

17 NOISE

17.1	ISSUES	3
17.2	OBJECTIVES	3
17.3	POLICIES	3
17.4	RULES	4
17.5	PERFORMANCE STANDARDS	5
17.6	NOISE INSULATION TABLE	14

17 NOISE

The objectives, policies and rules in this chapter apply across the District. They are grouped together to prevent repetition throughout the Plan.

The emission of noise is an intrinsic part of most activities which has the potential to produce adverse effects in the community. The controls in the Plan reflect the need for some flexibility while providing noise control standards that are achievable for the community, yet ensure protection from excessive or unreasonable noise.

The New Zealand Noise Standards are nationally based standards which give guidance to the measurement of noise and the appropriate levels at which to control noise effects. They have been used as basic guidance documents on the approach to noise in this Plan. Notwithstanding the noise standards specified in the Plan, the Council reserves the powers conferred on it by the relevant sections of the Act to control any noise which has become an objectionable element or nuisance.

In particular, section 16 of the Act imposes a duty on all persons to avoid unreasonable noise and section 17 of the Act imposes a duty on all persons to avoid, remedy or mitigate adverse effects, whether or not the activity complies with the rules in this Plan. The Council has powers under section 322 of the Act to issue 'Abatement Notices' and under section 327 to issue an Excessive Noise Direction and these mechanisms can be used to ensure that the best practicable means is adopted to reduce noise levels.

Equipment such as ventilation, air-conditioning and refrigeration plant in commercial and industrial zones may cause a nuisance to neighbouring residents notwithstanding that they may comply with the Plan's noise standards. Accordingly, to avoid the possibility that Council may take abatement action in future and require expensive remedies, the location and sound insulation of new activities should be carefully considered to minimise noise nuisance.

Airports, and their associated flight operations, generate noise. This noise is distributed over a wide geographical area, and can vary from barely perceptible to significant nuisance depending on the sensitivity to air noise of the activity where the noise occurs. These provisions manage the relationship between air noise and land use activities that may be sensitive to that air noise. Note that aircraft noise generated in flight is not controlled under the Resource Management Act.

Vibration is often assessed at the same time as noise effects. However, there are no relevant New Zealand Standards to assess vibration effects, therefore the issue is dealt under the nuisance provisions of the Health Act

1956 or as an adverse effect that there is a duty to manage under section 17 of the Act.

17.1 ISSUES

- 17.1.1** Activities can produce unwanted sound that affects the health and safety of people as well as the amenity of an area.
- 17.1.2** Noise sensitive activities located in existing high noise environments and the adverse effects of that noise cannot reasonably be mitigated.

17.2 OBJECTIVES

- 17.2.1** To enable noise at levels which do not have an adverse effect on human health.
- 17.2.2** An acoustic environment within each zone that is compatible with the character of the area.

17.3 POLICIES

- 17.3.1** Ensure that new land use activities, subdivision or development adjoining strategic land transport networks including, the railway corridor, avoid, remedy or mitigate any potential adverse reverse sensitivity effects of noise and vibration; generated by that land transport network provided that best practicable options have been implemented by the transport operator.
- 17.3.2** To manage noise emissions at levels, time restrictions or in locations which protect the health of individuals and the community.
- 17.3.3** Ensure that noise occurs within limits that maintain and reflect the amenity values and character of the locality by:
 - a. Limiting the sources, type, duration, timing or location of the noise;
 - b. New noise sensitive activities are acoustically isolated to mitigate any adverse noise effects from existing noise generating activities.
 - c. Requiring adoption of the ‘best practicable option’ and regular maintenance of noise generating equipment or activities; and
 - d. Requiring the use of landscaping to mitigate the perception of noise.
- 17.3.4** To maintain the character and amenity values of the rural zones with respect to noise, without unduly restricting rural activities. Limits for noise received by occupants of dwellings will be set to avoid restrictions on rural activities, provided that such activities adopt the best practicable option.
- 17.3.5** To ensure that there is a uniform approach to the measurement of noise effects and assessment of their adverse effects, all sound emissions shall be measured and assessed in accordance with:

- a. New Zealand Standard 6801:2008 Acoustics - Measurement of Environmental Sound.
- b. New Zealand Standard 6802:2008 Acoustics - Environmental Noise.
- c. New Zealand Standard 6803:1999 Acoustics – Construction Noise
- d. NZS 6805:1992 Airport Noise Management and Land Use Planning
- e. New Zealand Standard 6806:2010 Acoustics - Traffic Noise from New or Altered Roads
- f. New Zealand Standard 6807:1994 Noise Management and Landuse Planning for Helicopter Landing Areas
- g. New Zealand Standard 6808:2010 Acoustics – Wind Farm Noise
- h. New Zealand Standard 6809:1999 Acoustics - Port Noise Management and Land Use Planning
- i. AS/NZS1276.1:1999 Acoustics- Rating of sound insulation in buildings and of building elements Part 1: Airborne sound insulation.
- j. ISO 140-5:1998 Acoustics – Measurement of Sound Insulation In Buildings And Of Building Elements Part 5: Field Measurements Of Airborne Sound Insulation Of Façade Elements And Facades.

17.4 RULES

17.4.1 Restricted Discretionary Activities

The following are restricted discretionary activities:

- a. Events at Springvale Park or Cooks Gardens that do not comply with the performance standards at Section 17.5.

Council restricts its discretion to:

- o Preparation of an Operational Noise Management Plan by a suitably qualified and experienced acoustic consultant suitable to Council and containing:
 - o Description of activity including layout and position of noise sources on site;
 - o Description of sound sources including auxiliary sound sources
 - o Hours of operation;
 - o Proposed Management methods in line with the ‘Best Practical Option’ [BPO] defined under the RMA and related sections of the Act including s.16 and s.17 requirements;
 - o Noise monitoring procedures;
 - o Community consultation and liaison including a list of potentially affected residential sites.
- b. Any permitted activity in a zone that does not comply with the noise performance standards in Section 17.5

Council restricts its discretion to:

- i. The potential effects on human health;
- ii. Limiting the sources, type, duration, timing or location of the noise;
- iii. Preventing noise sensitive activities within certain distances of the source of the noise unless sound insulated;
- iv. Requiring the use of the 'best practicable option' and regular maintenance of noise generating equipment or activities; and
- v. Requiring the use of landscaping to mitigate the perception of noise.

17.4.2 Discretionary Activities

The following activities are discretionary activities:

- a. Any activity that produces noise that is not provided for as a permitted or restricted discretionary activity.

17.5 PERFORMANCE STANDARDS - Noise

17.5.1 General

All Activities shall implement best practice options to minimise adverse noise effects.

Note: Council may require confirmation of compliance with any of these standards, from a suitably qualified and experienced acoustic expert.

17.5.2 Noise Sensitive Activities (including dwellings)

- a. Noise Sensitive Activities shall be located at least 20 metres from the nearest traffic lane of a State Highway where the posted speed is at least 70km/hour.
- b. New, altered (more than 10% of the existing habitable gross floor area) or relocated buildings for a noise sensitive activity on any site:
 - o Within any commercial or manufacturing zone (excluding the Airport Enterprise Zone); or
 - o Within 30 metres of a railway designation (District Plan reference: D204); or
 - o Within 80 metres of any portion of the State Highway 3 designation (District Plan reference: D207) where a posted speed limit of at least 70km/hr applies; or
 - o Within 80 metres of any portion of the State Highway 4 designation south of the Whanganui River Road intersection (District Plan reference: D215) where a posted

speed limit of at least 70km/hr applies; or

- Within 50 metres of any portion of the State Highway 4 designation north of the Whanganui River Road intersection (District Plan reference: D215) where a posted speed limit of at least 70km/hr applies; or
- Within 50 metres of any portion of a State Highway designation (District Plan reference: D207 and D215) where a posted speed limit of less than 70km/hr applies, but only in respect to new dwellings erected on such a site;

must comply with at least one of the following:

- i. All habitable rooms in a new or altered building is be designed to achieve an insulation rating of no less than $D_{2m,nT,w} + C_r > 30$ dB for the external building envelope of each habitable room when tested and verified in accordance with the following standards:
 - AS/NZS ISO717.1:2004 Acoustics – Rating of sound insulation in buildings and of building elements – Airborne sound insulation.
 - ISO 16283-1:2014 Acoustics – Field measurement of sound insulation in buildings and of building elements – Part 1: Airborne sound insulation.

This can be achieved by using the exact construction specification and schedule as set out in Section 17.6.

or

- ii. An acoustic design certificate is provided to Council by a suitably qualified acoustics specialist (suitable to Council) which confirms that when built to the recommended design and specification will achieve the minimum acoustic insulation standard of $D_{2m,nT,w} + C_r > 30$ dB for the external building envelope of each habitable room.

or

- iii. An acoustic design certificate is provided to Council by a suitably qualified acoustics specialist (suitable to Council) stating the outdoor noise level at the most affected exterior of the building containing the habitable room will be unlikely to exceed:

55dB LAeq(1hr) for rail traffic noise

57 dB LAeq(24hr) for road traffic noise

This can be used where a landscaping or physical noise insulation solution is proposed.

or

- iv. Evidence is provided of a solid and continuous building, fence, wall or landform that blocks the line of sight from all windows and doors of every new or altered habitable room to any part of the road surface of the State Highway designation provided all habitable rooms are also located more than 50 metres from the State Highway designation.
- v. For dwellings, road-traffic noise of 40 dB LAeq(24hr) inside all habitable spaces.

A design report prepared by a suitably qualified and experienced acoustics specialist must be submitted to the Council, prior to the construction or alteration of any dwelling. The design report must confirm that, when built to the recommended design and specification, the maximum indoor sound level will not be exceeded in any habitable spaces. The design must take into account the future permitted use of the State Highway, for existing roads this is achieved by the addition of 3 dB to existing measured or predicted sound levels.

- c. If the above standard cannot be met with openable doors and windows then:
 - i. Mechanical air ventilation is required in accordance with provisions of the New Zealand Building Code G4- Ventilation.
 - o The occupant must be able to control the ventilation rate in increments up to a high air flow setting that provides at least 6 air changes per hour.
 - o The sound of the system must not exceed 35 dB LAeq(30secs) when measured 1m away from any grille or diffuser.

17.5.3 Mining Explosives

- a. The measurement of blast noise (air blast) from explosives related to mining, quarry, mineral processing or construction activity shall be carried out in accordance with AS 2187. Part 2: 2006 Explosives Storage and Use Part 2: Use of Explosives.
- b. Blast noise (air blast) from explosives related to mining, mineral processing or construction activity shall not exceed a peak sound pressure level of 128dB.
- c. Blast noise (air blast) shall be measured at any point within the notional boundary of any dwelling unit, other than a dwelling unit on the same site as the activity.
- d. Neighbouring sites shall be advised of pending blasts, at least 48 hours and again at least 1 hour before any such blast.
- e. Peak particle velocity from blast vibration measured on any foundation

of an adjacent occupied building not connected with the site, or suitable location adjacent to the building, shall not exceed 25mm/second for commercial buildings or 10mm/second for dwellings and buildings of similar design.

17.5.4 Telecommunication Cabinets

Noise emission levels shall comply with Clause 9 of the Resource Management [National Environmental Standards for Telecommunication Facilities] Regulations 2008.

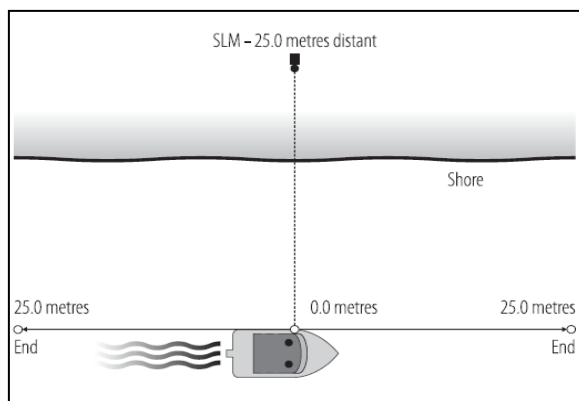
17.5.5 Commercial Boating

Sound emissions from commercial boating activities shall not exceed the following limits:

- a. When the boat is “wide open throttle” the noise measured at 25 metres will be less than:

77 dB L_{ASmax} for vessels to be operated between 0800 and 2000 hours;

67 dB L_{ASmax} for vessels to be operated between 2000 and 0800 hours.



17.5.6 Rural Environment

Activities in the Rural Production Zone, Rural Lifestyle Zone or Rural General Zone shall comply with the following:

- a. Noise emissions shall not exceed the following limits at any point within the notional boundary, unless provided for elsewhere in this section.

NOISE LIMIT dB LAeq(15min)			LAFmax dBA
Daytime 6.00am- 7.00pm	Evening 7.00pm-10.00pm	Night time 10.00pm-6.00am	Night time 10.00pm – 6.00am
50	45	40	75

- b. The operation of gas guns for the purpose of bird scaring shall be permitted provided that:
 - i. The gas gun device shall be located so that the maximum number of devices does not exceed one device per four hectares of land in any single land holding, except that in the case of a single land holding less than four hectares in area, one device shall be permitted.
 - ii. The device shall only be operated between 6.30 am and 8.00 pm on any day.
 - iii. The operation of the device shall be controlled so that the maximum number of discharges per time period does not exceed 6 within any 60 minute period.
 - iv. Sound emitted from the device shall not exceed L_{AE} 65 dB measured within the notional boundary of any rural dwelling or at any point in a residential zone. Sound levels shall be measured in accordance with NZS6801:2008 *Acoustics – Measurement of Sound*.
 - v. No device shall be placed in such a manner that any public place receives noise exceeding exceed L_{AE} 90 dB measured in accordance with NZS6801:2008 *Acoustics – Measurement of Sound*.
- c. The operation of avian distress alarms for the purpose of bird scaring shall be permitted provided that:
 - i. The device shall not be used within 300 metres of a notional boundary of any dwelling.
 - ii. The device shall only be operated between 6.30 am and 8.00 pm on any day.
 - iii. Sound emitted from the device shall not exceed $L_{Aeq}(15 \text{ min})$ 50 dB when measured within the notional boundary of any rural dwelling or at any point in a residential zone;
 - iv. No device shall be placed in such a manner that in any public place receives noise exceeding exceed L_{Amax} 80 dB
- d. The operation of frost fans for the purpose of protecting a crop from frost from bud burst to harvest shall be permitted provided that noise (excluding maintenance and testing) does not exceed 55 dBA L_{eq} (15min):
 - i. At any point within the notional boundary of any noise sensitive activity; or

- ii. At a distance of 300 metres from the device.

17.5.7 Residential Environment

Activities in the Residential, Coastal Residential and Rural Settlement Zones shall comply with the following:

- a. Sound emissions from any activity shall not exceed the following limits at any point within the boundary of any other site zoned for residential, coastal residential or rural settlement purposes.

NOISE LIMIT dB LAeq(15min)			LAFmax dBA
Daytime 7.00am-7.00pm	Evening 7.00pm-10.00pm	Night time 10.00pm-7.00am	Night time 10.00pm – 7.00am
55	45	40	75

17.5.8 Commercial Environment

Activities in the Arts and Commerce, Riverfront, Central Commercial, Neighbourhood Commercial or Outer Commercial Zones shall comply with the following:

- a. Sound emissions from any activity shall not exceed the following limits at any point within the zones specified:

	NOISE LIMIT dB LAeq(15min)			LAFmax dBA
	Daytime 7.00am- 7.00pm	Evening 7.00pm- 10.00pm	Night time 10.00pm- 7.00am	Night time 10.00pm – 7.00am
Residential Zone	55	45	40	75
Other Zones	65			85

17.5.9 Industrial Environment

Activities in the Manufacturing Zone shall comply with the following:

- a. Sound emissions from any activity shall not exceed the following limits at any point within the zones specified:

	NOISE LIMIT dB LAeq(15min)	LAFmax dBA

	Daytime 7.00am- 7.00pm	Evening 7.00pm- 10.00pm	Night time 10.00pm- 7.00am	Night time 10.00pm – 7.00am
Residential Zone	55	45	40	75
Other Zones	65		55	75

17.5.10 Airport Enterprise Zone

Activities in the Airport Enterprise Zone shall comply with the following:

- a. Sound emissions from any activity (excluding airport operational noise) shall not exceed the following limits when measured within the boundary of any land zoned Central Commercial, Outer Commercial or Neighbourhood Commercial:

NOISE LIMIT dBA(10min)		LAFmax dBA
Daytime 7.00am- 10.00pm	Night time 10.00pm-7.00am	75 or L95 background sound level plus 30dBA, whichever is lower
65	55	

- b. Sound emissions from any activity (excluding airport operational noise) shall not exceed the following limits when measured within the boundary of any land zoned for residential purposes:

NOISE LIMIT dBA(10min)		LAFmax dBA
Daytime 7.00am-6.00pm	Night time 6.00pm-7.00am	85 or L95 background sound level plus 30dBA, whichever is lower
55	45	

- c. Residential Units Internal Noise

New aircraft hangar dwellings shall:

- i. Be fitted with acoustic insulation to ensure that noise does not exceed L_{dn} 40 dBA in any habitable room with all doors and windows shut.

- ii. Require an Acoustic Design report from a suitably qualified acoustics specialist confirming that any new building is designed to meet the (i) above.
- d. Aircraft Engine Testing
 - i. No person shall operate an aircraft engine for the purpose of engine testing unless carried out in compliance with the following noise levels within the notional boundary to any dwelling in the rural zone or within the boundary of any residentially zoned site:

NOISE LIMIT dBA Leq(2 hours)		LAFmax dBA
Monday to Sunday 7.00am-10.00pm	All other times	All days 10.00pm-7.00am
55	45	75

- ii. On each occasion of testing the date, time, duration and reason for the tests shall be retained in a log which must be supplied to Council if requested.
- iii. Aircraft engine testing shall be measured in accordance with New Zealand Standard NZS 6801:2008 “Acoustics – Measurement of Environmental Sound”.

17.5.11 Natural Environment

Activities in the Reserves and Open Spaces Zone shall comply with the following:

- a. Sound emissions from any activities (including amplified sound) shall not exceed the following limits:

	NOISE LIMIT dB LAeq(15min)		LAFmax dBA
	Daytime 7.00am-10.00pm	Night time 10.00pm-7.00am	Night time 10.00pm – 7.00am
Residential Zone	50	40	75
Other Zones	60	40	75

- b. The following noise limits shall apply to events at the specified locations:

i. Events at Springvale Park

	For up to 5 calendar days per year but for no more than 2 consecutive days		For up to ten calendar days per year	
	8.00am – 12.30am	12.30am – 8.00am	8.00am – 11.00pm	11.00pm – 8.00am
Residential Zone	55 dB LAeq(15min)	40 dB LAeq(15min)	55 dB LAeq(15min)	40 dB LAeq(15min)
	65 dB LAeq(15min) at 63Hz	50 dB LAeq(15min) at 63Hz	65 dB LAeq(15min) at 63Hz	50 dB LAeq(15min) at 63Hz
	55 dB LAeq(15min) at 125Hz	40 dB LAeq(15min) at 125Hz	55 dB LAeq(15min) at 125Hz	40 dB LAeq(15min) at 125Hz
Other Zones	60 dB LAeq(15min)	40 dB LAeq(15min)	60 dB LAeq(15min)	40 dB LAeq(15min)
	70 dB LAeq(15min) at 63Hz	50 dB LAeq(15min) at 63Hz	70 dB LAeq(15min) at 63Hz	50 dB LAeq(15min) at 63Hz
	60 dB LAeq(15min) at 125Hz	40 dB LAeq(15min) at 125Hz	60 dB LAeq(15min) at 125Hz	40 dB LAeq(15min) at 125Hz

ii. Events at Cooks Gardens:

	For up to 6 calendar days per year	
	8.00am – 11.00pm	11.00pm – 8.00am
Residential Zone	55 dB LAeq(15min)	40 dB LAeq(15min)
	65 dB LAeq(15min) at 63Hz	50 dB LAeq(15min) at 63Hz
	55 dB LAeq(15min) at 125Hz	40 dB LAeq(15min) at 125Hz
Other Zones	60 dB LAeq(15min)	40 dB LAeq(15min)
	70 dB LAeq(15min) at 63Hz	50 dB LAeq(15min) at 63Hz
	60 dB LAeq(15min) at 125Hz	40 dB LAeq(15min) at 125Hz

17.6 NOISE INSULATION TABLE

The schedule describes the minimum requirements necessary to achieve an external sound insulation level of $D_{2m,nT,w} + C_r > 30$ dB

Building Element	Minimum Construction Requirement	
External Walls of Habitable Rooms	Stud Walls: <ul style="list-style-type: none"> • Exterior cladding: 	20mm timber or 9mm compressed fibre cement sheet over timber frame (100mm x 50mm)
	<ul style="list-style-type: none"> • Cavity infill: 	Fibrous acoustic blanket (batts or similar of a minimum mass of 9kg/m ³) required in cavity for all exterior walls. Minimum 90mm wall cavity
	<ul style="list-style-type: none"> • Interior lining: 	One layer of 12mm gypsum plasterboard. Where exterior walls have continuous cladding with a mass of greater than 25kg/m ² (e.g. brick veneer or minimum 25mm stucco plaster), internal wall linings need to be no thicker than 10mm gypsum plasterboard.
	<ul style="list-style-type: none"> • Combined superficial density: 	Minimum not less than 25kg/m ² being the combined mass of external and internal linings excluding structural elements (e.g. window frames or wall studs) with no less than 10kg/m ² on each side of the structural elements.
	Mass Walls:	190mm concrete block, strapped and lined internally with 10mm gypsum plasterboard, or 150mm concrete wall.
Glazed Areas of Habitable Rooms	Glazed areas up to 10% of floor area	6mm glazing single float
	Glazed areas between 10% and 35% of floor area	6mm laminated glazing
	Glazed areas greater than 35% of floor area	Require a specialist acoustic report to show conformance with the insulation rule.
	Frames to be aluminium window frames with compression seals.	
Skillion Roof	Cladding:	0.5mm profiled steel or 6mm corrugated fibre cement, or membrane over 15mm thick ply, or concrete or clay tiles.
	Sarking	17mm plywood (no gaps).
	Frame:	Minimum 100mm gap with fibrous acoustic blanket (batts or similar of a minimum mass of 9kg/m ³).
	Ceiling:	Two layers of 10mm gypsum plasterboard (no through ceiling lighting penetrations unless correctly acoustically rated). Fibrous acoustic blanket (batts or similar of a minimum mass of 9kg/m ³).
	Combined superficial density:	Combined mass with cladding and lining of not less than 25kg/m ² with no less than 10kg/m ² on each side of structural elements.
Pitched roof (all roofs other than skillion roofs)	Cladding:	0.5mm profiled steel or tiles, or membrane over 15mm thick ply.
	Frame:	Timber truss with 100mm fibrous acoustic blanket. (batts or similar of a minimum mass of 9kg/m ³) required for all ceilings.
	Ceiling:	12mm gypsum plaster board.
	Combined superficial density:	Combined mass with cladding and lining of not less than 25kg/m ² .

Floor areas open to outside	Cladding:	Under-floor areas of non-concrete slab type floors exposed to external sound will require a cladding layer lining the underside of floor joists of not less than 12mm ply.
	Combined superficial density:	Floor to attain a combined mass not less than 25kg/m ² for the floor layer and any external cladding (excluding floor joists or bearers).
External door to habitable rooms	Solid core door (min 25kg/m ²) with compression seals (where the door is exposed to exterior noise)	