requirements at other airports in NZ, the approach of NZS6805 is accepted as best practice as it both workable and feasible. Recommendations we make for the Proposed District Plan for controlling and enforcing limits on noise for aircraft operating at WIA will remain focused on continuing the approach of NZS6805 whereby the Requiring Authority will continue to be required to manage aircraft operations at the airport so that the rolling day average 24 hour night weighted sound exposure level does not exceed Ldn 65 dBA beyond the Airnoise Boundary. Evidence of any problems of the type referred to by this submitter (of which we are not aware) should be brought forward in submissions following notification of the Proposed Plan.

The Board of Airline Representatives identified a lack of clarity in the district plan concerning the relationship between the Airport Designations and 'rules in the plan'. It requests infill housing in Airport Noise Boundary be addressed in the Proposed Plan. There is no evidence for any increase in residential density within the Airnoise Boundary in our view. As discussed below, residential density has in fact significantly decreased in high noise residential areas near the airport. However recommendations below for the Proposed District Plan will enhance reverse sensitivity protection of the airport. Furthermore, I understand the planners will aim to ensure a high level of consistency between District Plan noise requirements and those set out within the airport designation.

Wellington Public Health (ENAAS) requested;

- Land-use controls should be applied to a much broader area around Wellington Airport in accordance with guidance in NZS 6805.
- ANB appears to be based on outdated information and should be updated.
- Duplication and discrepancies of controls between Wellington Airport Designations and District Plan should be addressed.

Resident groups (Strathmore Park Residents Association) and Guardians of the Bay have sought a review of the Airnoise Boundary and, in particular, re-modelling of future aircraft noise contours (and that these predictions should be expertly reviewed. This matter is included in the response to submissions and recommendations set out in Section 4 below.

Noise matters raised in submissions dealing with Eastside NoR including the Airport Noise Management Plan have to a large extent been superseded by recent mediation agreement in the environment court case⁷.

4 Response To Issues Raised & Recommendations

4.1 Port Noise

We recommend the current approach of the Operative District Plan to controlling and managing port noise continue to be based on NZ Standard NZS 6809:1999. This Standard was specifically developed for the management of port noise and for district or regional plans to apply appropriate land use

⁷ ENV-2021-WLG-000035 *Guardians of the Bays Inc v Wellington International Airport Limited* and ENV-2021-WLG-000037 *Guardians of the Bays Inc v Wellington International Airport Limited*.

planning techniques to ensure the long-term compatibility of ports and their neighbours.

Consistent with NZS6809:1999, the proposal is to utilise the Ldn port noise contour (Port Noise Control Line) as means of limiting cumulative port noise emissions. Proposed standard Noise-S1 requires specific noise limits to be complied with beyond this line shown on the planning maps. The location of this line are as per the location of the “Port noise control lines” shown on planning map 55 of the Operative District Plan. No changes are recommended in the location of this line as no changes have been sought by submitters and no reasons to alter the location of this line have been uncovered by this review.

In summary, the Operative District Plan port noise provisions are recommended for managing the effects of port noise within the Proposed District Plan. The recommendation is to continue to adopt port noise control limits and acoustic insulation requirements for new and altered noise-sensitive activities located within the inner and outer port noise-affected areas, as per current requirements of the Operative District Plan. The recommendation is for the Proposed District Plan to depict port noise affected areas where acoustic insulation of new or altered habitable rooms is required by adopting a ‘Port Noise Overlay⁸’ comprising;

Inner Port Noise Overlay	All land zoned Special Purpose Port Zone. The overlay is based on the ‘Inner Port Noise Affected Area’ of the Operative District Plan.
Outer Port Noise Overlay	This overlay is based on ‘Outer Port Noise Affected Area’ of the Operative District Plan. As this overlay covers sites where NOISE-S5 already requires a ‘moderate’ level of acoustic insulation, this overlay only affects a limited number of residential sites in Kaiwharawhara.

Regarding the monitoring of port noise required by NOISE-S3(b), we agree with the Centreport submission that it is not appropriate for the Proposed District Plan to refer to a specific version of the plan. This is because NOISE-S3(a) allows for new or amended Port Noise management Plans to be approved. The requirements for port noise monitoring set out in NOISE-S3(b) should therefore be amended as follows;

- b. The port company must undertake a noise monitoring programme annually (once every calendar year) to ensure that noise from port related activities comply with NOISE-S1 at the Port Noise Control Line. This monitoring will be undertaken in accordance with the ~~‘CentrePort Port Noise Management Plan for CentrePort Ltd’ (dated December 2008)~~ approved under NOISE-S3(a) and the information shall be reported to Wellington City Council’s Compliance Manager.*

⁸ Within the Proposed Plan, specific areas that have distinctive value, risk or other factors that might require management, which are referred to as ‘Overlays’.

In relation to limiting the development of noise sensitive uses within the port, we support PORTZ-P5 which gives effect to the generic recommendations of NZS6809 as it requires that noise sensitive activities⁹ seeking to establish adjacent to the Special Purpose Port Zone to be “appropriately located” to avoid adverse reverse sensitivity effects and/or potential conflict with lawfully established activities occurring within the Special Purpose Port Zone.

4.2 Airport Noise

The NZ airport noise Standard NZS6805:1992 prescribes that projected future Ldn contours (based on future expected levels of air traffic and aircraft types at the airport) be overlaid around the airport with these contours prescribing what activities and mitigation measures are appropriate, given their relative location to the airport. The outermost contour prescribed is based on the future Ldn 55 dB contour and within which the Standard recommends some degree of noise mitigation should be applied to manage the effects on noise sensitive activities. Closer to the airport, as sound exposure contours show increased noise, the Standard recommends avoiding noise uses establishing within the Ldn 65 dB noise contour line. The land use planning recommendations of Table 1 of NZS6805:1992 are reproduced as follows;

Table 1 NZS6805:1992 Recommended control measures	Day/night Level Ldn
New residential, schools, hospitals or other noise sensitive uses are prohibited. Steps shall be taken to provide existing residential properties with appropriate acoustic insulation to ensure a satisfactory internal noise environment. Alterations or additions to existing residences or other noise sensitive uses shall be permitted only if fitted with appropriate acoustic insulation.	>65
Consideration should be given to purchasing existing homes, or relocating residents, and rezoning the area to non-residential use only.	>70
There is a high possibility of adverse health effects. Land shall not be used for residential or other noise sensitive uses.	>75

4.2.1 Existing Provisions of the Operative District Plan

It was established in evidence to the hearings (and appeals) to the Operative District Plan during the 1990’s that the above idealised aircraft noise planning recommendations of NZS6805 could not be applied fully to the Wellington scenario due to the airport being constructed within an existing heavily built up area (NZS6805 recommendations being more suited to ‘greenfield’ situations without comprehensive existing urban land use patterns in place).

Instead the Operative District Plan, when finalised by the Environment Court decision W 102/97 dated

⁹ NOISE SENSITIVE ACTIVITY is defined in the Proposed Plan as any lawfully established:

- residential activity, including activity in visitor accommodation or retirement accommodation
- educational activity
- health care activity
- congregation within any place of worship
- activity at a marae

November 1997, adopted the Ldn 65 dB contour (the Airnoise Boundary – as per planning map 35) which serves as both a noise control line (limiting the emissions of aircraft noise at the airport) and as a line demarcating an area where land use planning requirements were put in place to mitigate the effects of high levels of aircraft noise. Rather than prohibiting noise sensitive activities inside the Airnoise Boundary, land use rules attempted to manage existing noise sensitive activities. Specifically, planning policies and rules attempted to limit the establishment of any large scale development of new noise sensitive activities and required any new or altered habitable room be acoustically insulated (and meet certain ventilation requirements). The Operative District Plan airport noise mitigation provisions only apply within the Airnoise Boundary (>65 dBA Ldn) whereas the recommendations of NZSZ6805 recommend land use controls / mitigation for sensitive activities which are exposed to as little as 55 dBA Ldn.

Consistent with submissions received, the Draft District Plan represents an opportunity to re-set district plan methods to address the effects of aircraft noise within sensitive environments, and to enhance reverse sensitivity measures to protect the airport, a growing and important function of district plans. Having regard to the above recommendations of Table 1 of NZS6805, the historical aircraft noise provisions of the Operative District Plan are considered outdated and require updating to give better effect to the above Table 1 recommendations of NZS6805.

4.2.2 Revised Aircraft Noise Predictions

It is generally accepted that airport noise contours developed in accordance with NZS6805 should be updated periodically to reflect changes in aircraft fleet, flight path adjustments and usage and future traffic projections for various aviation segments including commercial scheduled passenger and military aircraft. NZS6805 recognises a need to revise and update aircraft noise projections used as a basis for the location of the Airnoise Boundary, also affecting land use planning around the airport.

In May 2022 WIAL released a document “*Wellington Airport Air Noise Boundary Review*” produced by Tonkin & Taylor Ltd (hereafter ‘T&T Report’) specifically intended to inform Council’s District Plan review process regarding future aircraft noise emissions at WIA. The new aircraft noise contours provided within that report reflect the likely level of aircraft noise in the year 2050 taking into account;

- Types of aircraft using the airport.
- Projected number of take-offs and landings on a daily basis, at the design year (2050).
- Time of day that the aircraft operations occur (day and night).
- Runway use (WIA has two runways).
- Meteorological conditions.
- Airport-specific flight procedures.
- Restrictions on timing of aircraft operations.

The projected aircraft noise contours set out within the T&T Report are based on modern aircraft types, with flight numbers based on forecast aircraft movement data for the year 2050. Flight numbers were based on scheduled and non-scheduled movements projected by WIAL for the busiest three-month (90-day) busy period in accordance with NZS6805. The annual 2050 forecast annualised movements totalled 142,770 scheduled movements per year and a further 13,000 movements of non-

scheduled aircraft movements per year¹⁰. Based on historical use of the airport, approximately 6.5% of movements were assumed to occur during the night time period 2200-0700, complying with time of day restrictions in place under the District Plan curfew.

Regarding assumed flight tracks, the T&T Report indicates all flights in the modelling comply with Civil Aviation noise abatement requirements for WIA¹¹. The aircraft selected for modelling were based on modern jet aircraft types for domestic and trans-Tasman movements. Movements to Australian airports and various Pacific destinations were assigned a 'stage length' (aircraft loading factor) relevant to the distance to destination. A mix of turbo-prop aircraft and electric powered aircraft (19 to 50 seats) were assumed for regional flights within New Zealand.

The T&T Report confirms the computer modelling of aircraft noise levels was carried using the AEDT¹² software (version 3d) which we understand is compliant with European Civil Aviation requirements and meets the International Civil Aviation Organization (ICAO) requirements set out within Doc 9911 (2nd Edition), "*Recommended Method for Computing Noise Contours Around Airports*" published in 2018.

Previously, aircraft noise has been modelled at WIA using older noise calculation software called the *Integrated Noise Model* (INM) however the INM model became outdated as the data files setting out aircraft performance and noise data have not been updated for some time for modern aircraft types.

We are aware the T&T aircraft noise modelling has been peer reviewed by acoustic consultants Marshall Day Acoustics who are highly experienced with computer predictions of aircraft noise at New Zealand airports. A summary of the peer review process and findings¹³ set out seven items that the reviewers commented on, and that required addressing or adjustment in the future modelling of aircraft noise at WIA. We understand all these matters were resolved within the final report issued by T&T in May 2022.

Although we have not ourselves carried out any technical checks of the modelling inputs, algorithms, or assumptions on behalf of WCC, we are reasonably satisfied as to accuracy of the modelling output in terms of the reported future aircraft noise contours fit for land use planning purposes. We are of the view that, given the independent review and checks carried out by experts at Marshall Day Acoustics, reasonable confidence should be placed on the accuracy and efficacy of noise modelling results contained within the T&T Report.

4.2.3 Future Aircraft Noise Contours (2050)

Figure 1 below sets out the results of the T&T projections for 2050 projections of aircraft sound levels in terms of average future night-weighted Ldn levels. **Figure 1** shows two key contours, the future 60

¹⁰ By way of comparison, the T&T Report states annualised movements totalled 82,500 movements for 2020 financial year, around 50% of the expected 2050 air traffic adopted in the modelling.

¹¹ Civil Aviation Rules - Part 93 - CAA Consolidation "*Special Aerodrome Traffic Rules and Noise Abatement Procedures*" dated 24 September 2015.

¹² Aviation Environmental Design Tool (AEDT) is a software system developed by the Federal Aviation Administration, Office of Environment and Energy (FAA-AEE). The software dynamically models aircraft performance in space and time to produce fuel burn, emissions and noise.

¹³ Memo to WIAL (Jo Lester) from Darran Humpheson (T&T) Dated 27 May 2022, Job No: 1011279.

dB A Ldn contour line and the future 65 dB A Ldn contour line. These Ldn contour lines are being put forward by WIAL as part of the Proposed Plan process, including a replacement location for the existing Airnoise Boundary location shown on planning map 35 of the Operative District Plan.

Under NZS6805:1992, it is recommended local authorities consider the following factors when deciding to adopt aircraft noise contours into district plans;

- (a) The time frame of the projection;
- (b) The extent of non-compliance of existing land uses with table 1;
- (c) The impacts, including economic, social, health and safety of airport development on surrounding land use;
- (d) National, regional and local development, and national and international transportation requirements;
- (e) The effects of aircraft noise on the welfare, amenity values and health of any affected community;
- (f) The effect of the contours on existing aircraft operators' flexibility to meet the community's demand for services in a commercially and economically viable way;
- (g) New Zealand's obligations to international standards relating to aircraft noise emissions, and programmes to phase out noisier aircraft types;

(ref. NZS6805:1992 clause 1.4.3.7)

Based on our investigations and research, and the above assessment of technical matters, we consider the T&T aircraft noise predictions for 2050 generally meet the relevant requirements (a) to (g) above. Thus, these contours can, in our view, be adopted by Council as a rational a basis for managing aircraft noise in affected areas around the airport within the Proposed District Plan;

The recommendations for naming of noise-affected areas (and control lines) and their use within the Proposed District Plan are explained as follows;

Used for controlling total noise emitted by aircraft using the Airport:	Airnoise Boundary	means a line shown on district plan maps used for controlling the emission of noise received on the ground from aircraft operations at Wellington International Airport measured using rolling 90 day average 24 hour night-weighted sound exposure in accordance with NZS 6805:1992 <i>Airport noise management and land use planning</i> . The location of the Air Noise Boundary is based on the modelled 65 dB A Ldn contour and thus corresponds to the outer extent of the Inner Air Noise Overlay.
Used for implementing land use planning controls in areas around the airport affected by aircraft noise: Air Noise Overlay Comprising:	Inner Airnoise Overlay	An area encompassing properties lying between the Airport and a modelled 65 dB A Ldn contour.
	Outer Airnoise Overlay	An area encompassing properties lying between the modelled 65 dB A Ldn contour and a modelled 60 dB A Ldn contour.



Figure 1 T&T predicted 2050 aircraft noise contours for WIA – showing 60 dBA Ldn and 65 dBA Ldn contours.

4.2.4 Revised Airnoise Boundary

It is instructive to compare the existing Airnoise Boundary of the Operative District Plan with the Airnoise Boundary now being proposed within the aircraft noise modelling for 2050 by T&T and being put forward by WIAL for adoption within the Proposed District Plan. Figure 2 below sets out the aircraft noise contours predicted by T&T for the year 2050, also showing Airnoise Boundary of the Operative District Plan (65 dBA Ldn). It is clear the now proposed Airnoise Boundary based on the 2050 aircraft noise projections covers a smaller area and affects less properties compared to the current Airnoise Boundary.

Analysis carried out by Council’s GIS team has been able to ascertain the land area and numbers of properties affected by each of the two Airnoise Boundaries. The analysis has been carried out without including the land zoned for Airport Special Purposes (i.e. excluding the airport itself) as the objective was to ascertain the numbers of properties (and land area) affected beyond the Special Purpose Airport Zone. The results in terms of numbers of properties affected are;

Proposed DP Zone	No. Properties Within Proposed Inner Airnoise Overlay	No. Properties Within Existing Air noise Boundary
General Industrial Zone	31	40
Local Centre Zone	-	2
Medium Density Residential Zone	381	585
Mixed Use Zone	8	48
Natural Open Space Zone	7	10
Neighbourhood Centre Zone	3	7
Open Space Zone	4	4
Total	496	696

These results show the number of properties (excluding the airport itself) predicted to receive future aircraft noise at levels greater than 65 dBA Ldn would reduce by around 200 properties (or around 29% less) compared to the number located within the current Airnoise Boundary of the Operative District Plan. The above table shows almost all the 200 properties not now predicted to be affected by future aircraft noise at levels greater than 65 dBA Ldn are properties located within the Medium Density Residential Zone.

In terms of the land area affected (excluding the land within Airport Zone) GIS analysis indicates the proposed Inner Airnoise Overlay is around 30% (or 34 hectares) smaller than the land area encompassed by the current Airnoise Boundary of the Operative district Plan. This means, whilst air traffic is predicted to approximately double by 2050 (compared to earlier projects of future air traffic undertaken in the 1990’s on which the current Airnoise Boundary is based) cumulative daily night-weighted future aircraft noise levels at any given location around the airport is predicted to reduce compared to earlier projections, not increase as may be indicated by the increased numbers of aircraft movements now included in the predictions. Reductions in future daily cumulative airport noise appear to be due to these recent predictions incorporating modern, quieter aircraft types operating at WIA.

On the basis of the recommendations of NZS6805 regarding aircraft Ldn noise exposure guidance for noise sensitive activities, decreasing the size of the Airnoise Boundary is considered an important step

towards maintaining and where possible, enhancing, community health and welfare in areas near the airport.

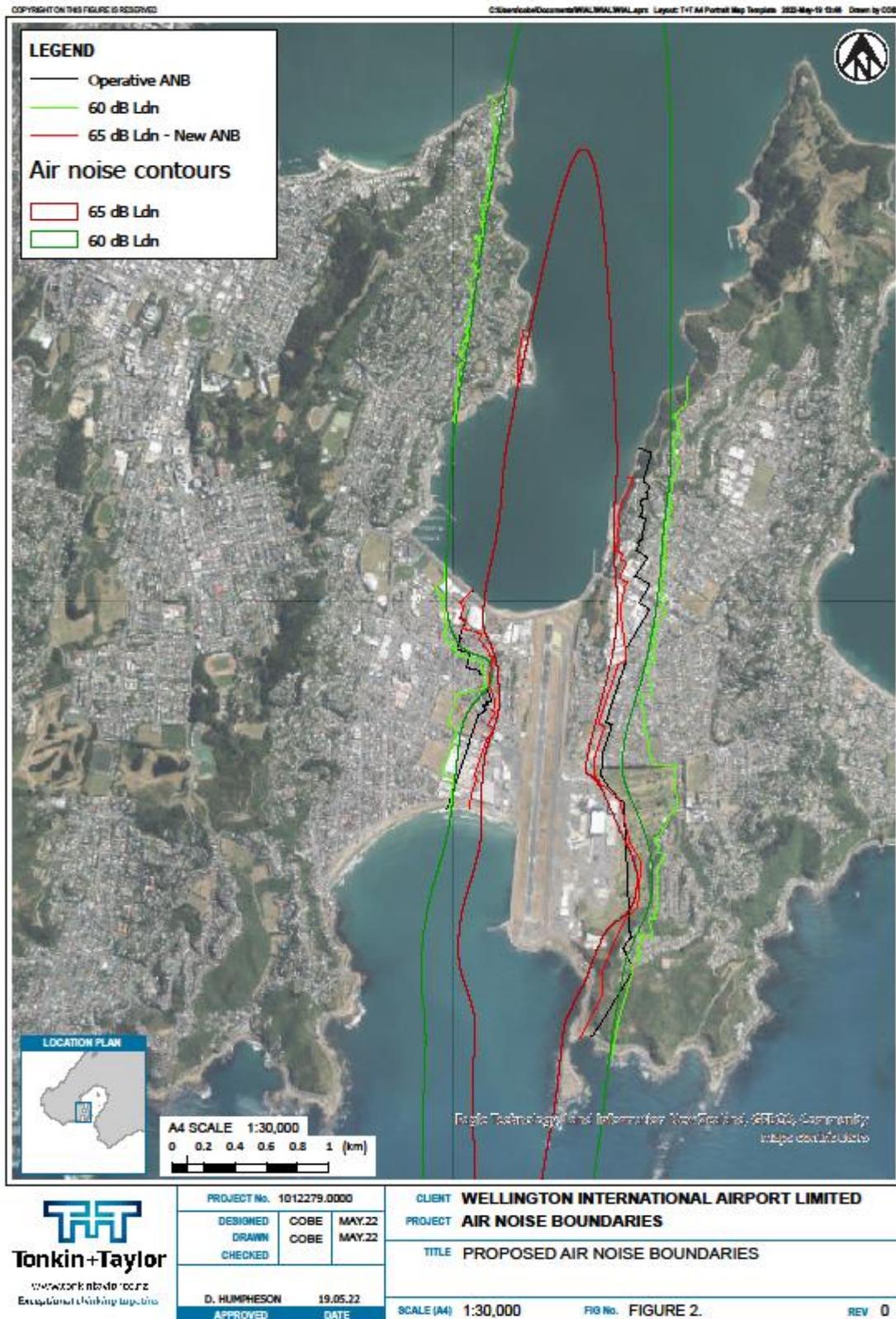


Figure 2 T&T aircraft noise contours showing Airnoise Controls of the Operative District Plan (65 dBA Ldn) and recently predicted 2050 60 dBA Ldn and 65 dBA Ldn aircraft noise contours

A reduction in the area encompassed by the Airnoise Boundary (i.e. reduced number of properties affected in the future by aircraft noise >65 dBA Ldn) is considered an important improvement to capture within the Proposed District Plan as this would be an effective long-term noise mitigation measure to avoid unnecessary potential increases in effects within sensitive receiver sites. Importantly, reductions in area of the Inner Airnoise Overlay are accompanied by reductions in aircraft noise received (in the future) at greater distances from the airport (see discussion below regarding the Outer Airnoise Overlay).

If the opposite were to occur, revised aircraft noise contours showing an increase in the size of the Airnoise Boundary / Inner Airnoise Overlay (a greater number of residential sites within the high noise area) would not be supported as this would signal a greater overall noise effect of airport operations compared to that which has already been modelled and accepted into the Operative District Plan. Increasing long term airport noise effects above the currently permitted level would be inconsistent with the policies and objective of the Operative District Plan for the Airport and Golf Course Recreation Precinct. It is noted Chapter 10 of the Operative District Plan adopts methods requiring a programme of monitoring at the Airnoise Boundary (Method 10.2.5.4 – applies within the first 2 years of the Plan being approved) to check the aircraft noise would not exceed 65 dBA Ldn in the future within the Airnoise Boundary. If adjustments were necessary, these must be *“by way of shrinkage of the location of the Air Noise Boundary”*. The current proposal for the Inner Airnoise Overlay equates to a 30% shrinkage in the size of the Air Noise Boundary that was approved at that time.

As signalled within the T&T proposed locations for the Airnoise Boundary, Inner and Outer Airnoise Overlays, a decrease in permitted total future aircraft noise is proposed compared to the total future noise signalled by the current Airnoise Boundary location set by the Operative District Plan.

4.2.5 Outer Airnoise Overlay

Currently, the Operative District Plan does not require any noise mitigation or land use planning restrictions in areas expected to receive less than 65 dBA Ldn. Submissions by WIAL and others on the Draft District Plan emphasised the need to extend district plan noise mitigation requirements to increase district plan mitigation measures into areas affected by aircraft noise levels less than 65 dBA Ldn to address effects of aircraft noise in ‘moderately’ noisy areas (60 dB to 65 dBA Ldn – the area over which the Outer Airnoise Overlay applies). Such measures would act in tandem with the mitigation measures and land use planning controls adopted within ‘high’ noise areas within the Inner Airnoise Overlay (>65 dBA Ldn).

We agree that introducing noise mitigation within an Outer Airnoise Overlay would improve district plan methods to address both noise effects on the affected population, but in doing so, would also offer improved ‘reverse sensitivity’ protection to the operation of WIA, an important infrastructural asset. We feel requests to expand the mitigation area are justified in terms of more closely aligning District Plan noise mitigation requirements with those of Table 1 of NZS6805:1992 and would help further avoid the adverse effects of moderate levels of aircraft noise received within sensitive residential environments. Extension of mitigation measures out to Ldn 55 dBA is not considered warranted. At levels of received aircraft noise below Ldn 60 dB modern, thermally efficient building designs coupled with appropriate building materials such as double glazing will allow indoor aircraft noise levels to be maintained to within acceptable levels without any specific acoustic requirements.

The recently produced T&T aircraft noise contours indicate the specific areas where receive aircraft noise levels between 60 dB to 65 dBA Ldn (i.e. the Outer Noise Overlay) at the design year of 2050.

Apart from including residential sites within proximal distance to the runway located in Strathmore, Miramar and Rongotai, residential locations further away that overlook Evans Bay in Hataitai and Mount Victoria are also located within the 60 dBA Ldn extent of the Outer Airnoise Boundary. While aircraft noise levels in the future would not be classified as ‘high’ in these areas, aircraft noise levels (and therefore effects) are considered sufficient to justify a ‘moderate’ level of acoustic insulation of new or altered habitable rooms against outdoor aircraft noise, in addition to requiring a minimum ventilation standard for insulated rooms. NOISE-S6 is a companion standard prescribing minimum ventilation requirements where windows need to remain closed to achieve compliance with the acoustic insulation requirements. This new recommendation for inclusion of an Outer Noise Overlay in the Proposed District Plan is considered an enhancement over the operative plan as mitigation measures will more closely align with the idealised recommendations of Table 1 of NZS6805:1992 which, in summary, seek to manage effects on community health and amenity values whilst recognising the need to operate an airport efficiently.

Table 1 of NZS6805 recommend new or altered habitable rooms only be permitted within the Inner Airnoise Overlay subject to a requirement for acoustic insulation – this is the area expected to receive daily aircraft noise at levels greater than 65 dBA Ldn in the future (2050). Properties located within the Inner Airnoise Overlay (i.e. those properties located between the 65 dBA contour and the airport boundary) define the most noise-affected sites and hence a higher standard of insulation is required.

The Outer Airnoise Overlay defines an area of moderate (future) aircraft noise. Although aircraft noise levels are lower than the Inner Airnoise Overlay, due to the shape of the affected land area, a greater number of properties are affected. A comparison of the number of properties affected by ‘high’ levels of future aircraft noise (Inner Airnoise Overlay) and those affected (in the future) by ‘moderate’ levels of aircraft between 60 dB and 65 dBA Ldn (Outer Airnoise Overlay) are shown in the following table;

Proposed DP Zone	No. Properties With <u>Inner</u> Airnoise Overlay (Within the 65 dB contour)	No. Properties With <u>Outer</u> Airnoise Overlay (Between the 65 and 60 dB contours)
General Industrial Zone	31	9
Local Centre Zone		8
Medium Density Residential Zone	381	1,174
Mixed Use Zone	8	65
Natural Open Space Zone	7	4
Neighbourhood Centre Zone	3	9
Open Space Zone	4	12
Special Purpose Airport Zone		
Sport and Active Recreation Zone		1
Total	496	1,282

WIAL’s submission on the Draft District Plan seeks designation conditions be expanded to deliver WIAL’s current LUMIN¹⁴’s ‘Quieter Homes’¹⁵ insulation package to existing residential units [existing

¹⁴ LUMINS - Land Use Management and Insulation for Airport Noise Study,

¹⁵ The WIA Noise Management Plan (updated Feb 2018) prescribes a method called ‘Quieter Homes’ which provides a subsidised package of acoustic mitigation treatment designed to reduce aircraft noise in habitable rooms to Ldn 45 decibels. Via a staged ‘roll out’ the Quieter Homes programme is offered to all dwellings (built before 22 March 2012) within the Airnoise Boundary with either a 100% or a 75% subsidy of the cost, depending

at the time the plan is notified] contained within the Outer Aircraft Noise Overlay. The WIAL submission to the Draft District Plan intends that the Designation conditions include a requirement to extend this programme into the Outer Airnoise Overlay. This approach is supported and is recommended below (see Section 4.4.1). WIAL proposes a staged approach so this work can be carried out incrementally with each affected (existing) house offered acoustic treatment before the growth in 'actual' aircraft noise approaches the future maximum level (aircraft noise at year 2050) for that property. We consider this type of staged approach is suitable although this means it will take some time to complete the full programme of retro-fitting houses. Over time this insulation subsidy can deliver a significant net environmental improvement compared to a 'do nothing' scenario under the Operative District Plan (which offers no mitigation to properties affected in the future by 'moderate' levels of aircraft between 60 dB and 65 dBA Ldn). It is acknowledged that participation is on an 'opt in' and some owners may elect to not take up the offer.

Section 4.4 below sets out recommended changes to Main Site NoR Condition 28 and NOISE-S3 - minimum requirements of the Airport Noise Management Plan to expand the noise mitigation area of the Proposed District Plan to reach new areas only moderately affected by future aircraft noise (60 dB to 65 dBA Ldn).

4.3 Acoustic Insulation & Ventilation Of Habitable Rooms

As a means of enhancing sustainability, District Plans commonly include rules to require minimum acoustic insulation standards to reduce noise received indoors from sources outside the building, mainly within rooms used for noise sensitive activities (habitable rooms). Typically, rooms requiring insulation are found within residential dwellings or apartment buildings, schools, childcare and healthcare facilities or other buildings housing activities sensitive to noise. These activities are recommended to be protected for resource management reasons in all situations where the proposed plan allows for such activities to be established within identified noise-affected environments.

Typically the aim is to achieve no more than 30 to 35 dB indoors during night time within rooms used for sleeping. Indoor sound levels of 35 to 45 dB are generally acceptable within habitable rooms not used for sleeping. Methods for specifying acoustic insulation for habitable rooms within district plans are not advised to be specified by simply quoting an indoor decibel sound limit (in a manner similar to district plan controls for outdoor noise). This is because rules based on indoor sound levels are technically deficient and deliver imprecise outcomes, especially around protecting room occupants from elevated levels of low frequency sounds from outdoor sources.

Rules based on indoor sound level limits do not consistently ensure the room is as quiet or acceptable as the indoor dBA level may suggest. In fact, due to the need to estimate outdoor levels and sound spectrum as a starting point, insulation rules based on indoor received dBA levels hamper building designers and architects in their design of sensitive rooms (no information is provided within the district plan rule on the level of outdoor sound at the plan user's address against which the building envelope must act acoustically, in order to adequately protect indoor spaces).

For new and altered habitable rooms, the Operative District Plan (Residential Zone Rule 5.6.2.14)

on the degree of aircraft noise affecting each property. As keeping doors and windows closed substantially reduces the impact of external noise levels, packages commonly include some form of mechanical ventilation.

specifies new habitable rooms located within the Airnoise Boundary be designed and constructed to achieve an internal level of 40 dBA Ldn with doors and windows closed. This rule uses A-weight sound levels as the metric for ensuring indoor spaces are adequately protected from outdoor aircraft noise, however this outcome is by no means guaranteed under Rule 5.6.2.14¹⁶.

Rather than continuing to adopt an acoustic insulation specification for the Proposed Plan based on specifying the maximum indoor dBA level due to outdoor sources, best practice is considered to be adopting minimum acoustic insulation standards using the *Standardised Level Difference* or $D_{tr,2m,nT,w} + C_{tr}$ metric (as defined within ISO 717-1:2020 *Acoustics — Rating of sound insulation in buildings and of building elements — Part 1: Airborne sound insulation.*) as is already adopted within the Operative District Plan (and within many other district plans in New Zealand) for specifying minimum acoustic insulation requirements for new habitable rooms located within port noise affected areas and central city and centres.

The *Standardised Level Difference* or $D_{tr,2m,nT,w} + C_{tr}$ method is based on specifying the minimum sound insulation level of the external building envelope (of habitable rooms) which is set at a level which ensures indoor sound (due to outdoor sources) will be acceptable for sensitive activities such as sleeping. The $D_{tr,2m,nT,w} + C_{tr}$ method for specifying the acoustic rating of the external building envelope has been adopted in a district-wide sense with NOISE-S4 (Acoustic Insulation – High Noise Areas) and (at a 5 dB lesser standard within NOISE-S5 (Acoustic Insulation – Moderate Noise Areas).

One of the advantages of adopting acoustic insulation based on the $D_{tr,2m,nT,w} + C_{tr}$ metric is that insulation requirements can be field checked and tested in the field by adopting the procedures set out within relevant international Standards¹⁷. There are no NZ or international standards guiding on methods to be used to ascertain compliance with indoor aircraft noise levels based on achieving certain maximum indoor A-weighted sound levels.

Demonstrating compliance with the $D_{tr,2m,nT,w} + C_{tr}$ requirements of NOISE-S4 and NOISE-S5 is proposed to be simplified by offering two possible pathways described as either:

- 1) By providing to Council an ‘*acoustic design certificate*’ signed by a suitably qualified acoustic engineer who has carried out an acoustic assessment and confirms the design and construction of proposed habitable rooms will comply with the relevant $D_{tr,2m,nT,w} + C_{tr}$ acoustic insulation standard; or
- 2) A statement is provided to Council that habitable rooms are designed and constructed in a manner that accords with the relevant “Minimum construction” standard specified within Table XX (NOISE-S4) or Table YY (NOISE-S5). These tables cover typical construction types and are provided as a simplified pathway to compliance for buildings of typical design and construction. This approach is an extension of the pathway to compliance currently provided within the Operative District Plan whereby a minimum construction standard is specified (in

¹⁶ Basically, the problem is that using an indoor A-weighted sound limit as a means of specifying a suitable standard of acoustic insulation of buildings does not require building claddings, glazing, wall linings, etc to achieve any specific degree of acoustic protection. Buildings are generally ineffective in reducing low frequency sound found at significant levels in outdoor areas. Because the A-frequency weighting sound level is heavily weighted towards sound occurring in the mid- and high-frequency range, exterior walls or other building elements could be quite lightweight in design as they only have to be effective at reducing sound occurring within the mid-frequency range to satisfy minimum insulation indoor sound limit.

¹⁷ For example, ISO 16283-3:2016 *Acoustics — Field measurement of sound insulation in buildings and of building elements — Part 3: Façade sound insulation.*

Table 29 of *Schedule 14 – Building Standards for Indoor Sound Insulation for Noise Sensitive Activities*) as an option to demonstrate compliance with the $D_{tr,2m,nT,w} + C_{tr} >30$ dB insulation requirement of rules applying to new habitable rooms located within the following zones;

- City Centre Zone
- Mixed Use Zone
- General Industrial Zone
- Neighbourhood Centre Zone
- Local Centre Zone
- Metropolitan Centre Zone
- Waterfront Zone
- Outer Port Noise Affected Area-

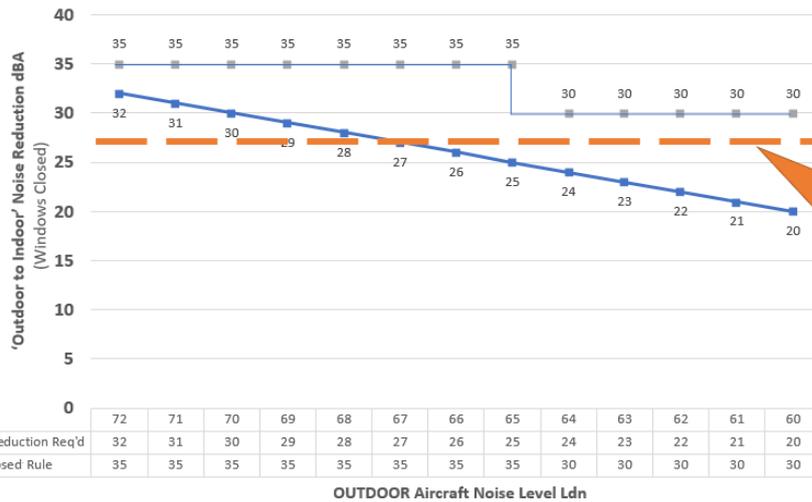
By adopting the above proposed minimum acoustic insulation standards and compliance methods for insulation against aircraft noise using two relevant $D_{tr,2m,nT,w} + C_{tr}$ insulation standards within the Inner and Outer Airnoise Overlays, and by providing options for pathways to compliance, the Proposed District Plan acoustic insulation standards will be streamlined and efficient. This is expected to improve the experience of both Council staff undertaking processing of building consents and designers and architects engaged in designing and consenting new or altered habitable rooms.

A major feature of the proposed acoustic insulation approach is that the Proposed District Plan will include (within the Noise Chapter) a consistent, integrated and unified set of requirements for acoustic insulation against all relevant noise sources, rather than the current situation whereby the district plan standards are uniformly based on the $D_{tr,2m,nT,w} + C_{tr}$ method (with the associated Table 19 option as a compliance pathway) except for aircraft noise insulation standards applying within the Airnoise Boundary. Currently, acoustic insulation against aircraft noise is required to be assessed in terms of indoor levels of aircraft noise which, as above, is no longer the preferred method. Interestingly, Council officers and some submitters previously fully supported the adoption of insulation against aircraft noise being specified using the $D_{tr,2m,nT,w} + C_{tr}$ units under Plan Change 73 to the Operative District Plan (Notified 29 September 2009) however this change in airport noise insulation rules was not adopted within the final decision report for reasons that are unclear.

In terms of comparing acoustic outcomes, the following graph shows a comparison of existing 'outdoor to indoor' noise reduction requirements with proposed insulation standards. Insulation standards for the Proposed District Plan are based on $D_{tr,2m,nT,w} + C_{tr} >35$ in high noise areas and >30 dB in moderate noise areas. The graph also shows the plotted results of field testing of 'outdoor-to-indoor' reduction found during field testing¹⁸ of several typical habitable rooms within (untreated) dwellings located near to WIA undertaken in 2012 as part of the LUMINMS Stage 2 programme of work.

¹⁸ The measured sound reductions have been converted by the following adjustment; $D_{at,E2m,nT} - 3 \text{ dB} = D_{tr,2m,nT,w} + C_{tr}$

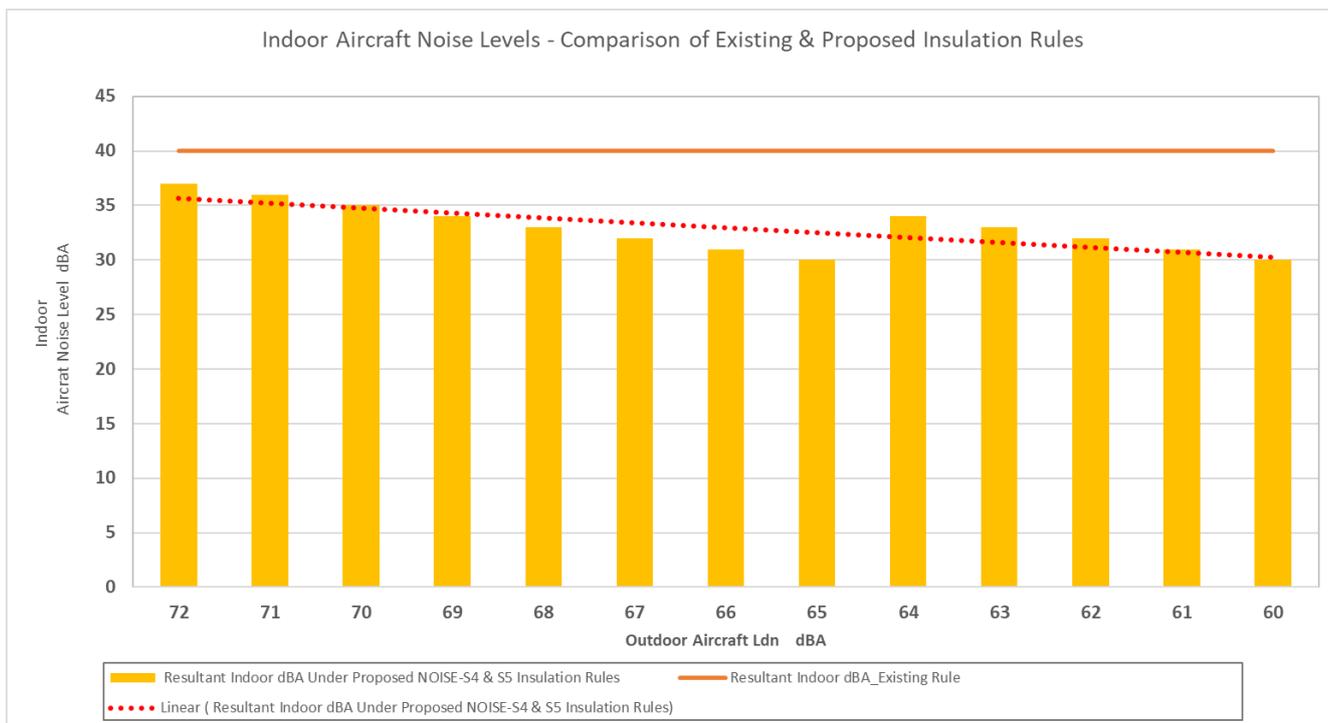
Aircraft Noise Insulation - Comparison of Noise Reduction – Existing & Proposed



Measured – Typical Existing Houses
 Av. 27 dB Reduction Found via Field Testing Of Existing (untreated) Rooms (with windows closed) MDA, 2012

It can be seen the District Plan proposed insulation provisions impose a slightly higher insulation standard (reduction required range from 30 to 35 dB) compared to aircraft noise insulation rules of the Operative District Plan (reductions required range from 20 to 32 dB). However when compared to the performance of existing dwellings (with windows closed) the additional standard of treatment required is considered modest. For example, within the highest areas near the airport received Ldn 72 dBA, the requirement is to achieve a noise reduction only 8 dB greater than has been found via field testing of typical (existing) habitable rooms, with windows closed.

In terms of improved outcomes for occupants of future habitable rooms, the graph below demonstrates how acoustic insulation proposals of the Proposed District Plan based on $D_{tr,2m,nT,w} + C_{tr} > 35$ in high noise areas and > 30 dB in moderate noise areas will deliver indoor aircraft noise levels (at the 2050 design year) that would measure between 30 to 35 dBA indoors. This is a lower indoor aircraft sound level than that currently delivered by Rule 5.6.2.14 of the Operative District Plan (being 40 dBA Ldn indoors). As this is achieved with only +8 dB improvement over an untreated building, this improved outcome is considered to be able to be delivered at reasonable cost to the homeowner or builder.



If there are additional costs in constructing new or altered rooms to comply with NOISE-S4 and NOISE-S5 insulation standards (compared to meeting the existing ‘indoor 40 dBA’ requirement of the Operative District Plan) it is considered any such extra costs would be minimal and more than offset by improved (lower) indoor aircraft noise levels with commensurately lower levels of indoor disturbance including better protecting sleep.

Ventilation is an important consideration when drafting acoustic insulation standards. Indoor sound targets will not be achieved in rooms with open windows whether they are acoustically insulated or not. Insulation rules therefore will include a requirement for an alternative form fresh air ventilation (other than openable windows or doors) within any room to which acoustic insulation requirements of NOISE-S4 or NOISE-S5 apply. The ventilation requirements of NOISE-S6 are supported as this standard takes a pragmatic approach to the provisions of basic quantities of fresh air in rooms used for sleeping where windows must be kept closed to achieve the required acoustic insulation standard¹⁹.

4.4 Aircraft Noise Management Plan

As set out above in Section 2.1.3 of this report, Chapter 10 of the Operative District Plan prescribes (at 10.2.5.4) a ‘method’ that requires WIA to implement a Noise Management Plan (NMP). to “...assist all interested parties in complying with the objectives and rules in the District Plan” (ref. Rule 10.2.5.4). The NMP is intended to manage the local noise environment to “...maintain and where possible enhance community health and welfare” and is required to cover specific matters detailed in the rule including specifying details of methods and processes for remedying and mitigating adverse effects of airport noise. It is noted within Chapter 10 and within the Airport Designation there is no obligation on WIA to conduct its activities in accordance with the NMP required by Rule 10.2.5.4.

¹⁹ NOISE-S6 requires, where windows must remain closed to achieve compliance with NOISE-S4 and NOISE-S5, a source of fresh air ducted from outside to be installed at the time of fit-out. This supplementary source of air is to achieve a minimum of 7.5 litres per second per person which can be achieved by a small fan and can ensure a basic level of indoor comfort without the need for a costly, full-blown mechanical ventilation system.

4.4.1 Expansion of Quieter Homes Programme

As above, the Proposed District Plan intends that WIAL would implement a programme for the gradual retro-fit of acoustic insulation (& ventilation methods) into habitable rooms within dwellings built and in place at the date the new designation is confirmed.

We therefore recommend WIAL Main Site designation Condition 28 be amended so that the acoustic mitigation obligations that are currently delivered via the LUMINs programme by WIAL are incrementally extended out across the Outer Airnoise Overlay (encompassed by the 60 dBA Ldn noise contour). Mitigation (insulation of habitable rooms within existing dwellings) would be triggered in an incremental way, to coincide with the growth in current day noise contours and the extent to which tis growth approaches the ultimate 2050 aircraft noise level at the affected property. Currently Quieter Homes programme only applies to existing residential dwellings within the Airnoise Boundary. The recommendation is to amend NOISE-S3 "Airport Noise Management Plan" clause 7 which sets out the minimum prescription for the Airport Noise Management Plan.

7. Methods necessary for the Airport to complete implementation of the Quieter Homes Programme within the Inner and Outer Airnoise Overlays;

As obligations to implement this programme of works also sits within the proposed Main Site designation, any changes to the aircraft noise planning framework in the Proposed Plan needs to be coupled with an alteration to the designation to expand the function of the noise management plan conditions as they relate to the Quieter Homes programme.

Recommendations for Main Site Designation condition 28 are set out as follows;

Quieter Homes Programme

- 28. The Requiring Authority shall offer to fund noise mitigation for all existing residential properties within the Inner & Outer Airnoise Overlays ~~Air Noise Boundary~~ in accordance with the Quieter Homes Programme. The details and obligations which guide the implementation of the Quieter Homes Programme shall continue to be set out in the ANMP for all residential properties within the Inner & Outer Airnoise Overlays ~~Air Noise Boundary~~. The mitigation shall be designed to achieve an indoor design sound Level of 45 dB Ldn or less, based on the Air Noise Boundary at predicted fully developed capacity.*

4.4.2 High Noise Areas

While overall future aircraft noise will not reach the levels previously predicted (on which the current Airnoise Boundary is located), in the future high levels of exposure to aircraft noise are expected within some close-by residential sites at the design year 2050. As above (see Section 2.1), Table 1 of NZS6805 recommends "consideration should be given to purchasing existing homes, or relocating residents, and rezoning the area to non-residential use only" where aircraft noise levels are expected to exceed 70 dBA Ldn. At future aircraft noise levels exceeding 75 dBA Ldn Table 1 indicates "There is a high possibility of adverse health effects. Land shall not be used for residential or other noise sensitive uses".

The LUMINS Stage 2 study (2009) page 52 acknowledges that (at the time) some residential were projected to exceed 75 dBA Ldn in the future. It was also acknowledged it will be difficult to physically achieve effective insulation within these existing dwellings to achieve a satisfactory internal noise level. LUMINS Stage 2 recommended that these properties are purchased in time and their residential use be terminated. The Noise Management Plan refers to a link²⁰ which is the basis of the following map showing ownership of sites which were expected (at the time) to receive aircraft noise at levels >75 dBA Ldn;



Part C of the WIA Noise Management Plan (updated 2018) identified (at the time) a total of 44 residential properties on Bridge Street, Cairns Street and Calabar Road within the Ldn75 dB contour and stated these would acquire and decommissioned from residential use. All WIAL-owned dwellings were removed following the LUMINS recommendation. We understand WIAL's Fair Valuation and Purchase Programme has been offered to home owners in affected areas since 2009 and has been relatively successful in de-populating sites most affected by aircraft noise to the extent that most of the houses shown above as expected to receive >75 dBA are now removed. From site observations it appears only one or two sites expected to receive >75 dBA remain occupied.

Sites expected to receive elevated aircraft noise levels at 70 dBA to 75 dBA in the future (2050) these

²⁰ <https://drive.google.com/open?id=1u3BhINapBq1kP43Dr00xcU43fa4&usp=sharing>

are shown in the contour diagram overleaf based on the above 2050 aircraft noise contours provided by T&T except this is a 'zoomed in' area and shows the predicted 70 dBA and 75 dBA Ldn contours.



T&T Ldn Predictions for 2050 – Showing future Ldn 70 and 75 dBA contours

In recognition of the submissions received (e.g. ENAAS (Wellington Public Health)) and the duty that exists for Council under RMA s. 31(1)(d) "*control of the emission of noise and the mitigation of the effects of noise*" it is recommended the minimum requirements (at NOISE-S3) for the Airport Noise Management Plan (ANMP) be amended to include consideration of options for giving effect to the recommendations of table 1 of NZS6805 for all occupied residential sites predicted to be affected by aircraft noise levels exceeding 70 dBA Ldn. The emphasis should however be on existing dwellings located in very high noise areas on the west side of Bridge Street and the first row of houses along Calabar Road.

We recommend amending the minimum requirements ANMP set out in NOISE-S3 to include a requirement for the Airport Noise Management Committee (ANMC) to give consideration to the best options to avoid the continued occupation of residential sites in areas expected to receive aircraft noise levels >70 dBA Ldn in the future. The aim would be for the ANMC to investigate, identify and report on methods (if warranted or practical) that would result in a future pattern of land use activities that more closely aligned with the land use planning recommendations of Table 1 of NZS6805.

The recommended amendment is set below (as a new clause, 7a) as follows;

7a. Investigate, report on and, if warranted, action practical land use planning initiatives that would result in a modified pattern of land use activities for occupied residential sites in areas expected to receive aircraft noise levels >70 dBA Ldn in the future. The aim of the initiative shall be to achieve a final result that more closely aligns with the land use planning recommendations of Table 1 of NZS6805.

This is a recommendation that requires the ANMC to investigate and consider the issue. If the ANMC did decide to act on this matter, this would have a positive effect of reducing the number of residents located within highly noise-affected sites while also assisting in reducing the potential for reverse sensitivity noise effects on the operation of the Airport. If the ANMC decided at the conclusion of the investigation that actions to change the pattern of land uses in high noise areas to a lesser sensitive pattern of uses could not be justified, then this decision will have been made by the key stakeholders and would be reasonable under the circumstances.

5 Summary

Port noise and aircraft noise control methods, together with reverse sensitivity provisions of the Operative District Plan have been reviewed as well as those set out within the notified Draft District Plan. Submissions received regarding port noise and aircraft noise have been considered.

The aim has been to assess the relevant issues, assess preferred port noise and aircraft noise district plan provisions and to amend and update these provisions in line with submissions received and in accordance (as far as practical) with the recommendations set out in the two relevant NZ Standards;

- NZS6805:1992 *Airport Noise Management & Land Use Planning* (hereafter NZS6805); and
- NZS6809:1999 *Acoustics - Port Noise Management and Land Use Planning* (hereafter NZS6809)

Although recommendations of these two NZ Standards are adopted, at least in part, within Operative District Plan, amendments and efficiencies have been identified that would improve the way the Proposed District Plan manages the effects of noise from port-related activities and from operations at Wellington International Airport.

While recommendations are quite limited in terms of methods used to control and manage port noise within the Proposed District plan, significant amendments have been identified for methods proposed for this Plan to control and manage noise from operations at Wellington International Airport.

Key points are;

- WIAL have produced (via their consultants T&T) new aircraft noise contours for the expected future situation in 2050. These contours are recommended as a basis for adjusting (shrinking) the Airnoise Boundary which has the primary effect of allowing less total aircraft noise at the

airport in the long term

- Management of effects on people and communities (and enhancing reverse sensitivity protection of airport operations) is recommended via adoption of an Outer Airnoise Overlay signalling areas where new habitable rooms will require acoustic insulation in the future (and possibly ventilation).
- A significant improvement in mitigating the effects of aircraft noise is recommended via enhancement to the existing *Quieter Homes Programme* which is recommended to be implemented via the ANMP to expand the noise mitigation area of the Proposed District Plan to reach new areas (Outer Airnoise Overlay) which will be only moderately affected by future aircraft noise (60 dB to 65 dBA Ldn).
- Enhancement and integration of methods for specifying acoustic insulation of habitable rooms across the entire district plan so that aircraft noise, like other outdoor noise sources such as noise from roads, rail and from land use activities in certain commercial and industrial areas be managed entirely by insulation standards prescribed within NOISE-S4 and NOISE-S5 based on the universal use of the $D_{tr,2m,nT,w} + C_{tr}$ metric for specifying building performance.
- The acoustic insulation enhancements include a provision for compliance to be achieved for typical construction types via compliance with tables setting out minimum construction standards for external building elements of habitable rooms
- A recommendation is made for the Airport Noise Management Committee (ANMC) to investigate and report on possible methods for re-assigning the use of occupied residential sites close to the airport (receiving potentially very high levels of aircraft noise) to a less sensitive type of land use in the future. This a requirement placed on the ANMC to investigate rather than a direction to implement any particular programme of work.

Implementing the above recommendations within the Proposed District Plan is considered integral to enhancing the protection of the environmental, social, economic and cultural wellbeing of present and future generations while enabling the port and airport to grow and operate efficiently.

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