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Welcome. This is a Special Edition journal covering 'Environmental Noise Law in Aotearoa' (New Zealand).

Although this journal is under a single cover it is the combined content for the first and second editions of New Zealand Acoustics for 2021. This is the first time two journal editions have been presented in this single format and is primarily the result of ongoing issues with respect to the supply of technical papers from the cancellation of planned acoustic conferences worldwide.

On the 15th of February, Auckland went into alert Level 3 which regrettably meant that the New Zealand Acoustic Society's planned conference, "The Sound of a Changing World" was rescheduled to 28th and 29th June 2021 – please check out the advert in the journal for full details.

The Editorial team are very much looking forward to bringing our members and readers a host of new context, topics, and fresh papers in Volume 3 2021 later this year. We wish to thank all our advertisers and members for their ongoing support and patience.
Keep safe.

Lindsay Hannah & Wyatt Page

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FEATURE

Environmental Noise Law in Aotearoa

Lindsay Hannah[1], Wyatt Page[2], Matthew Borich[3] , Whitney Cocking[4]

[1]Acoustic Engineer. Acoustic Team, City Consenting and Compliance, Wellington City Council
[2]School of Health Sciences, Massey University, Wellington, New Zealand
[3]Compliance Manager City Consenting and Compliance, Wellington City Council
[4]Environmental Noise and Compliance Officer City Consenting and Compliance, Wellington City Council

This special topic issue examines three main themes in relation to environmental noise law in New Zealand. The first section is a review of current environmental noise law in relation to the Resource Management Act 1991 (RMA). The second section is a review of environmental noise law outside the space of the RMA, and the final section provides commentary on potential future environmental noise law in New Zealand, based on the proposed repeal and replacement of the RMA.

What is sound and noise?

Acoustics is the science of sound. Physically, sound is produced by mechanical vibrations propagated as a wave motion in air or some other media. Sound is produced by any vibrating body and is typically transmitted as a longitudinal wave in air. Sound evokes physiological responses in the ear and auditory pathways that are perceived and interpreted by the listener. Physiological acoustics deals with the peripheral auditory system such as cochlear mechanism, stimulus and encoding in the auditory nerve. Psychological acoustics deals with subjective attributes of sound and how they relate to physically objective measurable quantities such as the sound level, frequency, and spectrum. Noise is commonly referred to as 'unwanted sound', but this does not take account of the effect it has on the person exposed. A better definition is that noise is sound which results in adverse health effects, including noise annoyance. Environmental noise can be defined as outdoor sound, in particular that created by human activity. This includes noise emitted from construction work, transport, road traffic, rail traffic, air traffic or from typical day-to-day activity in the community ranging from industry and commercial through to residential and recreational sources. The effects of environmental noise are usually expressed in various terms, including annoyance, interference, performance, health, and amenity value. Noise adversely affects current and future generations and has health, socio-cultural, esthetical, and economic effects on populations, with more pronounced effects for vulnerable groups, such as the elderly, young children, the blind, hearing impaired and special needs persons. Noise has and will continue to receive increasing recognition as one of our critical environmental pollution problems as our population and main centres throughout New Zealand continue to grow. This growth in noise will be from commercial and industrial sites right through to transportation and within residential and recreational areas.

Although both noise and music are mixtures of sound at different frequencies and amplitudes, music is considered to be ordered sound, while noise is disordered. However, music perceived by someone as pleasant, may be perceived and described as noise by someone else who does not like that type of music genre. Sound can be characterised by three basic components:

Level

The objective level of sound is measured by the difference between atmospheric pressure (without the sound) and the amplitude of the changes in pressure due to the sound. The amplitude of sound is like the relative height of the ripples caused by the stone thrown into the water. Although physicists typically measure pressure using the linear Pascal scale, sound pressure level (SPL) is measured on a logarithmic scale in decibel (dB). It involves the square of the ratio of the pressure change to a reference pressure (20 μPa). A 3 dB increase corresponds to a doubling of the mean-square pressure, while a 10 dB increase corresponds to a tenfold (10 times) increase. Loudness is the subjective perception of sound pressure.

Frequency

The frequency of sound can vary greatly from a low-frequency rumble to a high frequency whistle. The rate at which a source vibrates determines the frequency. The rate of vibration is measured in units called hertz (Hz) – the number of cycles, or waves, per second. The ability to hear a sound depends on the amplitude and the frequency composition. Humans hear (audible) sounds between 20 Hz and 20,000 Hz and are most sensitive in between 1,000 Hz and 6,000 Hz. Pitch and frequency are often interchanged; however, they are not exactly the same concept. Pitch is a psychological subjective construct, related both to the actual frequency of a particular tone and to its relative position on the musical scale. Pitch is a relative (subjective) matter of common agreement between musicians. A discrete musical sound is normally called a tone (the term 'note' is also sometimes used). The terms 'note' and 'tone' are often used as the same abstract entity however tone often refers to what is heard and note to something notated on a musical score. A discreet musical sound is a tone. A simple way to view frequency and pitch is the frequency of the oscillation is 440 cycles per second" (or 440 Hz) while the musical description would refer to pitch stating "that's an A above middle C." With respect to music, there are also a host of other terms such as tempo, contour, rhythm, reverberation, timbre and loudness.

Duration

The duration of sounds are the patterns of significant changes in loudness and pitch over time and can vary greatly. Sounds can be classified as continuous like a waterfall, impulsive like fireworks or intermittent like aircraft overflight. Intermittent sounds are produced for relatively short periods, with the instantaneous sound level during the event roughly appearing as a bell-shaped curve. An aircraft noise event is characterised by the period during which it rises above the background sound level, reaches its maximum and then recedes below the background level.

What is vibration?

Vibration and acoustics are linked, every time something vibrates, sound can be radiated from the source. All sounds begin with vibration, when we hear something, we are usually sensing the vibrations through air conduction. These vibrations enter the outer ear and cause our eardrums to vibrate, which in turn is mechanically coupled to inner ear. In the inner ear, the vibrational energy is coupled through fluids. Sound can also be perceived by bone-conduction, where the vibration is mechanically coupled through the bones of the skull. This is type of structure-born conduction, where a physical median other than air couples the vibrational energy. Examples of this include vibration through the ground, related to piling works or deep excavations on construction sites. This vibrational energy passes through the ground and then can couple into the structure of near-by buildings. If people reside in these buildings, they may perceive the vibration physically through contact with surfaces and/or as sound radiated from surfaces. Sound includes vibration according to the definition under the Resource Management Act 1991 (RMA).

Councils Resource Management Act responsibilities, duties and powers

There are two types of Councils in New Zealand, Regional Councils and Territorial Authorities (TAs). Territorial Authorities include District Councils, City Councils, and Unitary Authorities. A unitary authority is a TA that has the responsibilities, duties, and powers of a regional council. Councils have a wide range of regulatory functions, including noise. For smaller councils, there may often only be one team or one staff member that deals with noise and often it is not their expertise. In other cases, such as larger District Councils, the Council may have an acoustics team lead by an acoustic engineer (such as Wellington City Council for example). Councils at times must regulate their own and other councils' activities under the Resource Management Act, as councils are landowners and resource users in their own right. Many projects carried out by councils require consent or must meet permitted activity conditions. It is important for councils to hold themselves to the same standard than the public as responsible regulators. A number of councils have prosecuted themselves, their staff members, or other councils for breaches of the RMA. Council must not only hold themselves to a high standard but be seen to be doing so.

Noise and the Resource Management Act 1991

The Resource Management Act 1991 (RMA) is New Zealand's principal environmental legislation and provides a framework for managing the effects of activities on the environment. The RMA replaced many of the then existing regulations at the time, such as the Noise Control Act 1982 and the Town and Country Planning

Act 1977. To try and achieve its intended goals, the RMA provides a planning process and mechanisms for controlling potential or actual effects on the environment, including noise and vibration. The RMA aims to *'promote the sustainable management of natural and physical resources'* through sustainable management, which involves balancing the use of resources with the need to protect the environment and to provide for the needs of future generations. The RMA sets out specific duties for councils which include duties and responsibility to implement the RMA. To achieve this, the RMA sets out mechanisms to control among other things, noise, and vibration effects. A Territorial Authority such as City, District, Unitary and Regional Councils are mandated under the s.31 (d)) to have the primary function for managing the effects of land uses, including noise and vibration. The RMA stipulates that every person is responsible for the noise that they make, and that noise must not be unreasonable or excessive. Everyone and the activities they undertake have the right to produce noise at a reasonable level and it is the RMA that sets out the obligations for all to keep noise to a reasonable level. The noise control provisions under the RMA are therefore designed to protect the public from excessive or unreasonable noise, as well as provide a balance to protect the rights of people and industry to make a reasonable amount of noise. The RMA sets out obligations for all parties, albeit noise producers or noise receivers, to ensure noise remains reasonable at all times. Under the RMA, managing the effects of noise is a function of TAs. The RMA focuses on *managing* the effects of activities rather than *regulating* activities themselves. This has foreshadowed a move away from a prescriptive planning approach under the Town and Country Planning Act 1977. That RMA sought to guide the location of activities and to separate incompatible activities. Section 35 of the RMA imposes a general duty on councils to gather information, monitor the implementation of the RMA in their district, and review the results of their monitoring. This includes monitoring noise.

s.326: Excessive noise

Section 326 of the RMA defines excessive noise as any noise that can *"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)".*

The definition of excessive noise **does not** include any noise emitted by any of the following:

a. Aircraft being operated during, or immediately before or after, flight;

b. Vehicle being driven on a road (within the meaning of section 2(1) of the Land Transport Act; and

c. Train, other than when being tested (when stationary), maintained, loaded, or unloaded.

s.326 (2) states without limiting subsection (1) of the RMA, excessive noise includes noise that exceeds a standard for noise prescribed by a national environmental standard; and may include noise emitted by the following:

- a musical instrument; or
- an electrical appliance; or
- a machine, however powered; or
- a person or group of persons; or
- an explosion or vibration.

The excessive noise provisions do not include any noise emitted by aircraft, vehicle or trains, Councils will **not** assess complaints for these noise sources unless they are specifically included within the meaning of 'excessive noise'. In these cases, there are other agencies to contract regarding noise from moving vehicles, cars, training, aircraft or seacraft such as:

- New Zealand Police (vehicles on a public road);
- Civil Aviation Authority (aircraft in flight (including both fixed and rotating wing);
- KiwiRail (moving trains and railway crossing); and
- Harbour Master (for boats on water (lakes, harbours).

What is the assessment criteria for excessive noise?

The assessment of 'excessive noise' is subjective, meaning a Noise Control Officer (NCO) or (Compliance) Enforcement Officer is not required to provide or undertake any *objective* measured sound levels with a sound level meter. There are a number of assessment criteria to review when assessing if noise is excessive or not and this will change for each situation however one key criterion is the wording in the definition of excessive noise under the RMA which relates to 'unreasonably interferes'. Factors that may be considered when making this determination include (but not limited to):

- **Location of the noise source and where it operates**
  The first thing to check is does the noise come under the definition of 'excessive noise' and what if any exemptions apply, for example being a vehicle being driven on a road through to emergency works. In other cases, Councils may also have exemptions or dispensations in place for construction noise. In these cases if they are exempt the officer will not assess.

- **The level of noise**
  The level of received sound must be reviewed at the noise sensitive (receiver) site, not the sound source, this is because the level of noise may be loud at source but when assessed at the noise sensitive site may not actually unreasonably interfere. If the noise cannot be assessed at the complainants site then an assessment should be made at a position between the noise source and the receiver, where an accurate subjective on the level of effects on the complainant can be made.

- **The level of source noise relative to background (ambient) noise level**
  There may be potential for unreasonably interfere if the background sound levels is low relative to the sound source under investigation when assessed at the receiver site. If there were for example a high background sound level this could potentially mask the source noise and may not be judged to unreasonably interfere.

- **The type / pattern of noise**
  There may be is potential for unreasonably interfere if the sound source is impulsive say compared to a broadband sound source of the same sound level. There are various types of noise such as broadband, impulsive (sudden bursts), intermittent (increases and decreases rapidly), continuous, low frequency noise (bass sound) and mixtures of all the above.

- **The character of the noise**
  There may be potential for unreasonably interfere if the sound source is judged to contain 'special audible characteristics' (SAC). Special audible character is important for considering sound in terms of characteristics that may make the sound more annoying than it would otherwise be without that characteristic. In terms of effects, sound with a special audible characteristic is defined as "likely to arouse adverse community response at lower levels as noise without such characteristics e.g. sounds containing a tone, screech, bass noise or impulsive characteristics".

- **The nature of the activity and noise source itself (the function of the noise source)**
  The kind of activity producing the noise and its purpose should be considered. Council's have enforcement desecration and while technically noise may be excessive council may choose to use another form of control such as seeking a long term solution through abatement notices or enforcing conditions of consent (for example a concert).

- **Location of the noise source including noise sensitive site i.e. residential dwellings, schools, hospitals**
  The same noise source may be acceptable when received within an industrial zone but the same noise may have the potential to unreasonably interfere when received at a noise sensitive site such as a hospital where sick people are located and higher amenity may be needed.

- **Time of day (day, night, evening)**
  The same noise source may not unreasonably interfere during the middle of the day but may be unreasonably interfere during the middle of the night.

- **Time of week (weekday, weekend, public holiday)**
  The same noise source may not unreasonably interfere during the week but may unreasonably interfere during a public holiday or weekend.

- **Length of time and duration of noise**
  The noise source may be loud but may turn off after a few minutes such as an alarm thus not be may not unreasonably interfere if only operating for a limited period of time. Music played at a moderate level for a short duration during the day once a month may be deemed to be not excessive but if played at the same level daily for long periods may unduly interfere with the peace and comfort of the complainant and be deemed to be excessive.

- **Noise history (first complaint or ongoing**

- **Number of complainants**

s.16 Duty to avoid unreasonable noise

Section 16(1) of the RMA, 'duty to avoid unreasonable noise', states: *"every occupier of land (including any premises and any coastal marine area), and every person carrying out an activity in, on, or under a water body or the coastal marine area, shall adopt the best practicable option to ensure that the emission of noise from that land or water does not exceed a reasonable level".*

Most noise complaints are investigated under the 'excessive noise' provisions of the RMA. Common complaints in the community include a loud party or use of stereo noise with low frequency bass sounds. However, there are certain noisy activities in the community that cannot be ordered to be reduced or abated immediately. These are typically non-residential noise sources such as industrial or commercial noise from mechanical plant which services a building. In this situation, a technical noise assessment and noise readings are taken and assessed in accordance with New Zealand Acoustical standards NZS 6801 and NZS 6802 to determine if the noise level is unreasonable and/or in breach of the RMA, any District Plan rules or resource consent conditions. If the noise is found to be unreasonable, Councils have a host of tools to abate and mitigate the noise to gain compliance. There are generally three options of enforcement under the RMA s.16 duty, including:

1. Issue of an abatement notice;
2. Application for an interim enforcement order; and
3. Application for an enforcement order.

What is "unreasonable" noise?

This question often asked by non-experts and lay persons alike. The RMA does not actually define what a reasonable level of noise is. When determining what a reasonable level of environmental noise is the following noise levels are reproduced from New Zealand Acoustic Standard, 'NZS6802: 2008 Acoustics Environmental Noise', Section 8.6 'guidelines for the protection of health and amenity'. Section 8.6 of the standard states at a guideline the following limits are a reasonable level of environmental noise for the protection of health and amenity values for residential purposes such as at the boundary of a residential site or notional boundary of a rural site.

All Days 7.00am to 10.00pm 55 dB $L_{Aeq\ (15\ mins)}$

All Days 10.00pm to 7.00am 45 dB $L_{Aeq\ (15\ mins)}$

All Days 10.00pm to 7.00am 75 dB L_{AFmax}

What is the "best practical option" (BPO) criteria?

Part 1 'Interpretations and Applications' under the RMA specifically defines the 'best practicable option' (BPO) and the criteria to assess against this. The RMA states in relation to a discharge of a contaminant or an emission of noise, the BPO means the best method for preventing or minimising the adverse effects on the environment having regard, among other things, to the following three criteria:

a. the **nature** of the discharge or emission and the sensitivity of the receiving environment to adverse effects; and

b. the **financial** implications, and the **effects on the environment,** of that option when compared with other options; and

c. the current state of **technical knowledge** and the likelihood that the option can be **successfully applied.**

s.17 Duty to avoid, remedy, or mitigate effects (including noise)

Section 17(1) of the RMA states that *"every person has a duty to avoid, remedy, or mitigate any adverse effect on the environment arising from an activity carried on by or on behalf of the person, whether or not the activity is carried on in accordance with—(a) any of sections 10, 10A, 10B, and 20A; or (b) a national environmental standard, a rule, a resource consent, or a designation".*

A key part of s.17(1) is that there is the duty to avoid, remedy or mitigate any adverse effect on the environment from an activity carried on by or on behalf of the person, ***whether or not*** an activity is in accordance with a rule. That is for example, even when an activity complies with a noise rule, there is a requirement to ensure the duty to adopt the BPO, is followed. The section also states the duty referred to in s.17(1) is not of itself enforceable against any person and no person is liable to any other person for a breach of that duty.

In accordance with s.17(3) and notwithstanding subsection (2) of the RMA, *"an enforcement order or abatement notice may be made or served under Part 12…".* Section 17 requires a person to cease, or prohibit a person from commencing, anything that, in the opinion of the Environment Court or an Enforcement Officer, is or is likely to be noxious, dangerous, offensive, or objectionable to such an extent that it has or is likely to have an adverse effect on the environment; or require a person to do something that, in the opinion of the Environment Court or an enforcement officer, is necessary in order to avoid, remedy, or mitigate any actual or likely adverse effect (including noise and vibration) on the environment caused by, or on behalf of, that person.

Compliance enforcement under the Resource Management Act

s.314-321: enforcement

Enforcement action is taken by councils to ensure that people and their related activities are among other things comply with the RMA, a resource consent, resource consent condition or noise emission rules set out in a district/regional/territorial plan. Enforcement normally refers to action taken by councils to respond to non-compliance with the RMA or rule. Enforcement action is normally taken as a last resort. These steps may involve persuasion, prosecution, or a combination of both. Regarding noise there are a number of key tools for enforcement these are an excessive noise direction, abatement notice and infringement notice. Enforcement orders are an additional tool which are a way of getting someone to comply with the RMA.

Enforcement tools can be categorised into two main functions defined as follows:

1. **Directive** actions are about looking forward and giving direction to right the wrong;

   Examples of directive include letter of direction, abatement notice, enforcement orders;

   Formal warnings and letters of direction are non-statutory

2. **Punitive** actions are about looking back and holding people accountable for what they have done.

   Examples of punitive include formal written warning, infringement notices or prosecution.

Each Council will have its own enforcement policy, in general this can be broken down into separate components for example:

1. How Council gather information once a breach is identified;

2. How Council decide what they are going to do about that breach;

3. What subsequent action, if any, Council or may take.

Councils guidelines for enforcement policies would generally cover a host of areas such as transparency, consistent, fairness, targeted and responsive approaches among many other things. An evidence and targeted approach are discussed as follows:

An evidence-based approach

In all cases an evidence-based approach in decision making is required to inform decisions. These decisions can be informed by a range of sources, including sound science, the regulated parties, information received from other regulators, members of the community, industry, and interest groups. Regardless of the method, all approaches should be based on a solid foundation of evidence. In all cases, noise must be witnessed by a Noise Control Officer (NCO) or (Compliance) Enforcement Officer (EO) in order to take enforcement action. Standards are used to adopt a formal best-practice assessment method.

Targeted approach

Enforcement should also focus on the most important issues and problems to achieve the best environmental outcomes i.e., hierarchy. Council would normally target and allocated resources towards intervention at poor performers and illegal activities that pose the greatest risk to the environment. The task at hand is not easy as Councils must adopt the right tool for the right problem at the right time.

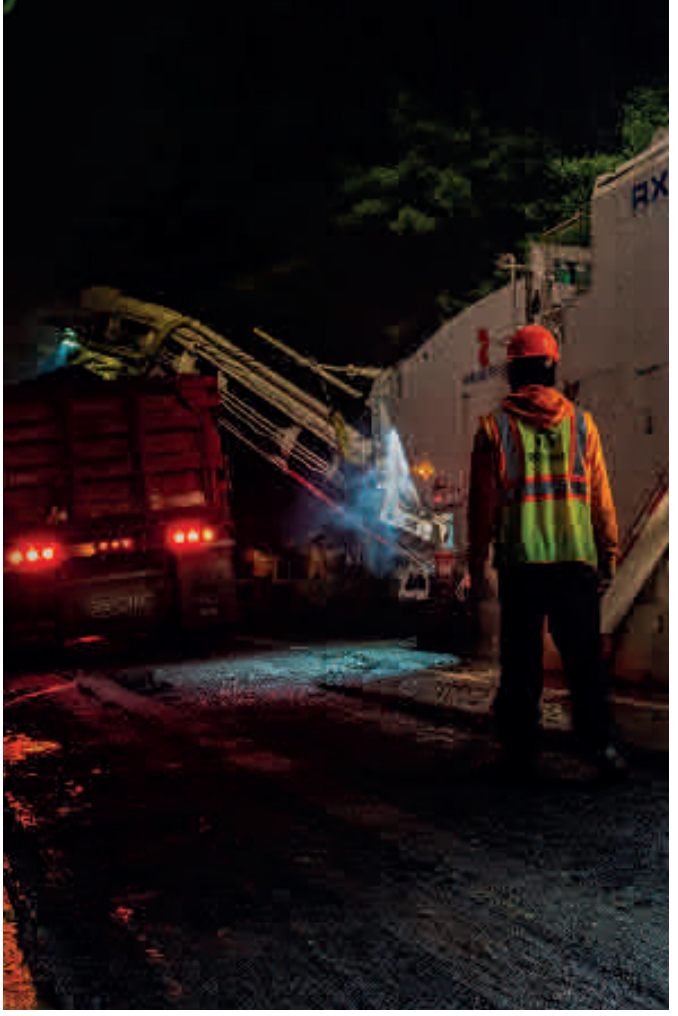
Factors Councils may consider when considering enforcement action include (but are not limited to the following):

- How does the unlawful activity align with the purposes and principles of the RMA?
- If being considered for prosecution, how does the intended prosecution align with Solicitor-General's Prosecution Guidelines?
- What were, or are, the actual or potential adverse effects on the environment?
- What is the value or sensitivity of the receiving environment or area affected?
- Was the breach because of deliberate, negligent or careless action?
- What degree of due care was taken and how foreseeable was the incident?
- What efforts have been made to remedy or mitigate the adverse effects?
- What has been the effectiveness of those efforts?
- Was there any profit or benefit gained by alleged offender(s)?
- Is this a repeat non-compliance or has there been previous enforcement action taken against the alleged offender(s)?
- Was there a failure to act on prior instructions, advice or notice?
- Is there a degree of specific deterrence required in relation to the alleged offender(s)?
- Is there a need for a wider general deterrence required in respect of this activity or industry?

Not every factor will be relevant every time and in every situation. On occasion one single factor may be sufficiently aggravating, or mitigating, that it may influence the ultimate decision. It is inappropriate to take a single fixed matrix or numerical approach to weighing and balancing these factors. Each case is unique, and the individual circumstances need to be considered on each occasion to achieve a fair and reasonable outcome. The discretion to take enforcement action, or not, sits solely with those delegated to make decisions in the regulatory agency. The power to take enforcement action rests with council staff known as 'Enforcement Officers' (EOs). A warranted Enforcement Officers have the right to:

1. Enter premises to detect offences (with Police Constable present), and;
2. issue abatement notices and excessive noise directions.
3. Council can seize goods but only with the assistance of a Police Constable.

Importantly, EOs must be warranted, meaning they carry warrant cards issued by the council, which list their powers and responsibilities. A constable has the meaning described under s.4 of the Policing Act 2008.



s.327-328: Excessive Noise Directions (END) Notice

Section 327 of the RMA sets out the *'issue and effect of excessive noise directions'*. Whereas s.328 sets out *'compliance with an excessive noise direction'*. The Excessive Noise Direction (END) need not be handed to the occupier or the owner of the noise source. It can be handed to any person who appears to be responsible for causing the noise. Council enforcement officers can issue an END either verbally or in writing. If you are issued with a direction, it must be complied with immediately. An excessive noise direction is a directive.

Excessive noise is managed and controlled by a Noise Control Officer or a compliance Enforcement Officer. Enforcement Officers will use their professional judgement and follow training and procedures detailed by Councils when determining if a noise source is excessive. Loud party and stereo noise and noise from residential premises are the most common source of noise complaints followed by property alarms and noise from licensed premises. Assessment of excessive noise is subjective, and no noise measurements need to be taken. To evaluate the noise, the EO must listen to it in a location where they can understand the effects of the noise on the person. If the noise is deemed excessive, the EO will request that the noise be reduced to a reasonable level that does not interfere with peace, comfort, and convenience of any person. If the noise is not reduced immediately or is deemed excessive, a second time the EO, with Police assistance, may enter the premises and seize and impound the equipment or take away any working parts or lock or seal it to make it inoperable. The powers under this section are in addition to the powers under s.322 to s.325 to issue abatement notices relating to unreasonable noise and to seek an enforcement order under s.316.

What happens if the sound source cannot be identified or there are no person occupying the property?

Where an END under s.327 is unable to be given because there is no person occupying the place from which the sound is being emitted or the occupier of the place cannot reasonably be identified, and there is no other person who appears to be responsible for causing the excessive noise, an EO (accompanied by a Police Constable) or a constable by themselves may enter the place without notice and take any of the following actions with regard to the excessive noise source:

a. Seize and remove from the place; or

b. Render inoperable by the removal of any part from; or

c. Lock or seal so as to make unusable, this includes any

i. Instrument;

ii. Appliance;

iii. Vehicle;

iv. Aircraft;

v. Train;

vi. Machine or plant that is producing or contributing to the excessive noise.

Where any EO or constable enters any place under subsection (4), they must leave in that place, in a prominent position a copy of the relevant written excessive noise direction issued under s.327; and a written notice stating the following:

- The date and time of the entry;
- The name of the person in charge of the entry;
- The actions taken to ensure compliance with the excessive noise direction; and
- The address of the office at which inquiries may be made in relation to the entry.

Any EO or constable exercising any power under the RMA may use such assistance as is reasonably necessary or when exercising any power under the RMA, use such force as is reasonable in the circumstances.

What happens when a complaint is received?

Councils will all have different procedures in place to deal with complaints, however the following provides a generic overview of a noise complaint procedure:

1. **First Complaint (First Call to Council)**

   Generally, if it is the first complaint there is a stand down. The complainant is asked to call back within the stand down period, say 15 to 30 minutes, and if the noise is still excessive the Council will send out a Noise Control Officer to investigate.

2. **Following a second call the Enforcement Officer will investigate the complaint.**

3. **Following the investigation and conclusion noise is excessive, the Enforcement Officer will issue the person who appears to be responsible for causing the excessive noise with an Excessive Noise Direction (END).**

   - The Excessive Noise Direction is a require to immediately reduce the noise level to a reasonable level. This reduction of noise for an Excessive Noise Direction cab be both verbal and written.
   - If the Excessive Noise Direction is ignored or breached the Enforcement Officer, with the assistance of the Police, may enter the premises and seize or render inoperable the source of the noise.
   - If the Excessive Noise Direction is not complied with immediately, the protocols for the seizure process will be started. This involves the first step with the Police being called.

4. **Second Complaint (Following First Site Visit)**

   If a second compliant is received and thus a second visit is required within 72 hours, on the second visit the Enforcement Officer assesses that the excessive noise is continuing, the Enforcement Officer will, with the assistance of a Police constable, enter the property and seize or render inoperable the source of the noise. A $500 infringement notice may also be issued.

5. **Habitual Offender (Multiple Complaints)**

   If a third or more Excessive Noise Direction is issued to the same property within a set period say for example three-month period, then the offender may be advised that any further breach of excessive noise may result in an Abatement Notice being served. Breach of the Abatement Notice may result in a $750 infringement fine. If the offender is habitual Council does not have to return the seized equipment. In this case Council would write to the person to advise and set the details out.

s.323-328: Failure to comply with abatement notice or noise direction notice

Failure to Comply with Abatement Notice or Excessive Noise Direction

Where a person is issued an abatement notice under s.323 of the RMA, if a person against whom an abatement notice is made under section 322(1)(c) which relates to the emission of noise, fails to comply with the notice, an EO may, without further notice, enter the place where the noise source is situated (with a constable if the place is a dwelling house) take all such reasonable steps as he or she considers necessary to cause the noise to be reduced to a reasonable level; and when accompanied by a constable, seize and impound the noise source. Similarly, where a person is issued an excessive noise direction notice under s.328 of the RMA and fails to comply immediately with the notice, an EO (accompanied by a constable), or a constable may enter the place without further notice and (a) seize and remove from the place; or (b) render inoperable by the removal of any part from; or (c) lock or seal so as to make unusable any instrument, appliance, vehicle, aircraft, train, or machine that is producing the noise. A dwelling house has a specific meaning under the RMA and *means any building, whether permanent or temporary, that is occupied, in whole or in part, as a residence; and includes any structure or outdoor living area that is accessory to, and used wholly or principally for the purposes of, the residence; but does not include the land upon which the residence is sited.*

Seized property

Where any property is seized and impounded under s.323 or s.328 of the RMA, the owner of the property or the person from whom it was seized may apply to the relevant authority where the property is held, at any time, to have the property returned under s.336 'Application for return of property' for seized goods. If seized equipment is not recovered by the rightful owner, and all associated fees not paid, Council may auction the equipment to recover all costs incurred in the process or in some cases if the equipment has no value they will recycle what they can and dispose of the remaining equipment to landfill. Council reserves the right to refuse to return seized items if the return of the item is likely to lead to a resumption (renewal) of excessive or unreasonable noise. Councils charge fees to for the return of equipment to recover the costs these include but are not limited to the Noise Control Officer contracts, storage fees, administration fees and staff costs.

The excessive noise direction notice does not carry a penalty, but breach of an excessive noise direction order is a prosecutable offence under s.338(2)(a) of the RMA which under s.338 'Offences against this Act' states any every person commits an offence against this Act who contravenes, or permits a contravention of an excessive noise direction, enforcement order, abatement notice or any order (other than an enforcement order) made by the Environment Court.

Not Excessive Noise?

There is no borderline that noise is either excessive or not. If the noise is assessed as not being excessive, the EO would leave and close the job, but this would depend upon each Councils policy. Where it is ascertained that no breach of standards in the RMA or the District Plan have occurred, and there is no need for further investigation, the Council will, if required, inform the complainant However, further investigation of the complaint will not be undertaken unless there is a new complaint and new evidence, or information that is available.

Anonymous complaints and privacy

Some Councils do not accept anonymous complaints, other Councils may, but this will depend upon the circumstances. In many cases the person laying the complaint may have concerns about them being identified and thus won't want to leave their contact details. This can make it harder in many cases for the Council to assess the issue, for example not knowing where the complainant is located makes it impossible to go to that site or near it to assess the noise. In all cases, Council and council contractors would never share private or personal details with any third party as the protection of all parties involved is paramount.

Malicious complaints

There are examples where complaints are ongoing and unsubstantiated such as someone making complaints maliciously. There are other examples when a complainant generally thought they could hear something, and this was not the case due to personal hearing issues or mental health issues, for example. In all cases, Councils will take all complaints seriously and treat them in a professional manner ensuring all complainants and persons who is complained, are treated fairly and without bias.

s.322 - 325B (s.322 (a) Noise): Abatement notices (AB) for unreasonable noise

Section 322 to 325B of the RMA covers abatement notices. Section 322 covers 'scope of abatement notice'. Unlike excessive noise directions, Councils usually issue abatement notices in response to ongoing noise problems that cannot be reduced immediately. For example, noise from an industrial or commercial site such as a factory or even on-going issue on a residential premise. In simple terms, an abatement notice is a notice that require people to take or stop actions so that they comply with the RMA, rule, or a resource consent. Even if a plan permits a particular activity or someone has a valid resource consent, an abatement notice may still be issued if the activity is so harmful or objectionable that it is likely to have an adverse effect on the environment. If you are issued with an abatement notice, it must be complied within the time period set out in the notice. An abatement notice is directive.

The abatement notice may specifically require that person to do something that, in the opinion of the EO, is necessary to ensure compliance by or on behalf of that person with this RMA, any regulations, a rule in a plan or a proposed plan, or a resource consent, and also necessary to avoid, remedy, or mitigate any actual or likely adverse effect on the environment. The abatement notice may be served by an EO requiring that person to cease, or prohibiting that person from commencing, anything done or to be done by or on behalf of that person that, in the opinion of the enforcement officer,

a. Contravenes or is likely to contravene this Act, any regulations, a rule in a plan, or a resource consent; or

b. Is likely to be noxious, dangerous, offensive, or objectionable to such an extent that it has or is likely to have an adverse effect on the environment

The above requirement relates to adverse effect on the environment:

1. Caused by or on behalf of the person; or

2. Relating to any land of which the person is the owner or occupier;

3. A person carrying out any activity in, on, under, or over a water body or the water within the coastal marine area

An EO can also issue an abatement notice before a problem happens, if they think it is likely to arise.

Importantly, s.322(4) states that an abatement notice shall not be served unless the EO has reasonable grounds for believing that it contravenes the Act or rule, etc. The takeaway is that the EO must ensure suitable evidence has been collected. Subject to the rights of appeal in s.325, a person on whom an abatement notice is served must comply with the notice within the period specified in the notice; and unless the notice directs otherwise, pay all the costs and expenses of complying with the notice. An abatement notice can also be issued for noise, meaning the person responsible must adopt the BPO method to reduce noise to a reasonable level. Abatement notices are a very efficient mechanism for obtaining compliance with the RMA for noise management. Anecdotally, the majority of abatement notices issued are complied with, so it is usually the best option and the enforcement officer's primary tool. Some local authorities choose to cancel an abatement notice which has been appealed, and apply for an enforcement order, rather than spend money and time defending a notice that has relatively limited scope. If issued an abatement notice, you must address the problem in the most appropriate way, within the time period set out in the notice.

Abatement Notice - form and content

Section 324 *'form and content of abatement notice'* requires among other things that every abatement notice shall include the name of the person to whom it is addressed; the reasons for the notice; and the action required to be taken or ceased or not undertaken; and the period within which the action **must** be taken or cease. The following information must be included in the abatement notice:

a. **Location:** *The abatement notice must identify the location the abatement notice relates to such as the physical address but should if necessary, include the legal description i.e., the lot number and/or deposited plan should be stated in the abatement notice.*

b. **Reasons:** *The abatement notice requirements a clear explanation as to why the notice was issued for example the breach of a resource consent condition (specify condition) or breach of a specific rule.*

c. **Actions Required:** *The abatement notice should provide precise details of the actions required to be taken, ceased, or not commenced (undertaken), for example it could set out BPO measures and when the notice applies from.*

d. **Period:** *The abatement notice requires compliance period within which action must be taken.*

e. **Consequences:** *The abatement notice requires details setting out the consequences for not complying with the notice.*

f. **Appeal Rights:** *The abatement notice requires rights of appeal s.325.*

g. **Rights of Enforcement Officer:** *The abatement notice also requires in the case of a notice under section 322(1)(c), the rights of an enforcement officer under section 323(2) on failure of the recipient to comply with the notice within the time specified in the notice;*

h. **Local Authority Details:** *The abatement notice requirements the local authority details such as name and address*

i. **Warranted Officer Details:** *The abatement notice requirements the name of the enforcement officer.*

Compliance with the Abatement Notice

Section 323(1) *'compliance with abatement notice'* requires (subject to any appeal under s.325) compliance with the notice within the period specified in the notice; and unless the notice directs otherwise, pay all the costs and expenses of complying with the notice. If that person against whom an abatement notice is made under s.322(1)(c) relates to the emission of noise, fails to comply with the notice, an EO may, without further notice, enter the place where the noise source is situated (with a constable if the place is a dwelling house), and (a) take all such reasonable steps as they considers necessary to cause the noise to be reduced to a reasonable level; and (b) when accompanied by a constable, seize and impound the noise source.

Cancelling the Abatement Notice

Section 325(A) *'cancellation of abatement notice'* states where a relevant authority considers that an abatement notice is no longer required, the relevant authority may cancel the abatement notice at any time. To do this, the person the notice was issued to may apply in writing to the relevant authority (normally Council) to change or cancel the abatement notice. On receipt the relevant authority shall, as soon as practicable, consider the application having regard to the purpose for which the abatement notice was given, the effect of a change or cancellation on that purpose, and any other matter the relevant authority thinks fit; and the relevant authority may confirm, change, or cancel the abatement notice. The Council shall give written notice of its decision to the person who applied.

Amendment to the Abatement Notice

Any person directly affected by the abatement notice may apply in writing to the council to amend the notice. This application to change or cancel the notice must be in writing and once considered, the council must give written notice of its decision. If the council, after considering an application to change or cancel the abatement notice, confirms the abatement notice or changes it in a way other than that sought, the person who applied for the cancellation or change, may appeal to the Environment Court under s.325(2) of the RMA.

Appealing an Abatement Notice

Section 325 **'Appeals'** states if a person is served with an Abatement Notice, the person may appeal to the Environment Court in against the whole or any part of the notice. When the Abatement Notice is appealed the notice will be:

1. Put on hold until the appeal is dealt with, providing the activity you are engaged in complies with the RMA; and
2. Otherwise, you can apply to the Environment Court for a stay (postponement) of the abatement notice.

If you fail to act on an abatement notice and do not lodge an appeal, you are committing an offence under the RMA and can be prosecuted. A hearing of an appeal to the Environment Court against an abatement notice (depending on the issues) can be both expensive and time consuming. Councils may choose to cancel an abatement notice that has been appealed and apply for an enforcement order. Section 325 of the RMA also provides for appeals and applications for a stay.

s.314 - 321: Enforcement orders issued by the Environment Court

An 'enforcement order' is similar in some respects to an abatement notice in that it is used to require a person to cease doing something that contravenes a rule in a plan, requirement in the RMA, or that is dangerous, noxious or offensive. An enforcement order is a directive and is made under s.319(1)(a) by the Environment Court. It may do any one or more of the following:

> *"Require a person to cease, or prohibit a person from commencing, anything done or to be done by or on behalf of that person, that, in the opinion of the court, — contravenes or is likely to contravene this Act, any regulations, a rule in a plan, a rule in a proposed plan, a requirement for a designation or for a heritage order, or a resource consent, section 10 (certain existing uses protected); or section 20A (certain existing lawful activities allowed); or is or is likely to be noxious, dangerous, offensive, or objectionable to such an extent that it has or is likely to have an adverse effect on the environment:"*

An interim enforcement order can be made where there is imminent risk of irreparable environmental damage.

An Enforcement Order issued by the Environment Court under s.314(1)(b) can require a person to do something that, in the opinion of the court, is necessary in order to:

i. Ensure compliance by or on behalf of that person with this Act, any regulations, a rule in a plan, a rule in a proposed plan, a requirement for a designation or for a heritage order, or a resource consent; or

i. Avoid, remedy, or mitigate any actual or likely adverse effect on the environment caused by or on behalf of that person.

Some enforcement orders are very specific and direct exactly what needs to be done. Others set clear parameters around 'what' needs to be achieved, but allow specialists to determine 'how' it is done. Any affected parties can go back to the Environment Court for clarification. Anyone can apply for an enforcement order but Councils tend to apply for them when they need to address more serious and ongoing problems than those covered by abatement notices. They may also seek them when they want the certainty of a court-imposed solution.

Although any person can apply for enforcement orders under s.316(5), no person, other than the consent authority, the Environmental Protection Authority (EPA), or the Minister, may apply to the Environment Court for an enforcement order to enforce any condition of a resource consent or a rule in a plan or proposed plan

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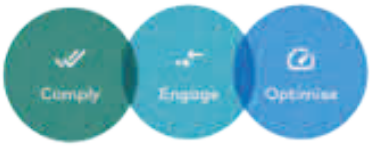

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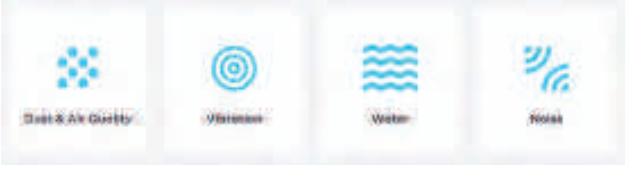

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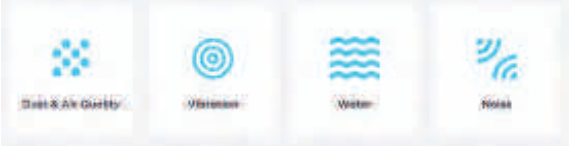

Diatec NZ | Level 2, Building A, Millennium Centre | 600 Great South Road
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that requires the holder to adopt the BPO to avoid or minimise any adverse effect of the discharge to which the consent or rule relates. Whoever applies for an enforcement order must notify everyone directly affected, including the person the order relates to. The Environment Court holds a hearing to allow everyone to have their say, and then makes its decision based in the presentation of evidence and balance of provabilities. The Environment Court may issue an interim enforcement order before it holds a full hearing, without giving notice to affected parties. In doing so, the Court will consider the effect on the environment if the order was not made; it will therefore need information about whether the situation is urgent and whether there is a threat of irreparable damage to the environment. An interim order relies on affidavit evidence from witnesses and experts and can usually be obtained within one or two days. If issued an enforcement order you must comply with it; otherwise, you are committing an offence under the RMA and may be imprisoned for up to two years or fined up to $300,000 (for individuals) or up to $600,000 (for any parties other than individuals).

What is the process to apply for an Enforcement Order?

Applications are lodged with the Environment Court and in order to ensure a fair process, fees are generally low. Applying for an order shall not be taken lightly and both expert and legal advice is recommended. If an application is unsuccessful (refused) and/or considered vexatious/unjustified, the Environment Court may award costs against the Applicant. This why it is important to have undertaken a suitable level of investigation and review before lodging an application. Enforcement orders offer more options than an abatement notice, including the ability to recover clean-up costs incurred or likely to be incurred in avoiding, remedying or mitigating any adverse effect on the environment. It can be useful to begin enforcement order proceedings to alert offenders to the seriousness of their actions and make them more amenable to solutions. If a problem or the options to resolve it are complex, enforcement proceedings provide a Court-supervised procedure for bringing about a conclusion, and if problems are encountered during the implementation of the solution, the parties can return to Court for direction.

Letter of Direction

Some Councils may use in their policy tool-box a letter of direction, which is not legally enforceable and should be reserved for dealing with co-operative parties who are motivated to follow the direction, and where the breach is of a minor nature, consistent with a breach that would perhaps also receive a formal warning. To prevent further breaches, or to remedy or mitigate the effects of non-compliance, council can give a written direction for a party to take or cease a particular action.

Declaration

Declarations are statements by the Court clarifying rights, powers, duties and other matters under the RMA. A declaration is not, strictly speaking, an enforcement tool, but a statement by the Environment Court clarifying legal matters. It might be issued before an abatement notice or enforcement order; in which case it can help a council draft the terms of those directives. A declaration can clarify whether an activity goes against the RMA, a rule in a district plan, a condition of resource consent, or a designation, as well whether an activity is permitted, controlled, discretionary, non-complying or prohibited (the 'activity status'). Declarations may cover whether an activity breaches the duty to avoid unreasonable noise, or the duty to avoid, remedy or mitigate adverse effects on the environment or any other matter relating to enforcement of the RMA.

s.332: Power of entry for inspection

Enforcement officers have the power to enter a site to carry out an inspection under s.332 of the RMA. Section 322 states that an EO who has been specifically authorised in writing by a council, can enter a place or structure (excluding a dwelling house) at any reasonable time to determine compliance with the RMA. This is dictated by the context of the event or actions that require inspection. For example, a night-time visit to a site that is allegedly emitting noise at night would be reasonable. The power allows the enforcement officer to go on, into, under or over a place or structure except a dwelling house. Authority to enter a dwelling house is explicitly excluded from s.332 of the RMA. It is important to note that a dwelling house can have quite a broad application and can include anywhere a person might expect to have privacy associated with personal living space. The authority for inspection is very wide and is obviously designed to allow the council to test compliance under the RMA. But that authority is limited in a wider sense and doesn't authorise entry for any reason.

s.333: Power of entry for survey

Enforcement officers have the power to entry for survey of a site under s.333 of the RMA. This section states that an EO may enter a site for survey for any purpose connected with the preparation, change, or review of a policy statement or plan, any EO specifically authorised in writing by any local authority or consent authority to do so, may do to carry out surveys, investigations, tests, or measurements. The section also states such survey can be conducted at any reasonable time, with or without such assistance, vehicles, appliances, machinery, and equipment as is reasonably necessary for that purpose.

s.38(1): Warranted officers

Section 38(1) of the RMA permits councils to authorise a certain person to carry out the functions and powers of an EO under the RMA. Councils must supply EOs with a warrant, which authorises the EO to carry out their functions and powers under the RMA. The warrant of authority acts as a general authority to access sites in the relevant district. Officers must carry a warrant of authority at all times when conducting works. Section 38(6) requires EOs to *"produce if required to do so, his or her warrant and evidence of his or her identity".*

The first practical step to entering a site (even if they have been granted permission to enter the site before hand) is that the officer should find the owner/occupier of the land and show the occupants their Photo ID and Warrant. The Officer is required to produce it, but not does not need to hand it over. If more than one officer comes to a site, all Warrants should be shown. An EO exercising any power under s.332 may seek assistance as is 'reasonably necessary'. This may include people or equipment needed to complete the inspection. For example, an EO might ask an engineer from an external consultancy to accompany them to site to conduct a survey.

Notice of inspections

If the owner or occupier is not present at the time of inspection, the EO is required (under s.332(4)) to leave a notice of inspection in a prominent position. This notice must outline the date and time of the inspection, and the EO's name. An officer can use common sense to identify a prominent position.

As noted above, EOs have power of entry to most locations under s.332 of the RMA. However, in circumstances that are excluded from this section, a search warrant may be required.

Record keeping

Good practise dictates that all EOs should as part of best practice, keep detailed records. This varies from field to field, however for acoustics, this includes a detailed, accurate and permanent record of what they see and do on site and ranges from dates, times, people present through to conversations, observations, weather, sketches and detailed notes on the sound environment. Notebooks, tablets or other record-keeping devices are useful for this purpose. Officers should take notes during the site works if able, but if not, immediately after their inspection. This will allow them to remember or refresh their memory on events and observations at any point in the future. Photos with time and date stamp with reference back to the notebook is also good practise. Any photographs or videos must only be taken if relevant to their lawful purpose for being there. The burden of proof falls of the EO. In terms of acoustics, it is also critical to have witnessed the measured noise levels.

s.330: Emergency works

Emergency works powers enable the suspension of the requirements under s.9 and s.12 to s.15 to allow for emergency works and preventative or remedial action. Emergency works apply when a service or area is likely to be affected by an adverse environmental effect requiring immediate response, or a sudden event likely to cause loss of life, injury or serious property damage. Section 330 *'emergency works and power to take preventive or remedial action'* allows under emergency situations, councils and some other authorities can do (or require someone else to do) any work needed to prevent, remove the cause of, or fix any adverse effect arising from an activity, including adverse effects that are likely to happen. During such emergencies, council officers might go onto a site and direct someone to do something to help the situation.

Emergency situations include sudden events causing or likely to cause loss of life, injury or serious damage to property. They also include situations when something must be done immediately to stop adverse effects on the environment, such as the discharge of a contaminant, when the person responsible is unable or unwilling to fix it immediately. When a council or other authority needs to use these emergency powers, it can act without first obtaining resource consent (if it would normally be required). However, it must apply for resource consent later, within a set time. The costs of emergency work on private land can be recovered from the person who caused the problem in the first place. If they are not recovered within 20 working days, the council can seek an enforcement order for the costs.

Section 330A 'resource consents for emergency works' states where an activity is undertaken under s.330, the person (other than the occupier), authority, network utility operator, or lifeline utility who or which undertook the activity shall advise the appropriate consent authority, within 7 days, that the activity has been undertaken.

Section 330B 'emergency works under Civil Defence Emergency Management Act 2002' states if any activity is undertaken by any person exercising emergency powers during a state of emergency declared, or transition period notified, under the Civil Defence Emergency Management Act 2002, the provisions of sections 9, 12, 13, 14, and 15 do not apply to any activity undertaken by or on behalf of that person to remove the cause of, or mitigate any actual or adverse effect of, the emergency.

Avoiding noise complaints and being a good neighbour

The saying *'forewarned is forearmed'* relates to avoiding noise complaints, this applies from residential setting through to larger concert events that have resource consent. Other common situations include non-residential activities within residentially zoned areas, for example a church having a disco at night or planned construction and emergency works. The best way to avoid a complaint is to communicate with the community or neighbours and let them know well in advance in writing or by personal notification. If residents are aware beforehand, then at least they can prepare for it or expect the work to come. Such tools are used before large events which range from large concert events through to scheduled night works that are critical to the city's infrastructure and operations.

Designations

A designation is a planning option used by Ministers of the Crown, local authorities and network utility operators approved as requiring authorities under s.167 of the RMA. Only requiring authorities can seek designations for land. A designation is a form of 'spot zoning' over a site, area, corridor or route in a district plan. The 'spot zoning' authorises the requiring authority's work and activity on the site, area or route without the need for land use consent from the relevant territorial authority (s.9(3) of the RMA does not apply).

Designations are often used to provide for networks such as land transport, telecommunications and electricity transmission. Under RMA procedures, designations override the provisions of both s.9(1), and the relevant District Plan. Section 9(1) of the RMA states that no person may use any land in a manner that contravenes a rule in a district plan or proposed district plan unless the activity is expressly allowed by a resource consent granted by the territorial authority responsible for the plan; or an existing use allowed by s.10 or s.10A. Section 176(1) however describes the relaxation of the s.9 rules for designated sites stating: *(1) If a designation is included in a district plan, then - Section 9(3) does not apply to a public work or project or work undertaken by a requiring authority under the designation.* In addition, s.176(2) provides the following commentary: *(2) The provisions of a district plan or proposed district plan shall apply in relation to any land that is subject to a designation only to the extent that the land is used for a purpose other than the designated purpose.* Any activity or works outside the scope of a designation will require resource consent unless the activity or works are a permitted activity within the underlying zone. The form and scope of a designation can also be controlled by conditions attached on the designation. The requiring authority of the designation such as KiwiRail for a railway corridor or Transpower for a transmission corridor still has a s.16 duty under the RMA to ensure noise they produce remains reasonable at all times. The requirement to adopt the BPO is therefore required to ensure noise emissions remain reasonable. Generally, the permitted noise standard set out in District Plan or New Zealand Acoustic Standards provides a good guide to what is a reasonable level of noise.

Penalties and offences under the Resource Management Act

s.338 - 339: Penalties and Offences

Offences are defined in the RMA and there are three levels of maximum penalty for different offences. The RMA creates a range of criminal offences for contravening the provisions of the Act and any party can be prosecuted for offended under the RMA. A prosecution occurs when a council takes someone to court. A council may lay charges under the RMA if the offending is significant enough and if it believes that punishing the offender will deter others. If the activity is sufficiently reckless and harmful, a council may choose to prosecute even someone who was cooperative after the offence was detected. There are three levels of offences under the RMA.

Grade 1 offences for which the maximum penalty for a person is imprisonment for up to 2 years or a fine up to $300,000. Entities may be subject to a fine up to $600,000. If the offence is a continuing one, they may also be liable to a fine up to $10,000 for every day during which the offence continues. These offences include but are not limited to using land in contravention of a rule in a district plan or any proposed district plan and contravening the provisions of an enforcement order or abatement notice.

Grade 2 offences for which the maximum penalty is a fine up to $10,000 and, if the offence is a continuing one, a further fine up to $1,000 for every day during which the offence continues. These offences include but are not limited to failing to provide information to an enforcement officer, contravening the provisions of an excessive noise direction, contravening an abatement notice for unreasonable noise and contravening any order (other than an enforcement order) made by the Environment Court.

Grade 3 offences for which the maximum penalty is a fine up to $1500. The offences include but are not limited to willful obstruction of people exercising powers under the Act, contravention of a summons issued by an Environment Judge or Commissioner, refusal to give evidence at Environment Court proceedings or refusal to answer questions put by a member of the Environment Court, contravention of a summons or order to give evidence issued by a consent authority.

Infringement offences, notices and fees

Infringement fees are attached to infringement notices and are fees set according to the Resource Management (Infringement Offences) Regulations 1999. An infringement notice is punitive. Section 343A of the RMA covers infringement offences and s.343C covers infringement notices.

As with abatement notices, councils can recover costs where the non-compliance relates to the "administration, monitoring or supervision" of resource consents, as set out in s.36(1)(c) of the RMA. Courts do not issue fines with enforcement orders. However, under section 314(1)(d), the Court can direct a person to reimburse any other person (e.g., the council) for the "actual and reasonable costs and expense which that other person has incurred or is likely to incur in avoiding, remedying, or mitigating any adverse effect on the environment." Fees are an alternative to criminal proceedings. A Council may serve an infringement notice where an infringement offence has been committed.

In order to issue an infringement notice, an EO is required to have either observed the person committing the offence, or have information or evidence that gives reason to believe an offence has been committed under s.343(c) of the RMA. Infringement notices can be issued for one or more breaches of district or regional plan rules in relation to noise (breach of s.9 of the RMA is an offence under s.338(1) and an infringement offence). They can also be issued for contravening an excessive noise direction under s.327, and for breach of an abatement notice for unreasonable noise under s.322(1)(c). As prescribed under the Resource Management (Infringement Offences) Regulations 1999, the penalties are:

1. $500 - contravening an excessive noise direction under s.332(2)(c) of the RMA; and
2. $750 - contravening an abatement notice for unreasonable under s.322(1)(c) of the RMA

The amounts charged are relatively small and may not be a sufficient deterrent for some offenders. Infringement notices cannot be used for (breaking) contravention of an enforcement order.

The Resource Management Amendments Act 2020 made changes to the to the RMA 1991, for example under s.338(4) of the RMA has been amended to extend the limitation period to 12 months. Previously, the maximum fee for an infringement offence that can could set through regulations under the RMA was $1,000. Section 360(1) of the RMA was amended to provide for maximum fees for infringement offences to be up to $2,000 in the case of a natural person, and up to $4,000 in the case of a person.

Issuing the infringement notice

Councils can keep all infringement fees received for notices issued by its enforcement officers (s.343D). The notices can only be issued by a council EO (authorised under s.38). Any EO (but not necessarily the officer who issued the notice) may deliver the infringement notice or a copy of it to the person alleged to have committed an infringement offence (s.343C(2)). Delivery may be in person or by post addressed to that person's last known place of residence or business. In the case of postal delivery, the notice or copy must be deemed to have been served on that person when it was posted.

Matters raised with infringement notices

The person served with the infringement notice (or an informant) may choose to raise "any matter relating to circumstances" of the

offence. This must be in writing to the council within 28 days of the date on which the infringement notice was served or delivered to the person (Resource Management (Infringement Offences) Regulations 1999, Schedule 2). If the council accepts the circumstances that are raised as grounds not to pursue the infringement fee, it can choose to take no further action. This scenario is the most common that councils deal with. If the council does not accept the circumstances, it will continue with the infringement process by issuing a reminder notice unless the infringement fee is paid (see s.343C(4)).

Payment of infringement fee

The defendant has 28 days from the date of service of the infringement notice to pay the infringement fee or request a hearing. If the recipient does not pay the infringement fee, and does not request a hearing, the council can issue a reminder notice. The form prescribed for the reminder notice is prescribed in the Resource Management (Infringement Offences) Regulations 1999 . Once a reminder notice has been issued, the person receiving the notice has 28 days after the date of issue of the reminder notice to pay the infringement fee. If the defendant fails to either pay the fee or request a hearing the local authority can choose to either take no further action, or within six months of the date of the offence, refer a copy of the reminder notice with the District Court, with a record of the date and method of service of the infringement notice (or a copy of the infringement notice with a record of the date and method of service of the reminder notice) and the Court fee of $30.

s.338: Prosecution

The two principal purposes of prosecution are to punish the offender and to deter potential further re-offending by the offender or others. Prosecution is the most serious enforcement tool. A prosecution can be directive or punitive and establish the guilt or innocents of an accused party. Prosecutions under section 338(1), (1A) or (1B) of the RMA carry a significant maximum penalty (a fine of up to $300,000

or up to two years imprisonment for individuals, or $600,000 for companies) and the Court will usually impose criminal convictions if the prosecution is successful. The threat of legal punishment can act as an effective deterrent on noncompliance. For this threat to be effective, there needs to be a general perception that the laws are enforced and that meaningful punishment will result from non-compliance. However, as indicated above, the maximum penalties under the RMA are also comparatively low compared with those under other regulatory regimes in New Zealand. Thus, in many offences against the RMA involve an element of commercial gain to the offender. It is common for this gain to far outweigh the penalties imposed through the courts, which means that the payment of a fine may simply be viewed as a 'reasonable fee'. The CCCP – Achieving Compliance; A Guide for Compliance Agencies in New Zealand June 2011; page 181 states *"...where a regulated entity deliberately or persistently fails to comply, it is vital that the agency take swift and firm enforcement action. Failing to do this will:*

- Unfairly advantage those who are non-compliant, as against those who comply voluntarily
- Undermine incentives for voluntary compliance
- Damage the agency's credibility with the regulatory sector and the wider public, who will perceive that the agency allows deliberate offenders to 'get away with it'
- Undermine the agency's own internal morale

Any party can be prosecuted for offences under the RMA. Prosecution is not restricted to the person actually carrying out the act which is illegal, but can include a wide range of associated parties. Where an agent, including a contractor, commits an offence, the person engaging the agent can also be liable as if he or she had committed the offence. An employer can be liable for an offence committed by an employee.

The prosecution process - Criminal Procedure Act 2011

Prosecutions under the RMA are dealt with in the District Court by a District Court Judge who is also an Environment Judge, unless otherwise directed by the Chief District Court Judge. Prosecutions are governed by the Criminal Procedure Act 2011. A prosecution is initiated by filing a 'charging document' with the District Court. A 'charging document' sets out the details of the alleged offence, such as the rule in a plan that has been breached and the respect in which it is said to have been contravened. Local authorities normally prosecute offences under the RMA, but prosecutions can be initiated by any person.

Solicitor-General Prosecution Guidelines 2013

When taking prosecutions under the RMA, Councils may be guided by the standards of good criminal prosecution practice expressed in the 'Solicitor-General's Prosecution Guidelines 2013'. The Council's criminal prosecutions are normally conducted by in-house or external lawyers, on the Council's behalf, and the 'Solicitor-General's Prosecution Guidelines' and the Media Protocol for Prosecutors (Crown Law, 2013) while not binding on local authorities, represent best practice. The list below is based on the Solicitor-General's Prosecution Guidelines. It is illustrative only and not a comprehensive list of the matters to be considered, as the matters will vary in each case according to the particular facts. Under the Solicitor-General's Prosecution Guidelines a prosecution is more likely if:

- A conviction is likely to result in a significant sentence;
- The offence caused significant harm or created a risk of significant harm;
- The offence was committed against a person serving the public for example, a police officer or Council officer;
- The individual was in a position of authority or trust;
- The evidence shows that the individual was a ringleader or an organiser of the offence;
- There is evidence that the offence was premeditated;
- There is evidence that the offence was carried out by a group;
- The victim of the offence was vulnerable, has been put in considerable fear, or suffered personal attack, damage or disturbance;
- The offence was committed in the presence of, or in close proximity to, a child;
- There is an element of corruption;
- The individual's previous convictions or cautions are relevant to the present offence;
- There are grounds for believing that the offence is likely to be continued or repeated, for example, by a history of recurring conduct;
- The offence, although not serious in itself, is widespread in the area where it was committed;
- A prosecution would have a significant positive impact on maintaining community confidence;
- The individual is alleged to have committed the offence while subject to an order of the court; and
- A confiscation or some other order is required and a conviction is a prerequisite.

Under the Solicitor-General's Prosecution Guidelines a prosecution is less likely if:

- The court is likely to impose a nominal penalty;
- The individual has already been made the subject of a sentence and any further conviction would be unlikely to result in the imposition of an additional sentence or order;
- The offence was committed as a result of a genuine mistake or misunderstanding (these factors must be balanced against the seriousness of the offence);
- The loss or harm can be described as minor and was the result of a single incident, particularly if it was caused by a misjudgement;
- There has been a long delay between the offence taking place and the date of the trial, unless: the offence is serious, the delay has been caused in part by the individual, the offence has only recently come to light, or the complexity of the offence has meant that there has been a long investigation;
- A prosecution is likely to have a bad effect on the physical or mental health of a victim or witness, always bearing in mind the seriousness of the offence;
- The individual is elderly or very young or is, or was at the time of the offence, suffering from significant mental or physical ill health, unless the offence was serious or there

is real possibility that it may be repeated;

- The individual has put right the loss or harm that was caused (but individuals must not avoid prosecution or diversion solely because they pay compensation); and
- Where other proper alternatives to prosecution are available (including disciplinary or other proceedings).

Evidential test

When making the decision to take a prosecution, a local authority will consider, as noted above, a host of issues including the evidence it has before it. The first part of the test for prosecution is the 'evidential test'. This requires a legal assessment of whether:

- The evidence relates to an identifiable person (whether natural or legal);
- The evidence is credible;
- The council can produce the evidence before the court and it is likely it will be admitted by the court;
- The evidence can reasonably be expected to satisfy an impartial jury (or Judge), beyond a reasonable doubt, that the individual has committed a criminal offence; the individual has given any explanations and, if so, whether the court is likely to find the explanations credible in the light of the evidence as a whole; and
- There is any other evidence the council should seek out which may support or detract from the case. Once it has been established that there is sufficient evidence to provide a reasonable prospect of conviction, the test for prosecution requires a consideration of whether the public interest requires a criminal prosecution.

Public interest test

The second part of the test for prosecution is the 'public interest' test. This test is important for ensuring that the discretion to prosecute is exercised in accordance with the rule of law and any relevant statutory requirements.

Compliance models

Compliance means meeting or exceeding the requirements albeit a rule or section of legislation. Compliance should be focused on the most important issues and problems to achieve the best environmental outcomes and use of resources. The approach to compliance shall also be transparent, be consistency of process, be fair and based in evidence and good science. Compliance models help to understand what motivates individuals to comply with regulations, and what interventions are needed to create behaviour change and achieve compliance. There are various models throughout literature on regulatory best practice. The model below developed by Waikato Regional Council describes a strategic approach to achieving compliance under the RMA.

The V.A.D.E model

As noted above compliance means meeting or exceeding the requirements, this means the participant is aware of the reasonability and is willing to comply and able to comply. Compliance is related directly to a number of variables including behaviours, education, risk or punishment. The VADE ('Voluntary, Assisted, Directed, Enforced') model, illustrates how regulators, including Councils and Government Agencies could manage compliance activities. VADE stands for "voluntary, assisted, directed, enforced". VADE divides parties into behavioural groups and describes the strategies appropriate to each group. Being able to adopt successful strategies for each behavioural group depends on regulators having sufficient capability and capacity.

- The green voluntarily group represents parties willing to comply and do the right thing.
- The blue represents parties willing to comply but who may need assistance to do so. In such cases these groups may need help through education or by referrals to experts.
- The orange represents parties for whom compliance is not a priority and they must be directed to comply. In such cases these groups may be non-compliant due to competing priorities or poor compliance culture. These groups need vigilant oversight of these parties with frequent audits and inspections. In all cases non-compliance should be treated seriously, with formal warnings, coercive enforcement tools, infringement fines and prosecution.

The red represents the most serious parties who may act in open defiance of rules and regulations or show a reckless or negligent disregard for them. In such cases, regulators must use their strongest coercive enforcement techniques. Inspections and audits need to be targeted and relentless. Non-compliance should be met with prosecution and/or revocation of the parties' right to operate.

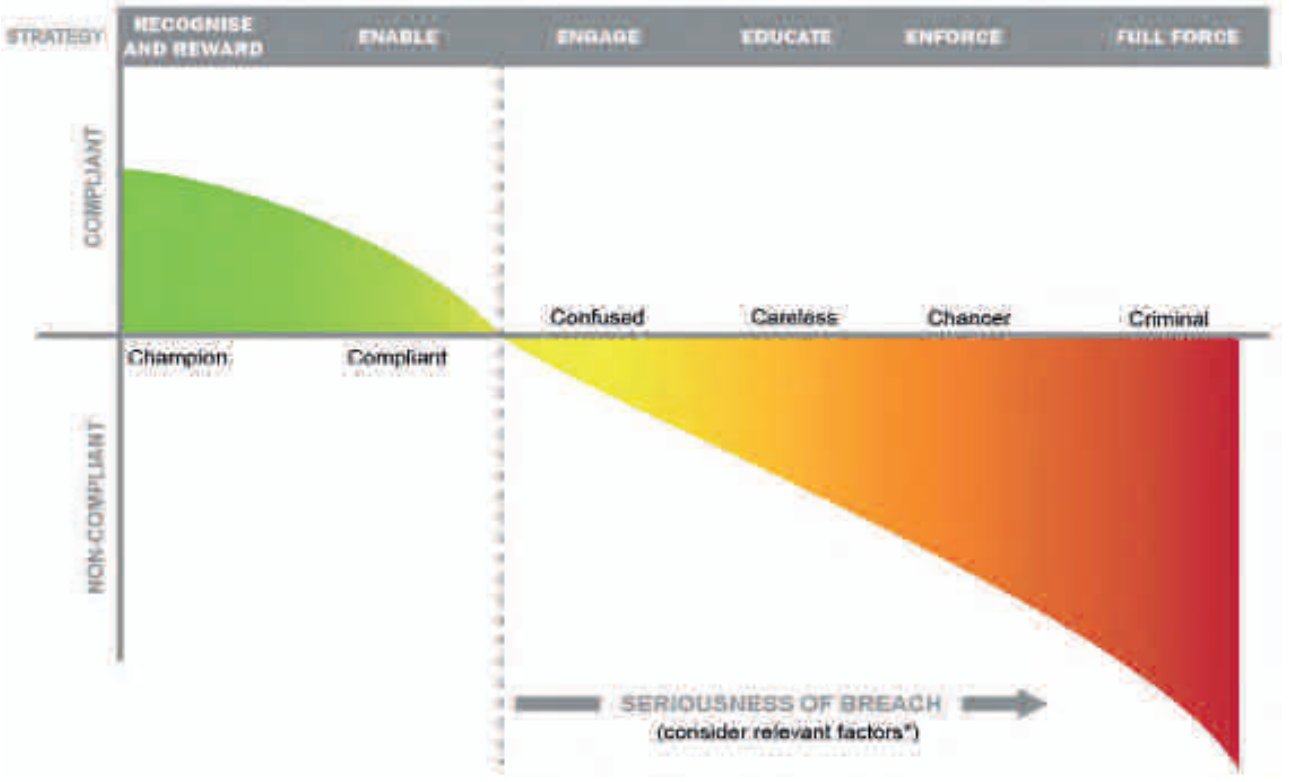

Figure 1 – *Strategic approach to achieving compliance under the RMA (source: Waikato Regional Council)*

The compliance pyramid and behavioural change

There are various examples of the compliance pyramid with most being adapted from Ian Ayres & John Braithwaite (1992), Responsive Regulation: Transcending the deregulation debate, Oxford University Press, New York is a widely used model for achieving positive behaviour change. At the bottom of the pyramid are those who are willing to comply and at the top are those who resist compliance. The pyramid is designed to create downward pressure – that is, to move non-compliant individuals or organisations down the pyramid to full compliance and to where lower-level and less costly interventions can be utilised. The pyramid assumes that most people are willing to comply and know what to do to comply, while progressively fewer people need stronger interventions to ensure compliance. Most regulatory action occurs at the base of the pyramid, where compliance is sought through persuasion, but escalated when compliance is not achieved. The pyramid is similar to the VADE model.

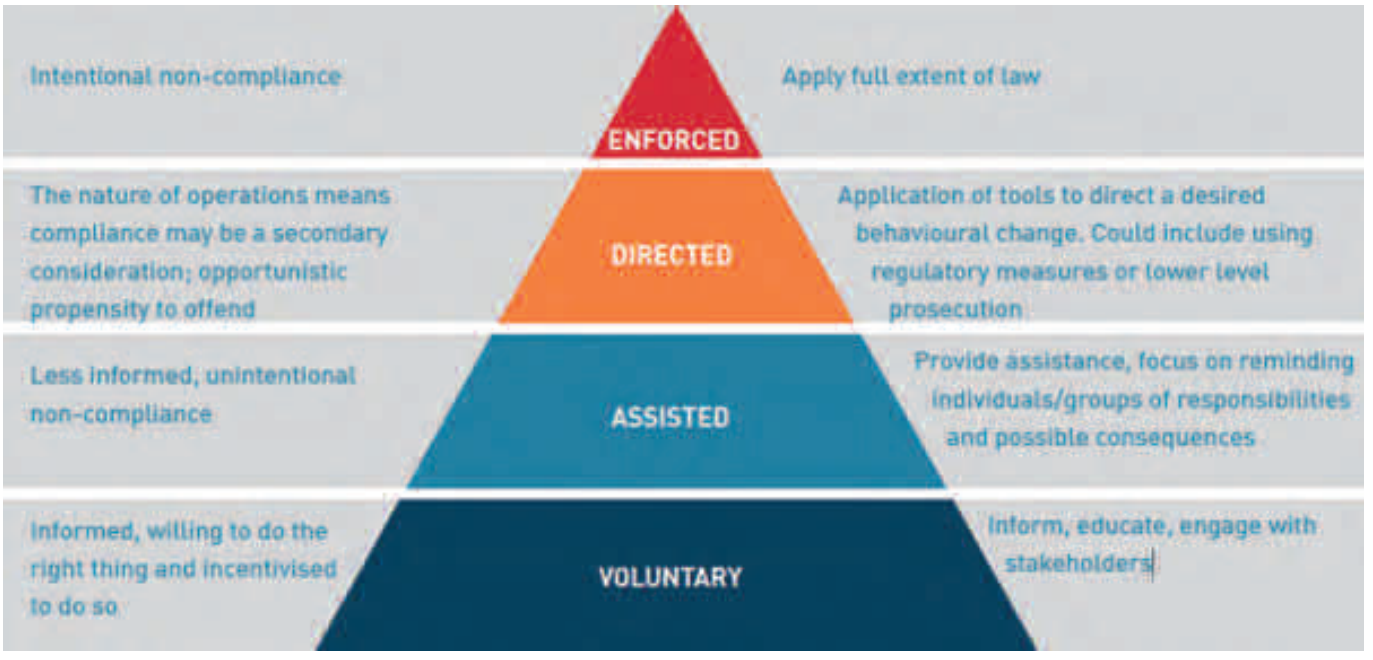

Figure 2 – *The VADE ('Voluntary, Assisted, Directed, Enforced') compliance model (source: VADE Model Adapted from the Braithwaite Responsive Regulation Model / Ayres & Braithwaite Enforcement Pyramid 1992)*

The compliance pyramid approach is endorsed in the Productivity Commission (2013) report, which states that *"most regulatory specialists now argue, on the basis of considerable evidence, that a judicious mix of compliance promotion and deterrence is likely to be the best enforcement strategy". The Commission also explain that "the enforcement challenge is striking the right balance between persuasion and coercion in securing regulatory compliance. This balance may differ between regulatory regimes. Similarly, the ideal balance of persuasion and coercion may differ between local authorities due to differences in the populations being regulated."*

The 4-E model

The 4-E model for change is consistent with VADE, in that it provides for different types of interventions based on the behaviours of regulated parties. Impotently the 4-E model includes engagement. In the context of resource management, the Compliance and Enforcement Special Interest Group (CESIG) has also developed a shared strategic risk-based compliance framework to guide councils. CESIG is made up of Compliance Managers from across the regional sector. The CESIG model emphasises the importance of the balanced '4-E' model which are four strategies that should be used together.

1. (E1) Enable: provide opportunities for regulated parties to be exposed to industry best practice and regulatory requirements.
2. (E2) Engage: consult with regulated parties, stakeholders and the community on matters that may affect them. This will engender support and identify opportunities to work together.
3. (E3) Educate: alert regulated parties to what is required to be compliant. Education should also be used to inform stakeholders and the community about relevant regulations.
4. (E4) Enforce: where appropriate using the range of formal coercive enforcement tools.

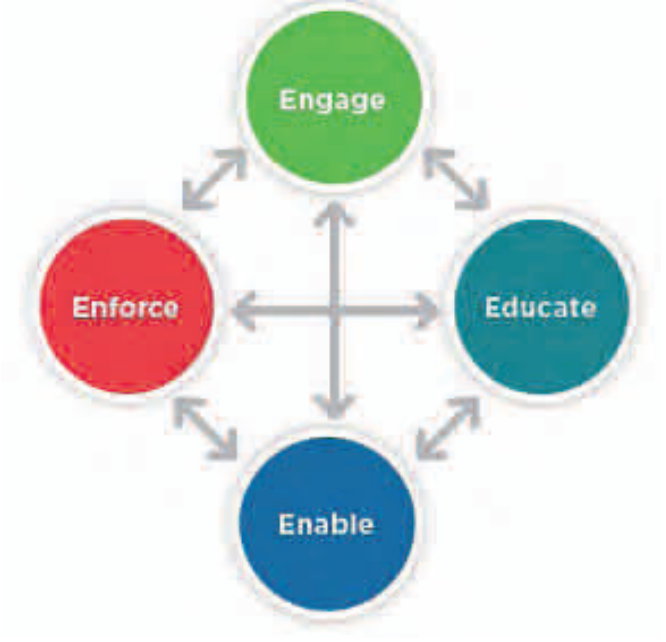

Figure 4 – *4-E model for change (source: Adapted from: The Compliance and Enforcement Special Interest Group. Unpublished. Regional Sector Strategic Compliance Framework 2016–18.)*

The Strategic Customer Compliance Framework

Monitoring and compliance employs a risk based approached in its execution and deals with non-compliance using the toolbox of enforcement tools. The Strategic Customer Compliance Framework (SCCF) includes monitor compliance (what is the state of compliance), encourage compliance (achieving the highest levels of compliance), dealing with non-compliance (using enforcement tools to bring about behaviour change) and review each of these components (to gauge the effectiveness of the SCCF).

Figure 3 – *Strategic Customer Compliance Framework (source: Implementation of a Strategic Compliance Framework by CESIG)*

The Risk Matrix

In the context of environmental noise monitoring and compliance risk is traditionally viewed or calculated using the likelihood of noncompliance occurring and the consequence or magnitude of non-compliance relative to human harm, health, amenity and the environment. The RMA this includes cultural, social and economic effects. The ranking level of risk informs development of an appropriate compliance monitoring response that considers among other things the frequency, type and scale of

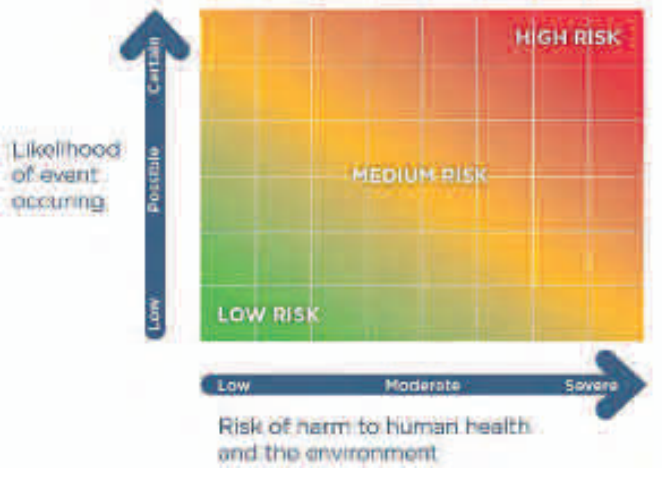

Figure 5 – *Risk matrix (source: Compliance and Enforcement Special Interest Group. Unpublished. Regional Sector Strategic Compliance Framework 2016–18.)*

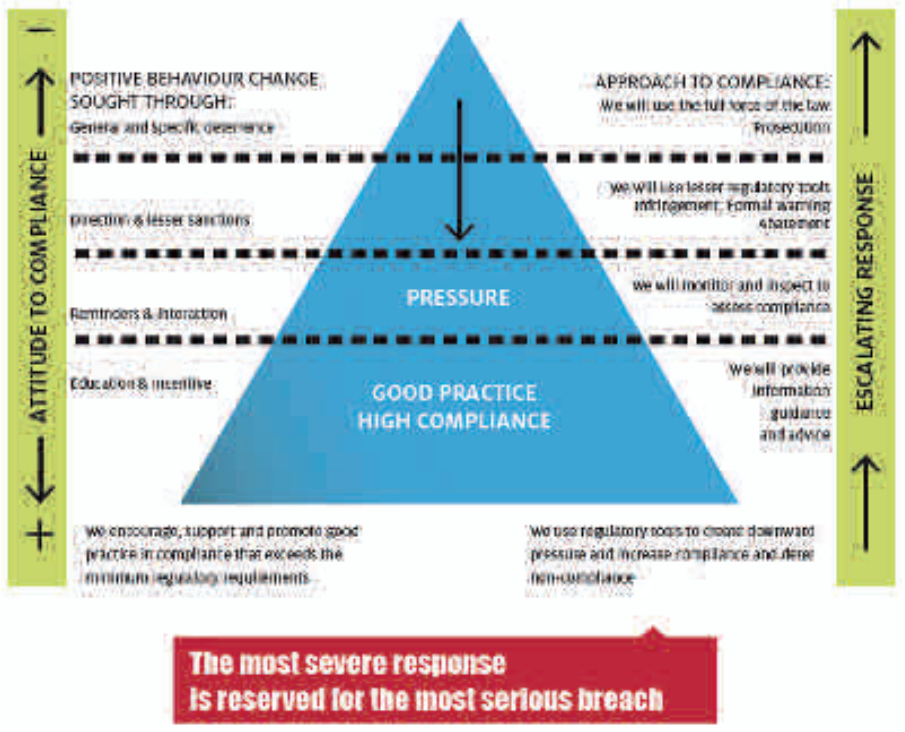

Figure 6 – *The compliance pyramid (source: Adapted from Ian Ayres & John Braithwaite (1992), Responsive Regulation: Transcending the deregulation debate, Oxford University Press, New York)*

monitoring. Applying a risk-based approach enables monitoring efforts to be focused on the biggest risks to the environment and community and target areas where less likely to comply. The risk matric is another tool to use for focusing monitoring efforts and is not generally an enforcement decision tool.

Key roles outside of Council (Courts, Police, Iwi and Māori)

The Courts play an important role in compliance, monitoring and enforcement. The court have significant powers to punish offenders, deter future offenders, and direct remediation of damage. Regarding the District Court, the Court hears prosecutions under the RMA in the first instance. The High Court will hear appeals from the District Court. For RMA prosecutions, District Court judges must also hold office as an Environment Court Judge. The Environment Court is responsible for hearing applications for enforcement orders, among other RMA responsibilities. The Environment Court is made up of Environment judges and commissioners. Commissioners have knowledge and experience in areas such as resource management. Council staff undertaking compliance, monitoring and enforcement work may for example require assistance from the Police to execute a search warrant or in relation to the health and safety of enforcement officers. With respect to noise Police must be present under the RMA when entering someone's premises, dwelling house to seize noise equipment.

The Treaty of Waitangi (Te Tiriti o Waitangi) and Māori

The environment is integral to Māori culture and identity and is seen as an interconnected whole; its health is assessed in the same way. The Treaty of Waitangi, as New Zealand's founding document, sets out obligations for the Crown to provide for the rights and interests of Māori. The principle of partnership, used to describe the relationship between the Crown and Māori, is well-established. The concept of partnership emphasises a duty of both parties to act reasonably, honourably, and in good faith. With respect to the RMA definitions, the Treaty of Waitangi (Te Tiriti o Waitangi) has the same meaning as the word Treaty, as defined in the second section of the Treaty of Waitangi Act 1975.

Section 8 of the RMA requires councils to take into account the principles of the Treaty of Waitangi in exercising their functions and duties, which includes compliance monitoring and enforcement functions. Māori express this relationship by identifying with their environment, often with awa or moana (river or lake) or a landform such as maunga (mountain). A kaitiaki is a person or group described as a guardian of taonga (treasures), which include all natural resources this is referred to as Kaitiakitanga (guardianship) this is a special reciprocal relationship between Māori and the whenua (land) – a practice of guardianship and environmental management grounded in a Māori world view. In Te Ao Māori people are a part of the environment – not superior to it. The environment supports the economy and provides resources for Māori, and Māori recognise that along with the privileges the environment provides comes the responsibility to care and protect for the sustainability of the environment including their cultural rituals and practices for both current and future generations. The degradation of the physical natural environment also weakens its mauri (life force) and has corresponding consequences for the health, well-being and identity of the people who are supported by the whenua. Iwi therefore have a strong interest in ensuring councils fulfill their compliance monitoring and enforcement obligations effectively to help preserve the mauri of the whenua. The consultation principle has developed over time. Originally the Tribunal regarded it as a courtesy for the Crown to consult Māori, but in later years this strengthened into a view that the Crown had a duty to consult Māori on issues that affect them. A number of requirements in the RMA require councils to involve iwi and other Māori groups in carrying out their functions. Although these requirements do not impose any specific obligations on councils.

Noise outside the Resource Management Act

There are several types of noise sources or situations which are specifically not covered by the RMA, common situations are discussed the following sections.

Health Act 1956

The purpose of the Health Act 1956 is to protect the health and safety of people and communities. The Act makes reference to noise in part. Section 29 *'Nuisances defined for purposes of this Act'* includes under s.29(ka) *'where any noise or vibration occurs in or is emitted from any building'*. Section 120C '*Regulations as to housing improvement and overcrowding'* also requires the protection of dwelling houses from excessive noise. Section 23 *'General powers and duties of local authorities in respect of public health'* allows councils to address noise that is considered to be a 'statutory nuisance' meaning a nuisance that has public health significance.

Reserve sensitivity

Reverse sensitivity is not specifically included within the RMA, however the term used in the New Zealand planning system to describe the sensitivity of some activities to other lawfully established activities in the vicinity. Reverse sensitivity is the vulnerability of an established activity to objection from a new land use and typically arises where incompatible land uses are located in close proximity to each other, resulting in the potential for conflict and complaints from the more sensitive activity. Complaints and adverse reactions by residents can adversely affected the on-going viability of the legitimate activities. Various plans include provisions relating to reverse sensitivity. Noise setbacks or setting a required level of sound insulation for a noise sensitive space within a building or even an indoor sound level, may be required in such provisions. Councils are often asked by the New Zealand road and rail authorities (Waka Kotahi New Zealand Transport Agency and KiwiRail) to include within District Plans, land use planning measures to address noise and vibration effects to address what are termed 'reverse sensitivity' effects on the operation of the road or rail transport system.

It should be noted that 'reverse sensitivity' issues do in effect arise under the RMA.

Existing use rights under s.10 of the RMA, to produce noise, can be overridden by s.16 "duty to avoid unreasonable noise". For example, there is an Hotel in a city that historically has existing use rights to produced noise up to a high level (because they were far away from any residential premises) at certain times. However, over time the area around the Hotel has been built-up with apartments and people begin to complain about the noise. Then the *"duty to avoid unreasonable noise"* will be applied and the existing noise levels may well be deemed unreasonable. Thus requiring the Hotel to take action to address this and bring the levels down to some specified reasonable level.

COVID-19 Recovery (Fast-track Consenting) Act 2020

The COVID-19 Recovery (Fast-track Consenting) Act 2020 was introduced with the purpose to *"urgently promote employment to support New Zealand's recovery from the economic and social impacts of COVID-19 and to support the certainty of ongoing investment across New Zealand, while continuing to promote the sustainable management of natural and physical resources."* Section 12 *'relationship between this Act and Resource Management Act 1991'* states under s.12(9) every person who carries out an activity as part of a listed project or a referred project, or in the course of work on infrastructure, is subject to the duty to avoid unreasonable noise under s.16 of the RMA and the duty to avoid, remedy, or mitigate adverse effects under s.17 of the RMA.

Reserves Act 1977 and Reserves (Infringement Offences) Regulations 2019

The Reserves (Infringement Offences) Regulations 2019 are made under s.123A of the Reserves Act 1977. These regulations come into force on 3 February 2020. Schedule 3 of these regulations *'Penalties for infringement offences in bylaws'* contains 12 parts. Part 1 *Anaura Bay Recreation Reserve Bylaws 1999,* s.13 'Noise' states that a person must not use or play a musical instrument, a public address system, or any other type of amplified system in the reserve unless permitted to do so by a Commissioner, a ranger, or an authorised person. Section 13(2) states a person must not cause to be made any sound or noise that disturbs or annoys or is likely to disturb or annoy other occupiers or users of the reserve.

Noise from vehicles

New vehicles: Traffic Regulations 1976 (Reconfirmed as 1 July 2017)

Vehicles entering the New Zealand fleet need to meet noise emission requirements at the time of their entry. Once vehicles are in service, noise emissions and/or noise control devices may be checked during the warrant of fitness (WoF) process and

certificate of fitness process (CoF) for heavy vehicles, camper vans etc., with gross weight over 3,500 kgs. *'Schedule 1 - Maximum noise output of new vehicles'* of the Regulations sets out the maximum permitted noise level for vehicle types. For example, for a Moped, the maximum noise level is 77 dBA. For motor vehicle having a gross vehicle weight of more than 3,500 kg and having an engine with a power output of more than 150 kW, the maximum noise levels is 88 dBA. These levels apply to noise when measured in accordance with test methods laid down in British Standard 3425 Method for the measurement of noise emitted by motor vehicles or in *ISO 362-1:2015 Measurement of noise emitted by accelerating road vehicles — Engineering method — Part 1: M and N categories.* This standard specifies an engineering method for measuring the noise emitted by road vehicles of categories M and N under typical urban traffic conditions. It excludes vehicles of category L1 and L2, which are covered by ISO 9645, and vehicles of category L3, L4, and L5, which are covered by ISO 362-22009 Measurement of noise emitted by accelerating road vehicles — Engineering method — Part 2: L category. It is noted British Standard 3425 Method for the measurement of noise emitted by motor vehicles was replaced with BS ISO 362-2:2009 Measurement of noise emitted by accelerating road vehicles. Engineering method. L category. The noise limit for cars is measured at the exhaust while stationary.

Excessive noise from vehicles: Land Transport (Road User) Rule 2004

The New Zealand Police can enforce 'excessive noise' from vehicles on the road. Land Transport (Road User) Rule 2004 Clause 7.4 (1) States among other things that a driver must not operate a vehicle that creates noise that, having regard to all the circumstances, is excessive. The overall aim of the amendment Rule is to reduce excessive vehicle exhaust noise by targeting the noisiest vehicles (the 'gross emitters'), i.e., vehicles fitted with modified exhaust systems that emit noise well in excess of the permitted decibel limits. Clause 7.4 (2) states *'a person must not create by any means (for example, a car stereo) within or on a vehicle any noise that, having regard to all the circumstances, is excessive'.* Clause 7.4 (1) state that in determining whether any noise is excessive, regard may be had, in addition to all other relevant matters, to the manner of operation of the vehicle, the condition of the vehicle, the time of the day when the noise is created, the locality where the noise is created, the likelihood of annoyance to any person and any relevant standard or specification that applies under the Act. There are exceptions to producing excessive noise such as the rule authorises:

i. The use of sirens fitted to emergency vehicles being used on urgent occasions, when the driver is in distress;

ii. The use of audible security alarms fitted to small passenger service vehicles or when a person in or associated with the use of the vehicle is in distress; and

iii. The use of audible security alarms fitted to a motor vehicle that is being operated by the holder of a license as a property guard that is being used to transport money or other valuable goods.

Excessive noise from vehicles - Formal testing: Land Transport Rule - Vehicle Equipment Amendment 2007

Police have the power to refer *excessively* noisy cars for a formal noise test, and WoF inspectors can refer light and mid-weight vehicles (i.e. most cars, vans, motorcycles and light goods vehicles). The police may require that vehicle undergo an 'objective noise test' before being used on the road again. In the objective noise test, the noise levels are measured with a calibrated noise meter and the results compared against the maximum noise level limits. Vehicles not meeting these requirements may require repair or replacement of noisy exhaust systems before returning to on-road use. The detailed requirements for objective noise tests are set out in the *Land Transport Rule - Vehicle Equipment Amendment 2007.* Only a low volume vehicle certifier can carry out an objective noise test. If your vehicle passes the test, the certifier will attach a label to your vehicle that verifies it meets the requirements. If your vehicle fails the test, you cannot legally drive it on the road until you have repaired the exhaust. The detailed requirements for objective noise tests are set out in the *Land Transport Rule - Vehicle Equipment Amendment 2007,* which should be read in conjunction with the *Land Transport (Road User) Rule 2004.*

Cars on private land

It should be noted that the provisions of the RMA do apply to motor vehicles on private premises, such as vehicles left idling, horns or doors opening or closing or cars driving down a private Right of Way (RoW). Once on a public road, other regulation apply such as the Traffic Regulations 1976, Land Transport (Road User) Rule 2004, or the Land Transport Rule - Vehicle Equipment Amendment 2007. It is common during the Resource Consent process to require an assessment of both stationary and moving vehicle noise on private land.

The Building Act 2004 and Building Code

The Building Act 2004 describes what is covered by building controls and sets out the law for building work in New Zealand. The New Zealand Building Code is the First Schedule to the Building Regulations 1992. All building work must comply with the Building Code. Part 2 and Schedules 1 and 2 deal with matters relating to the building code and building control, including the requirements relating to building work for example, the requirement for a building consent. The Building Act also governs the building sector and sets out the rules for the construction, alteration, demolition and maintenance of new and existing buildings in New Zealand. All building work in New Zealand must comply with the Building Code, even if it doesn't require a building consent. This ensures buildings are safe, healthy and durable for everyone who may use them. The Building Code is contained in regulations under the Building Act 2004, specifically s.400 Regulations: Building Code. The Building Code consists of three general clauses and 38 technical clauses. Within each technical clause the requirements are explained in three levels being objective, functional requirement and performance.

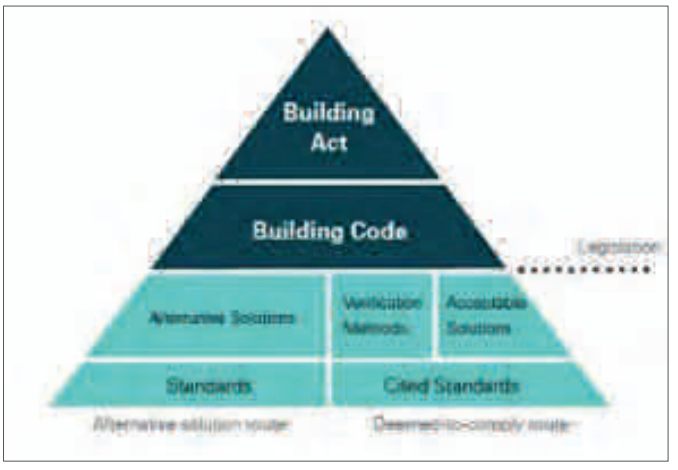

Figure 7 – *Hierarchy of the Building Act 2004 (source: https://www.building.govt.nz/building-code-compliance/how-the-building-code-works/)*

The Building Code contains a set of performance standards and how building work must perform but not how to meet them, acceptable solutions (standard designs to achieve the performance requirements) are provided. Clause G covers 'Services and Facilities' and contains Clause G6 'Airborne and Impact Sound'. There are two performance criteria defined in this clause, the 'Sound Transmission Class' (STC) and Impact Insulation Class (IIC). The New Zealand Building Code requires a minimum standard of STC of 55 dB for inter-tenancy walls and IIC 55 dB for inter-tenancy floors of habitable spaces.

Residential Tenancies Act 1996

The Residential Tenancies Act 1996 requires that all tenants have the right to peace, comfort and privacy from their neighbours or other tenants. The landlord is responsible and is required to take any reasonable steps to make sure none of their tenants interfere with each other's quiet enjoyment, this includes excessive or unreasonable noise. The Act specifically notes s.38 the landlord must not permit any interference of quiet enjoyment, this includes noise from other tenants or activity on-site. In specific s.38 of the Residential Tenancies Act 1996 states. If quiet enjoyment is being breached, the tenant has the right to issue the landlord a notice to remedy. In this notice, the tenant must give the landlord a reasonable amount of time to resolve the problem.

If the landlord does not comply within the reasonable timeframe, the tenant can apply to the Tenancy Tribunal. It is noted that the Residential Tenancies (Healthy Homes Standards) Regulations 2019 sets requirements for healthy home standards for items such as heating and ventilation, however of note there is no mention to standards around sound insulation or acoustics.

Section 38 Quiet Enjoyment

1. The tenant shall be entitled to have quiet enjoyment of the premises without interruption by the landlord or any person claiming by, through, or under the landlord or having superior title to that of the landlord.
2. The landlord shall not cause or permit any interference with the reasonable peace, comfort, or privacy of the tenant in the use of the premises by the tenant.
3. Contravention of subsection (2) in circumstances that amount to harassment of the tenant is hereby declared to be an unlawful act.

Noise in the workplace: Health and Safety at Work Act 2015

Noise within the workplace is covered by the Health and Safety at Work Act 2015 (HSWA 2015). The Crown (Government) Agency responsible for workplace health and safety in New Zealand is 'WorkSafe New Zealand'. They are a standalone Crown Agency, formed in 2013 and who focuses only on workplace health and safety issues, including workplace noise. In New Zealand the HSWA 2015 is the principal health and safety statute. This Act came into force in April 2016. The aim of the Act is to prevent harm occurring in the workplace, including potential harm from noise (although noise is not specifically named in the Act). The term occupational noise includes 'all sound in the workplace, whether wanted or unwanted'. Occupational sound and noise are interchangeable. Noise is present in every human activity and when assessing its impact on human health and well-being it can be classified as either occupational noise in the workplace) or environmental noise, which is noise in all other places, including recreational settings. The terms 'occupational noise', 'occupational workplace noise' or 'workplace noise' for the purpose of this review are equivalent. The International Labour Organization (ILO) defines occupational health and safety as *"the outcome of adequate protection for a worker from sickness, injury and disease arising from work".* The HSWA 2015 was followed by the release of the Health and Safety at Work (General Risk and Workplace Management) Regulations 2016. These regulations provide the risk management process to be followed, including identifying hazards (although noise not a stated hazard) and a hierarchy of control measures to minimise risk. Under the transitional and savings provisions of the HSWA 2015, occupational noise criteria is defined in Regulation 11 of the Health and Safety in Employment Regulations 1995. At some stage this old regulation will be replaced with a modern fit-for-purpose version.

Civil Aviation Act 1990

The Civil Aviation Act 1990, section 29B 'Rules for noise abatement purposes', states that without limiting the power conferred by section 28, the Minister may make ordinary rules prescribing flight rules, flight paths, altitude restrictions, and operating procedures for the purposes of noise abatement in the vicinity of aerodromes. Rule 97 'Nuisance, trespass, and responsibility for damage' states no action for nuisance may be brought in respect of the noise or vibration caused by aircraft or aircraft engines on an aerodrome, if the noise or vibration is of a kind specified in any rules made under section 28 (powers of Minster to make ordinary rules) or section 29 (rules relating to safety and security) or section 30 (rules relating to general mattes), so long as the provisions of the rules are duly complied with.

Civil Aviation Authority (CAA)

The minimum acceptable heights for flying are laid out in a group of rules called 'Part 91' by the Civil Aviation Authority (CAA). Briefly stated, the minimum height an aircraft is allowed to fly over a city, town, or settlement, is 1000 feet (about 305 m) above the highest obstacle, except when taking off or landing. Generally, 1000 ft is the height at which aircraft are flown within the circuit of an aerodrome. The minimum height over any other area is 500 feet (about 152 m). There are exceptions, such as aircraft flying within a low flying training area, in agricultural aircraft operations, during emergencies. There are also situations where low level flying is allowed with the correct permits being granted examples include a spa pool being placed into the bank of a residential section where a vehicle access does not allow delivery, such as a hilly site. People complain about noise produced by an aircraft, but the flight is, in fact, legal. That means the aircraft is flying at or above the minimum allowable height as noted above with respect to "Low flying". Some airports such as Auckland, Wellington, and Paraparaumu airports have noise abatement procedures.

Helicopter frost protection

From September through to November, (or even early December) helicopters are used for frost protection at some vineyards in New Zealand. This can cause concern about safety and noise for neighbours. These operations, however, are normal under the Civil Aviation Rules. Frost protection operations can be carried out for hire or reward under Part 91 of the Civil Aviation Rules. Pilots engaging in frost protection must hold a Commercial Pilot License, Helicopter, and a current night rating. Any related flights with passengers on board, such as reconnaissance flights to survey vineyards, must be done by the holder of a Part 119 Air Operator Certificate. The New Zealand Helicopter Association (NZHA) has published a standard operating procedure for Aerial Frost fighting Operations which provides guidance on managing risks.

Dog Noise: The Dog Control Act 1996 and the Dog Control Amendment Act 2003

The Dog Control Act 1996 and the Dog Control Amendment Act 2003 requires dog owners dog owners, or persons who have dogs in their care such as the kennel operators, are required to take all reasonable steps to ensure that the dog do not cause a nuisance to any other person, whether by persistent and loud barking or howling. Section 55 of the Act requires owners to ensure there do does not cause a nuisance by persistent and loud barking, howling' thus again owners or persons responsible for the care of dogs in the owner's absence are required to manage their dog from persistent barking. Councils will also have their own dog policy and by-laws which give legal powers to enforce policy such as ensuring dog related activity protects the public from nuisance including noise. Under s.54 of the Dog Control Act 1996, owners must ensure their dog receives proper care and attention. This means adequate food, water, shelter, and exercise, as well as ensuring they are adequately looked after by their owners so as to not persistent barking. Ongoing issues such as persistent barking should be reported to council.

Sale and Supply of Alcohol Act 2012

The Sale and Supply of Alcohol Act 2021 makes reference to noise and amenity value as well as its effects from the sale and supply of alcohol. Specifically, Section 105(1)(h) 'criteria for issues of licenses' states that when deciding whether to issue a licence the licensing authority or the licensing commitment must have regard to whether the amenity and good order of the locality would be likely to be reduced, to more than a minor extent, by the effects of the issue of the licence. This review includes amenity value from noise effects.

Section 106(1) specifically makes reference to Section 105(1)(h)(a)(i) (ii) stating in forming the opinion on amenity the ***'current and possible future noise levels'*** as well as current and possible '***future levels of nuisance***' should be considered. Section 106(2) also requires review of current and future noise levels.

Ministry for the Environment (Mfe) - National Environmental Standards under the Resource Management Act 1991

The Government has introduced national planning and environmental standards. The purpose of the national environmental and planning standards is to improve consistency in plan and policy statement structure, format and content. Their development is enabled by s.58B to s.58J of the RMA. Every local authority and consent authority must observe national environmental standards and must enforce the observance of national environmental standards to the extent their powers enable them to do so.

Noise and Vibration Metrics Standard 2019

The Ministry for the Environment, ***2J Noise and Vibration Metrics Standard 2019 – Recommendations on Submissions Report for the first set of National Planning Standards*** document forms part of the suite of recommendations on submissions reports prepared for the National Planning Standards. This report is one of 14 recommendations on submission reports that addresses submissions received between June and August 2018 on the draft first set of planning standards. It provides recommendations specifically on the Noise and Vibration Metrics Standard. Section 1.6 of the document includes a host of recommendations.

National Environmental Standards for Telecommunication Facilities

National Environmental Standards (NES) can be made under s.43 and s.44 of the RMA. The Resource Management (National Environmental Standards for Telecommunication Facilities) Regulations 2016 (NES-TF 2016) replace certain existing rules in district plans and bylaws that affect the activities of telecommunications operators. According to the NES-TF 2016: Users' Guide, this does not mean the that activities not permitted by the NES are prohibited. It simply means that in some cases resource consents will need to be applied for, and these applications will be assessed against the provisions of the relevant operative district plan. Thus, any NES needs to be read in conjunction with rules in a plan because some rules will still be applicable. Complying with the NES alone may not be sufficient. Where an activity cannot meet the permitted activity criteria in the NES, it will continue to be managed by the existing rules in the relevant district plan. Section 3.6 Clause 9 of NES-TF 2016 refers to the noise emissions from the cabinets and the way that noise is measured. To ensure consistency, the relevant New Zealand standard (NZS 6801: 2008) for noise measurement must be met. Levels of noise have been taken from the reasonably accepted definitions nationwide of 'daytime' and 'night-time' hours. The maximum noise level stipulated in the regulations is 50 dB $L_{Aeq(5min)}$ during the day (7 am and 10 pm), reducing to 40 dB $L_{Aeq(5\ min)}$ at night (between 10 pm and 7 am), with that level having an additional control of 65 dB $L_{AFmax.}$

KiwiRail

KiwiRail Holdings Limited (kiwiRail) is a New Zealand state-owned enterprise responsible for rail operations in New Zealand. Noise emitted from trains (other than at a station or in yards) are specifically excluded from the excessive noise provisions of the RMA, s.326(1)(c). Other exclusions include vehicles on a road or aircraft operating (during or immediately before or after flight). Unlike other transportation methods such as road and air, rail noise is not covered by any existing New Zealand standard. Trains produce noise from the engine and track interface, for example friction via metal on metal will cause a train entering or leaving a curve on the track or passing over a joint in the rail to make a high-pitched 'whine'. Other causes include loose joints in the rail, the condition of the rail and the condition of a train's wheels. Although rail noise is exempt under the RMA, KiwiRail on their web page encourage people to get in contract so they can investigate any potential issues. Maintenance and operations along the rail corridor occur frequently and generate noise. Generally, railway corridors have designations under the District Plan. In most cases District Plans would have railway activities and railway corridors as a designation.

The issues relating to railways and train-based noise are generally for noise from 'reverse sensitivity' issues such as new dwellings being located close to existing main trunk rail lines. KiwiRail undertakes similar procedures to NZTA in that they request District Plan rules and resource consent conditions for acoustic insulation for noise sensitive sites near railway corridors or railway lines be adopted. Commonly adopted criteria set by KiwiRail for reverse sensitivity often relate to setting indoor sound levels for example a design sound level of 35 dB $L_{Aeq(1\ h)}$ for bedrooms or 40 dB $L_{Aeq(1\ h)}$ for other habitable spaces.

The KiwiRail website states that *"We (KiwiRail) work hard to minimise the impacts of our operations, including noise and vibration. We do this by inspecting our tracks, locomotive and wagons regularly and maintaining them in good condition so that train wheels can move over our tracks as safely and smoothly as possible. We are continuing to invest in the network to update our infrastructure and rolling stock and using new technology to ensure trains run smoothly".*

New Dates Confirmed

All current delegates have been contacted to transfer their registrations to the new dates. If you have any questions about your registration, please email **tracy@on-cue.co.nz**

A waitlist is available for anyone who DID NOT register for the February conference, but would be interested in registering for the June dates – please register your interest through the conference website:

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With regard to noise at railway crossings, KiwiRail have installed "Quiet Bells" adjacent to noise sensitive sites. The KiwiRail website states *"In some situations where local residents consider level crossing bells a nuisance, we are now installing electronic bells. These bells reduce the sound level from the normal level of between 85 and 105 dBA (A-weighted decibels) to 75 dBA, the internationally accepted safety standards for 'quiet' level crossing bells. In addition, while these electronic bells radiate sound in all directions, the sound is more 'localised' than traditional electro-mechanical bells, meaning it does not travel so widely. There are currently 70 crossings on the KiwiRail network with quiet bells".*

Waka Kotahi - NZ Transport Agency (NZTA)

Waka Kotahi, the New Zealand Transport Agency (NZTA), is a New Zealand Crown entity tasked among other things to administer the New Zealand state highway network. Waka Kotahi has obligations under the RMA and the Land Transport Management Act to manage noise and vibration from the state highway network. There are no National Environmental Standards, or other mandatory regulations, prescribing how the Transport Agency must meet these obligations. However, there is *New Zealand Standard, NZS 6806:2010 Acoustics - Traffic Noise from New or Altered Roads.* This standard does not apply to existing roads and only applies to state highways. Waka Kotahi has developed its own set of policies and guidelines which includes noise and vibration as well as reverse sensitivity. As with most large government organisations such as KiwiRail and Waka Kotahi, noise is managed through ongoing good practice road maintenance and improvement activities and planned works. In most cases District Plans would have transport corridors (State Highways) as a designation.

New Zealand Acoustic Standards

A 'New Zealand Standard' means a standard promulgated by the Council as a New Zealand Standard under the Standards Act 1988. In essence, Standards are documents that provide requirements, specifications, and guidelines or benchmarks that, when applied correctly; promote consistency to ensure an agreed way of doing something. For example, the standardised methods of measuring and assessing sound. Standards New Zealand has published fifteen versions of New Zealand Standards on the measurement and assessment of environmental noise from various sound sources, including the general acoustic standards. Several the New Zealand Standards are referenced across various District and regional plans, including provisional standards and reference to older standards which have been superseded. The most recent versions of the relevant acoustic Standards should be referenced in the District Plan, as Part 3 of the RMA sets out requirements for the incorporation of documents by reference in District Plans. This section states that all material incorporated by reference in a Plan has legal effect as part of that Plan. Information included by reference that expires or is revoked only ceases to have legal effect if the Plan is changed in accordance with Part 1 of Schedule 1. This means that even if the standards referred to in the Plan are superseded by new standards, a Plan change would be required to use of the new standards in resource consent applications. It would be considered inconsistent with best practice and current NZ acoustic standards and is therefore considered to be inappropriate not to adopt the latest standards in any updated District Plan amendments.

There is a total of eight current environmental standards for the general measurement and assessment of noise as well as assessment of noise from wind turbines, airports, heliports and roads. The current New Zealand Standards for environmental noise are summarised as follows:

- NZS 6801:2008 Acoustics – Measurement of Environmental Sound;
- NZS 6802:2008 Acoustics – Environmental Noise;
- NZS 6803:1999 Acoustics – Construction Noise;
- NZS 6805:1992 Airport Noise Management and Land Use Planning;
- NZS 6806:2010 Acoustics - Traffic Noise from New or Altered Roads;
- NZS 6807:1994 Acoustics – Noise Management and Landuse Planning for Helicopter Landing Areas;
- NZS 6808:2010 Acoustics – Wind Farm Noise;
- NZS 6809:1999 Acoustics – Port Noise Management and Land Use Planning.

NZS 6801:2008 and NZS 6802:2008

The most used New Zealand Standards are NZS 6801:2008 Acoustics – Measurement of Environmental Sound and NZS 6802:2008 Acoustics – Environmental Noise, which are used for the day-to-day measurement and assessment of environmental noise. The scope section of NZS 6802:2008 states *"This Standard does not apply to the assessment of sound where the source is within the scope of, and subject to, the application of other New Zealand acoustical Standards".* NZS 6802:2008 should not therefore be applied to sound from road or rail transport, flight operations of fixed or rotary winged aircraft associated with airports or helicopter landing areas, construction, port noise, wind turbine generators, and impulsive sound (such as gunfire and blasting), which requires special techniques that are generally outside the scope of NZS 6802:2008. These noise sources are assessed using the other suit of standards from NZS 6803 through to NZS 6809.

The limits recommended in NZS 6802:2008 are consistent with the guideline values for community noise in specific environments published by the World Health Organization (WHO) in 1999, which states that during the daytime, few people are seriously annoyed by activities with levels below 55 dB $L_{Aeq(16h).}$ The night-time limit recommended should not exceed 45 dB $L_{Aeq(8h)}$ outside dwellings so that people can sleep with windows open for ventilation and achieve the desirable indoor 30 to 35 dB $L_{Aeq(8h)}$ level as a design level to protect against sleep disturbance. A night-time limit of 75 dB L_{Amax} is also recommended within the standard, set for the protection against sleep disturbance and to promote health and amenity.

Construction and maintenance noise: NZS 6803:1999 Acoustics - Construction Noise

In addition to NZS 6801:2008 and NZS 6802:2008, NZS 6803:1999 Acoustics – Construction Noise, is also widely adopted by acoustic engineers and consultants on a day-to-day basis. Most councils nationwide use NZS 6803:1999 as a guide to assess and control temporary noise from construction, in both commercial and residential areas. This Standard covers construction work of limited duration only. Projects such as demolition of a structure, alterations or additions to buildings, road reconstruction or re-alignment are examples of temporary noise sources. These are assessed differently than noise from ongoing activities from a site, such as quarrying, landfill or the ongoing construction of prefabricated buildings or building components. The Standard provides methods for the measurement, assessment, prediction and management of construction noise and should be read and used in conjunction

with NZS 6801 and NZS 6802. Noise from construction projects *generally* cannot comply with the day-to-day permitted operational noise limits set out within District Plans or those recommended in standards such as NZS 6802. Although this may mean that the noise produced is undesirable by some parties, it does not mean that the noise is 'unreasonable' when all the relevant factors, such as the limited duration, time of operation and mitigation measures, are taken into account. In most cases, construction and maintenance noise rules do not apply when the noise is associated with 'normal' residential household and day-to-day residential activities like home handyman work undertaken at reasonable times. However if a new dwelling was being built, NZS 6803:1999 would generally apply.

It's just noise right? So, what is the scale of the problem?

Noise is generally not the most important issue to people. From time-to-time it can upset people, cause annoyance, and disturb sleep a night. However, for most of us, noise pollution is a relatively small issue that we just live with, especially when compared to big issues like climate change. With this backdrop, it is tempting to think of noise as not being a serious health issue as no one dies from noise exposure.

Regardless of who may or may not be affected, noise has and will continue to receive increasing recognition as one of our critical environmental pollution problems, especially as our populations grown and become urbanised into densely pack main centres. The world's population in 2020 was growing at a rate of around 1% per year. The current population is nearly 8 billion persons and estimated to increase by 81 million people by the end of 2021 alone, with the world's population forecast to be near 10 billion by 2050.

New Zealand's population is around 5 million, with approximately 1.5 million people living in Auckland followed by approximately 400,000 persons living in both Wellington and Christchurch, the two next biggest cities. Currently Wellington has a population growth rate of about 0.5% and the Wellington City Council Urban Growth Plan states that the city's projected population growth will result in the need for over 20,000 additional residential dwellings by 2043 (over 700 new homes on average per year). While residential dwellings grow, so does the supporting infrastructure, which ranges from schools and community facilities such as hospitals, through to roading and water infrastructure, all which involves noise being produced one way or another.

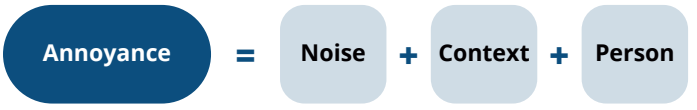
As the world population grows the worldwide scale of noise pollution increases. In 2011 the World Health Organization (WHO) released a report titled ***'Burden of Disease from Environmental Noise'.*** This report analysed environmental noise from planes, trains and vehicles, as well as other city sources, and then looked at links to health conditions such as cardiovascular disease, sleep disturbance, tinnitus, cognitive impairment in children, and annoyance. The report presented data collated from various large-scale epidemiological studies of environmental noise in Western Europe, over a 10-year period. The WHO report found that 1.5 million healthy years of life are lost each year in Europe, due to noise pollution (this figure does not include noise from workplaces). Sleep disturbance makes up 54% of this loss, followed by 39% for noise annoyance and remaining 7% is made up of a range of conditions. The authors of the report concluded that ***'there is overwhelming evidence that exposure to environmental noise has adverse effects on the health of the population'*** and ranked noise from transport sources second among environmental threats to public health, the first being air pollution. Importantly, the WHO report also stated that while many other forms of pollution are decreasing, noise pollution continues to increase.

So, how big is the problem? Using Wellington City as an example, Wellington City Council's call centre took over 5,000 calls in 2020 relating to noise complaints for a range of noise sources including but not limited to traffic, built environment, residential, commercial and construction. This is one in forty (1:40) people based on the population of the Wellington City District. As a rudimentary indicator of the level severity of the noise complaints, 1000 Excessive Noise Direction (END) Notices were issued, representing 20% of the total complaints. Interestingly, this number of people who would be annoyed or affected by noise is much higher, as anecdotally, many people do not complain about the issue and therefore there is no statistics available.

Noise Annoyance and Social Acoustics

It is well established that environmental noise (and vibration) can irritate people, for example by intruding on their daily activities and interferes with peace and enjoyment. This has been recognised and appraised for the past 50 years. Noise annoyance is one of the most common reported adverse health effects of noise, albeit physically or mentally. Annoyance is one of the key factors that leads to formal complaints being received by Councils with respect to noise. In compliance terms it is the authors opinion that *'noise annoyance is a primary indication that noise is a problem, and by itself, noise annoyance means that the quality of life is adversely affected'.* Noise annoyance may be defined as a feeling of *'displeasure, nuisance, disturbance or irritation caused by a specific sound'.*

Noise annoyance may be described at a very basic level by three key components:



The capacity of a noise to induce annoyance for an individual is far more complex than shown in the above diagram and depends upon many acoustic characteristics of sound (including but not limited to) sound pressure level and spectral characteristics (impulses, tones, pitch), number of events, time of day, who controls the noise source, degree of interference, persons sensitivity and many more variables that typically change over time. Annoyance of noise can also turn to frustration and anger and have not only effects on a person mental and physical health but their social behaviour. A person's individual circumstances and preferences also play a key role in noise annoyance.

There are considerable differences in individual reactions to the same noise. To try to quantify annoyance, a dose-response relationship for different types of noise sources (specific environments) such as traffic noise (air, road and railway) have been developed. The perception and reaction to sound is complex and as noted, the sound level is only one dimension of the sound character and many other characteristics of the sound will influence the reaction. Furthermore, there may be a difference between the physical characteristics – as they are described by instrumental measurements resulting in numbers and metrics – and the way the sound is perceived by humans.

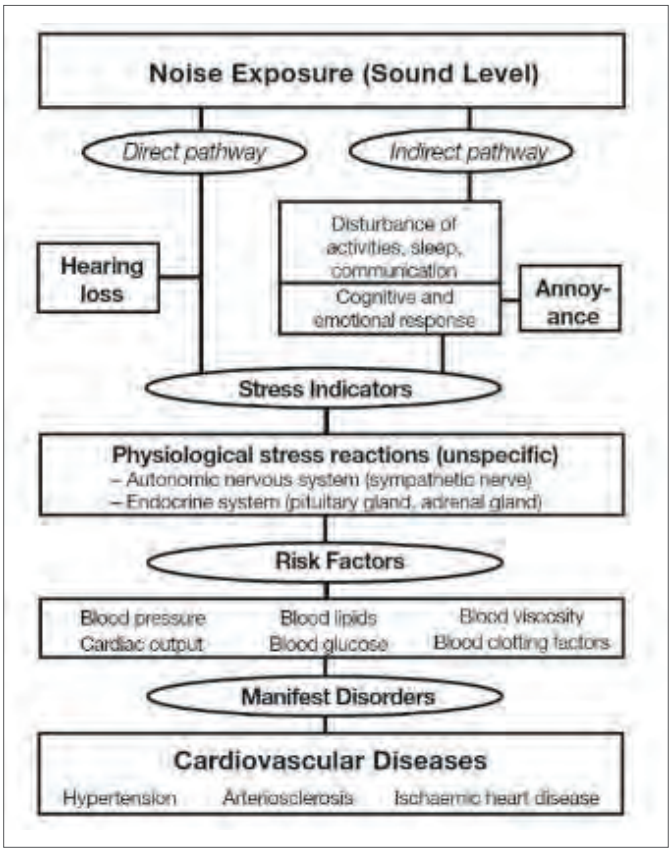


Figure 8 – *Noise Exposure (source: https://www.researchgate.net/figure/Noise-effects-reaction-scheme-Source-Babisch-2002_fig7_51093125)*

Socio-acoustic surveys are the key tool used to measure noise annoyance in communities. The surveys attempt to measure the subjective response of participants to the noise in their community environments. The resulting responses can then be combined with objective measures of noise (noise indicators) to produce a noise-dose response curve. Once the noise-dose curve has been established, it maybe used as a predictor of average (health) response of the population exposed. The curves cannot predict the response of a single individual as they may have a greater or lesser than average sensitivity to the noise source.

The standard, *ISO/TS 15666:2003 Acoustics - Assessment of noise annoyance by means of social and socio-acoustic surveys,* includes details of questions to be asked, response scales, key aspects of conducting the survey, and reporting. Commonly a five-point scale is used with the points defined as: 1. not annoyed; 2. slightly annoyed; 3. moderately annoyed; 4. very annoyed; and 5. extremely annoyed.

Schultz (1978) developed a relationship between the percentage of people choosing the top two descriptors (very annoyed and extremely annoyed), which are combined to produce the term 'highly annoyed'. Schultz used a mixture of several different social surveys that employed different response scales and defined 'highly annoyed' respondents as those respondents whose self-described annoyance fell within the upper 28% of the response scale (roughly under 1/3 of the population).

Schultz's definition of 'percent highly annoyed' (%HA) became the criterion of many environmental noise annoyance studies. The graph below illustrates a sample of EU curves for %HA as a function of L_{den} for aircraft, road and rail noise.

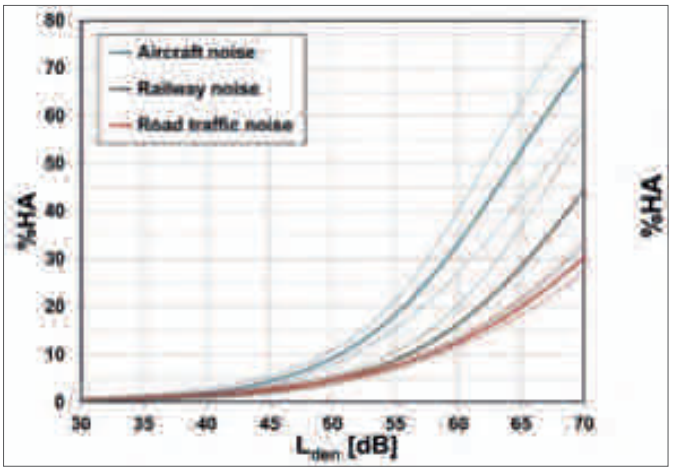


Figure 9 – *Exposure-response curves for the percentage highly annoyed (%HA) by road, rail, and aircraft noise (source: https://www.researchgate.net)*

WHO community noise guidelines and recommendations with respect to noise annoyance

Since 1980, the World Health Organization (WHO) has attempted to address the complex problem of community noise. Health-based guidelines on community noise have served in part as the basis for deriving international noise standards within a framework of noise management worldwide and within New Zealand. Key tools used by WHO include abatement options; models for forecasting and for assessing source control action, setting noise emission standards for existing and planned sources, noise exposure assessment and testing the compliance of noise exposure with noise emission standards. In 1992, the WHO Regional Office for Europe convened a task force meeting which set up guidelines for 'Community Noise'. A preliminary publication of the Karolinska Institute, Stockholm, on behalf of WHO, appeared in 1995 (WHO 1995). This publication served as the basis for the globally applicable 'Guidelines for Community Noise 1999' (GCN 1999). The last decade has seen WHO Europe produced a steady stream of new guidelines, including the 'Night Noise Guidelines for Europe 2009' (NNGfE 2009) and most recently, the 'Environmental Noise Guidelines for the European Region 2018' (ENGER 2018).

The key purpose of ENGfER 2018 is the same as all past WHO noise guidelines, that being to provide recommendations for protecting human health from exposure to environmental noise originating from various sources including transportation (road traffic, railway and aircraft) noise, wind turbine noise and leisure noise. In the ENGfER 2018 guidelines, *"annoyance"* refers to long-term noise annoyance.

The importance of considering both annoyance and other effects, such as adverse health outcomes, is supported by evidence indicating that they may be part of the causal pathway of noise-induced diseases. The ENGfER 2018 do not include recommendations about any kind of multiple exposures. That's is, the guidelines refer to traffic noise or railway noise only, but not the combined effect. The guidelines focus on information on the exposure–response relationships between exposure to environmental noise from different noise sources and the proportion of people affected by certain health outcomes, as well as interventions that are considered efficient in reducing exposure to environmental noise and related health outcomes. The guideline values are evidence-based public health-oriented recommendations. Specific recommendations have been formulated in the guidelines for road traffic noise, railway noise, aircraft noise, wind turbine noise and leisure noise.

Recommendations are rated as either *strong or conditional.* ENGfER 2018 GDG recommendations by source are summarized as follows:

Road	Rail	Air	Wind Turbines	Leisure
L_{den} < 53 dB	L_{den} < 54 dB	L_{den} < 45 dB	L_{den} < 45 dB	$L_{Aeq,24\ hour}$ < 70 dB
L_{night} < 45 dB	L_{den} < 44 dB	L_{night} < 40 dB	L_{Aeq} = 40 dB	Average exposure / single-event exposures
Strong	Strong	Strong	Conditional	Strong/Conditional

Strong recommendation can be adopted as policy in most situations. The guideline is based on the confidence that the desirable effects of adherence to the recommendation outweigh the undesirable consequences. The quality of evidence for a net benefit – combined with information about the values, preferences and resources – inform this recommendation, which should be implemented in most circumstances.

Conditional recommendation requires a policy-making process with substantial debate and involvement of various stakeholders. There is less certainty of its efficacy owing to lower quality of evidence of a net benefit, opposing values and preferences of individuals and populations affected or the high resource implications of the recommendation, meaning there may be circumstances or settings in which it will not apply.

Vulnerable groups

Standards of acceptable levels of environmental noise are essentially derived from observations and studies on the effects of noise on "normal" or "average" populations. Vulnerable groups of people, including the following, can be underrepresented in such studies:

- People with decreased personal abilities, who are more susceptible to physical and emotional stresses, such as the elderly or those with disability;
- People with particular chronic diseases or ongoing medical issues;
- Shift workers;
- People who are simply more noise-sensitive;
- People dealing with complex cognitive tasks, such as reading acquisition; and
- Unborn and newly born babies, and young children.

It is for this reason that noise rules and guidelines designed to protect against the adverse effects of noise on people should include and cater for both the young and old, as well as typical residences which are traditionally the places where people live, rest and relax.Hospitals, aged-care facilities, pre-schools, schools, universities, and polytechnics, fall within the definition of noise sensitive "residential" land uses identified for protection within NZS 6802:2008 *Acoustics – Assessment of Environmental Noise.* The issue of adjusting downwards (lowering) district-wide noise limits to cater for the most vulnerable groups in the population has been investigated. In setting the balance for sustainable management of noise, there is a need to consider the response of the 'average' person to noise. To impose a restrictive standard in order that the most vulnerable groups are protected would impose costs and restrictions on people's legitimate economic, cultural and social endeavours, who would otherwise be adequately protected at levels suited to the majority of the population. In addition, NZS 6802:2008 warns against setting low noise limits which cannot be properly measured and assessed within the context of existing ambient sound levels (NZS 6802:2008 clause 8.6.3). In the New Zealand Environment Court, 'noise nuisance' is judged from the viewpoint of the average person's sensitivity to noise. For the above reasons, no additional allowance is made within the recommended noise limits set out in this report for people who are additionally sensitive to noise. This does not mean site specific noise limits may be set within a resource consent situation, due to the nature of the sound, or the extra quiet ambient noise climate. Applying a lower than normal noise limit would be warranted, for example, the "high amenity" noise limit described within NZS 6806:2010 *Acoustics – Wind Farm Noise.*

Looking to the future: Repeal and replacement of the Resource Management Act

When the RMA was introduced in 1991 it contained several valuable principles which it is important to retain. One of these was the principle of sustainability to ensure the needs of future generations are taken into account. However, in the ensuing period of nearly 30 years, the Act has been subjected to numerous amendments designed to improve its effectiveness, but which have instead resulted in a doubling of its original length and an unduly complex patchwork of provisions, around 19 to date. The Government and the Environment Minister David Parker (Labour Government) commissioned a comprehensive review of New Zealand's resource management system including the Resource Management Act. The output of the review and extensive consultation by an independent expert panel, was the drafting of a report entitled ***'New Directions for Resource Management in New Zealand'.*** The report recommends rather than attempt to amend the Act, the Panel has concluded that the Act should be repealed and replaced with new three separate pieces of legislation.

Natural and Built Environments Act (NBEA)

The proposed Natural and Built Environments Act (NBA) will be the primary replacement for the RMA. It will provide a greater focus on positive outcomes for both natural and built environments, rather than only controlling effects. It will ensure that the use, development and protection of resources only occurs within prescribed environmental limits. Other key changes include stronger national direction, one single combined plan per region, and a more efficient resource consent process.

Strategic Planning Act (SPA)

The proposed Strategic Planning Act (SPA) will require strategic plans that set long-term goals for each region (both land and coastal areas), integrating land use planning, environmental regulation, infrastructure provision, climate change and natural hazard risk management. The SPA will also integrate functions across the NBEA and related statutes.

Climate Change Adaptation Act (CAA)

The proposed Climate Change Adaptation Act (CAA) will address complex issues associated with managed retreat, funding and financing adaptation. The 'New Directions for Resource Management in New Zealand' report states that the new acts would have a substantially different approach from the RMA but would also incorporate some of the key principles of the previous legislation which remain appropriate. The 'New Directions for Resource Management in

New Zealand' report also states one criticism of the purpose of the RMA was its focus on managing the adverse effects of activities on the environment rather than promoting more positive outcomes. Chapter 13 *'Compliance, Monitoring and Enforcement'* of the report, makes a host of recommendations, these include recommendations that the offence and penalties regime should be strengthened, including by increasing the maximum financial penalties, deterring offending by extending the circumstances in which commercial gain may be taken into account in sentencing, enabling creative sentencing options and developing new Solicitor-General prosecution guidelines for environmental cases. A number of new compliance, monitoring and enforcement measures are recommended to be introduced, and existing measures improved, including by enabling regulators to recover costs associated with permitted activity and unauthorised activity monitoring.

The report covers a wide range of topics with reference to noise, including (but not limited to) specifying affected parties (page 96, para. 136), more need for sound insulation to protect mental health and wellbeing, through to enforcement and monitoring. The report is extensive and states (page 197, para 24) that with regard to gaps in national direction submissions, including noise controls and assessing cumulative effects. Paragraph 74 (page 206) states *"technical national planning standard provisions could include matters such as the approach to measuring noise or light spill. We believe these could replace the practice of individual local authorities having to go through a full plan preparation or plan change to incorporate material that exists in New Zealand Standards such as NZS 6802:2008 (which relates to noise) or NZS 4282:2019 (which relates to lighting). As we discuss in chapter 8, national planning standards could provide guidance on evaluation methods in the assessment of policies and plans".*

With regard to monitoring and enforcement, the report states (page 269, para 46,) that *"consents are usually approved with a number of conditions intended to guide how the activity is carried out"* and that such *"conditions can involve reporting data generated by the activity, such as noise, vibration…, with the ability to modify the activity if any thresholds are breached".* It also says that *"consent conditions should be drafted in a way that is enforceable and the consent authority should have the capacity to monitor them and enforce compliance".* It also noted that *"this is often not the case in practice, with the result that the activity harms the environment in ways that it was supposed to avoid, remedy or mitigate".*

In brief, the revised purpose and principles would establish a system designed to deliver specified positive outcomes for both the natural and built environments. The use and development of resources would be enabled so long as this can be achieved sustainably and within prescribed minimum limits to protect natural resources, such as water, air, soils and natural habitats. The new legislation would also require the setting of targets to achieve ongoing improvement of the quality of both the natural and built environments. The Cabinet is responsible for making all decisions about how to progress the report and recommendations. Cabinet has indicated that a broad, open process of public consultation will follow its consideration of our proposals. Wide engagement with New Zealanders and stakeholders is anticipated for the introduction of any new legislation.

Publications

The review is based on information source from (but not limited to the following) documents:

- Resource Management (infringement offences) Regulations 1999
- Resource Management Act 1991 and amendments such as Resource Management Amendments Act 2020
- COVID-19 Recovery (Fast Track Consenting) Act 2020
- Reserves Act 1977
- Reserves (Infringement Offences) Regulations 2019
- Traffic Regulations 1976
- Land Transport (Road User) Rule 2004
- Land Transport Rule: Vehicle Equipment Amendment 2007
- The Building Act 2004
- The Building Code
- Building Regulations 1992
- Residential Tenancies Act 1996
- Health and Safety at Work Act 2015
- Civil Aviation Act 1990
- The Dog Control Act 1996
- Dog Control Amendment Act 2003
- Sale & Supply Alcohol Act 2012
- Criminal Procedure Act 2011
- Policing Act 2008
- Ministry for the Environment National Environmental Standards under the Resource Management
- New Zealand Acoustic Standards
- World Health Organization Guidelines for Noise
- Solicitor General Prosecution Guidelines 2003

Qualifications and limitations

This paper review is intended as a guide only; it is not possible nor is it intended to cover all areas of environmental noise law in New Zealand. The paper is not a surrogate for any expert advice from any expert. The reader and users should understand as the information within this review does not attempt to cover all areas and applications of environmental noise law there are a host of omissions. While all care has been taken in the preparation of this work and the information which is included is believed to be correct at the time of preparation, users of this paper should apply discretion and rely on their own judgments regarding the use of the above information. The reader should obtain their own independent professional advice. Any content, views and opinions provided in this paper belong to the authors and do not reflect the views of their employers. As legislation, guidelines and standards are currently evolving and changing we recommend that the reader review the source material with respect to references made to sections of acts, as these may change or be updated from when the paper was prepared.

About the authors

Lindsay Hannah has close to 25 years direct experience as a consulting acoustic engineer in New Zealand and overseas. Lindsay holds degrees from Victorian University School of Architecture as well as post graduate qualifications in environmental and building acoustics (including post graduate diploma and master's degree specialising in Acoustics). Lindsay has worked for both small and large international consultancy firms, including as Team Leader in Acoustics for a large multi-national global infrastructure and environment company operating in over 100 countries. Lindsay is a committee member of the New Zealand Acoustic Society and Editor of the societies Journal. Lindsay is currently employed by Wellington City Council as a Specialist Advisor in Acoustic.

Dr Wyatt Page is Associate Professor of Acoustics and Human Health and Deputy Head of the School of Health Sciences at Massey University. Wyatt is a key member of the Environmental Health team at Massey delivering a range of programmes including specialist courses on noise and its effects on human health, and is active in acoustics consultancy. Wyatt is co-principal editor of the New Zealand Acoustics Journal and has served as a committee member of the New Zealand Society. Wyatt's current research interests are diverse and include environmental, occupational and recreational noise exposure, acoustics of teaching spaces, immersive sound, and technology for hyper-instruments.

Matthew Borich is the Manager of Compliance & Advice, City Consenting and Compliance at Wellington City Council a position he has held for over 10 years. Matthew has over 25 years' experience in acoustics and environmental noise having been Wellington City Councils Senior Noise Officer for over 20 years. Matthew holds a Bachelor of Science degree from Victoria University, a Diploma of Public Health Inspection from the Royal Society of Health, London and a Certificate in Acoustics from Hawkesbury, University of Sydney Australia. Matthew has been a member of various New Zealand Standards Committees, including NZS:6802: 2008 Acoustics Environmental Sound and 6801:2008 Acoustics Measurement of Environmental Sound. Matthew is a member of the Wellington Airport Air Noise Management Committee a position he has held for over 20 years.

Whitney Cocking is part of the Wellington City Council Acoustics Team as well as a Compliance Officer at Wellington City Council. Whitney is part of the Compliance & Advice, City Consenting and Compliance at Wellington City Council a position she has held for just under 2 year. Whitney holds a Bachelor of Environmental and Management degree from Lincoln University and is currently completing a specialist paper In Bio-Physical Effects of Noise and Vibration at Massey.

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