

# DISTRICT PLAN REVIEW

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## Topic 11: Noise and Vibration

### Stage 2 Report

## Recommendations For Managing Reverse Sensitivity Effects



**YOUR PLAN OUR FUTURE**  
TIMARU DISTRICT PLAN REVIEW

Prepared For:



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# TIMARU DISTRICT COUNCIL

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### Topic 11: Noise and Vibration – Stage 2 Report

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# TIMARU DISTRICT COUNCIL

# DISTRICT PLAN REVIEW

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## Recommendations For Managing Reverse Sensitivity Effects

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**TIMARU DISTRICT COUNCIL**  
**DISTRICT PLAN REVIEW**  
**Topic 11: Noise and Vibration**  
**Stage 2 Report**

**Recommendations For Managing  
Reverse Sensitivity Noise Effects**

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## 1 Introduction

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

This Stage 2 report focuses on managing noise from key infrastructural assets and includes noise from established commercial or industrial activities, the port, roads and highways, Timaru Airport, Timaru International Raceway, stadium & event centres and community facilities. These are the main sources of noise which affect multiple sites which in many cases, includes activities sensitive noise are carried out (e.g. residential dwellings, health care or educational facilities are established).

This report recommends a generalised way forward for the Council to explore improvements to reverse sensitivity noise provisions, based on preliminary discussions with the stakeholders, the provisions of the current operative Timaru District Plan, the relevant NZ Standards dealing with noise, and *National Planning Standard (Draft 2018)* and the single applicable *National Environmental Standard*.

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## 2 Noise Sources

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AS part of Stage 2 investigations, engagement and preliminary assessments have been carried in relation to potential noise effects associated with the operation of the following important infrastructural assets located within the Timaru district;

- Timaru airport
- Timaru International Motor Raceway
- Commercial or Industrial Zones
- Fonterra
- Roads and highways
- Stadiums and Events Centres
- Prime Port



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The aim of this Stage 2 report is to recommend district planning methods and techniques to address potential “Reverse Sensitivity” effects of noise (and, where relevant, effects of vibration) which are potentially deleterious to the established operations of the above important activities, assets and facilities. The protection against adverse reverse sensitivity effects is in addition and parallel to, the district plan’s more direct function of managing effects of noise on people and communities.

Stage 2 has involved consultation with key stakeholders (see APPENDIX A attached) coupled with a review of district and regional planning provisions in place under the *Resource Management Act 1991*. This review has identified specific planning measures that, if implemented, will augment existing reverse sensitivity measures to further protect the efficient and effective operation of regionally significant infrastructure. This is achieved by avoiding or reducing operational constraints which can be created when inappropriate noise-sensitive (n]and vibration-sensitive) activities establish on sites that are (or may be) affected by significant noise and /or vibration effects associated with the adjacent infrastructure asset or facility. These type of district plan enhancements are now included in most district plans to improve the way district plans deal with regionally and nationally significant infrastructure.

The importance of protecting infrastructure and facilities from inappropriate development on adjacent sites is already signalled within some existing provisions of the Timaru District plan and within the recommendations of relevant NZ Standards for transport noise, within the Canterbury Regional Plan (2013 Policy Statement) and the Regional Coastal Environment Plan. TDC had identified the issue of strengthening reverse sensitivity measures related to noise and vibration effects within its preliminary review of matters requiring to be addressed within its processes to produce a new proposed district plan<sup>1</sup>.

The overall aim is to recommend, in generic terms, the best way forward to ensure the Proposed District Plan contains a robust set of ‘reverse sensitivity’ noise provisions that are consistent with the principles of sustainable management.

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## 3 Plans, Standards & Guidelines

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The following guidance has been considered within the investigations carried out and have been referred to (where appropriate) within the conclusions and recommendations set out below in this report;

### 3.1 Operative District Plan

We have consulted with parties identified in Appendix A (attached). A key task has been to establish the current situation and future aspirations of Council set out within the following documents;

- Operative Timaru District Plan and maps [March 2005];
- Timaru District Council – District Plan Review. Topic 11: *Noise Discussion Document*, November 2016;

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<sup>1</sup> Timaru District Plan Review- Discussion Document Summary, Topic 11: Noise. November 2016.



- National Planning Standards
- National Environmental Standards
- Growth Management Strategy (*Timaru District 2045 Your Plan Our Future- Timaru District Plan Review Land Use Plan*).

The current operative District Plan uses a mixed approach to managing the effects of noise, with a stand-alone chapter (Part B Chapter 12) that addresses district-wide noise matters. Specific noise emission requirements (where they exist) are set out in the zone provisions based around permitted activity standards, setting noise limit that provide for a variable quality of acoustic environment appropriate to different parts of the District.

For the reasons set out below, we consider the operative Plan is deficient in terms of providing adequate reverse sensitivity protection (in terms of noise) for major infrastructural assets and facilities found in the district. Perhaps most importantly, the operative District Plan is out of step with advances made for managing reverse sensitivity noise effects found within other district plan in New Zealand.

The Operative District Plan noise provisions do offer some reverse sensitivity protection in key areas (e.g. land use planning controls to address noise from the raceway and airport) however it is considered important to update and upgrade these provisions to ensure district plan land use planning controls remain fit-for-purpose and appropriate going forward.

### 3.2 Regional Coastal Environment Plan

The Timaru District Plan generally needs to follow planning controls prepared at the regional and national level.

The Canterbury Regional Policy Statement provides an overview of the resource management issues in the Canterbury region and specifically targets a well-designed and more sustainable urban patterns including the avoidance, remediation or mitigation of reverse sensitivity effects. Policy 5.3.2(1) requires management of land use activities to avoid the potential for adverse effects. This includes the need to avoid the encroachment of sensitive activities into areas that may result in reverse sensitivity effects on established regionally significant infrastructure. This Stage 2 report is intended to address this very issue.

The regional plan emphasises managing the effects of land use activities on infrastructure, including avoiding activities that have the potential to limit the efficient and effective, provision, operation, maintenance or upgrade of strategic infrastructure including freight hubs. Objectives 6.2.1, 6.2.2, 6.2.3, 6.2.4, 6.2.5, 6.2.6 of the regional plan state that territorial authorities *will* include “...objectives, policies and rules in district plans to manage reverse sensitivity effects between strategic infrastructure and subdivision, use and development, including for residential and rural-residential activities”.

The generic recommendations below, informed by feedback received from stakeholders, requires improved and updated reverse sensitivity noise-related provisions to reflect these regional requirements.



### 3.3 New Zealand Standards

The following New Zealand standards set out recommendations that deal with controlling the effects of noise effects associated with the operation of significant infrastructural assets which are relevant to the current review:

NZS 6805:1992 *Airport Noise Management and Land Use Planning*

NZS 6806:2010 *Acoustics – Road Traffic Noise – New and Altered Roads*

NZS 6809:1999 *Acoustics – Port Noise Management and Land Use Planning*

Recommendations set out within these Standards are considered to generally represent ‘best practice’ in New Zealand, however there are sometimes valid resource management reasons for not adopting these Standards.

The recommendations of the above Standards provide guidance on methods that can be used to control the amount of noise emission, as well as recommending land use planning methods to mitigate against potential reverse sensitivity noise effects where inappropriate new sensitive land uses may establish within noise affected areas.

These standards are referred to within the discussion and recommendations set out below.

### 3.4 National Environmental Standards

‘National Environmental Standards’ [NES] are regulations issued under Sections 43 and 44 of the RMA and apply nationally providing methodologies or requirements on environmental matters, although they may prescribe technical standards where appropriate.

Both New Zealand Standards and NES have the common goal of providing a consistent approach and process throughout New Zealand – however there is a key difference. Under an NES, each regional, city or district council must enforce the same standard without variation, whereas New Zealand Standards can be adopted in whole or in part, and can vary between regulators.

At the time of preparing this chapter there was one NES relating to noise but in the specific context of *telecommunications facilities* NZS 6801:2008 and NZS 6802:2008 are cited in Clause 9[4] of the Resource Management Act [National Environmental Standards for Telecommunication Facilities] Regulations 2008.

A rule has been recommended within the Stage 1 report which implements the NES within the proposed Timaru District Plan by establishing limits on noise arising from the operation of roadside telecommunications facilities and cabinets and received in the local environment.

### 3.5 National Planning Standards

In July 2018 Ministry for the Environment released the *Draft National Planning Standards*<sup>2</sup> which

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<sup>2</sup> Ministry for the Environment. 2018. *Draft National Planning Standards*. Wellington: Ministry for the Environment. ISBN: 978-1-98-852562-4 (online) Publication number: ME 1364



sets 18 draft national planning standards relevant to the various resource management policy statements and plans found in New Zealand. In relation to “District Plans” this Standard places requirements on any new district plan to adhere to a specified (generic) District Plan Structure (S-DP).

Noise is referred to under the heading of “District-wide Matters” within Section S-DWM “Draft District Wide Matters Standard”. The requirement of this Standard include requiring district plans to set out;

- Noise limits or “thresholds” for each zone – these are the usual district plan decibel limits
- Where and what kind of sound insulation is required for sensitive activities – these are specified in district rules alongside the decibel limits
- Limits around where noise sensitive activities can be located, relative to noise generating activities - this is the focus of this Stage 2 report.

Table 30 (page 92) of the draft Planning Standard states rules to manage an emission of noise must be consistent with the recommendations of the relevant New Zealand Standards. This is identified as the approach to follow for the Timaru Proposed District Plan.

### 3.6 Acoustic Insulation & Ventilation Of Habitable Rooms

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

Typically the aim is to achieve no more than LAeq 30 to 35 dB indoors during night time within rooms used for sleeping. Indoor sound levels of 35 to 45 dB are generally acceptable within habitable rooms not used for sleeping. Methods for specifying acoustic insulation for habitable rooms within district plans are not advised to be specified by simply quoting an indoor LAeq sound limit (as per district plan controls rules outdoor noise). This is because rules based on LAeq levels measured indoors is technically deficient and delivers imprecise results<sup>3</sup>. Rules based on indoor LAeq limits do not consistently ensure the room is as quiet or acceptable as the indoor dBA level may suggest. Indoor LAeq-type insulation rules hampers building designers and architects in their design of sensitive rooms (as no information is provided within the district plan rule on the quantity of outdoor sound against which the building envelope must act acoustically, in order to adequately

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<sup>3</sup> Basically, the problem is that using A-weighted overall Leq sound limit as a means of specifying a suitable standard of acoustic insulation of buildings does require building claddings, glazing, wall linings, etc to achieve any specific degree of acoustic protection. Buildings are generally ineffective in reducing low frequency sound found at significant levels in outdoor areas. Because the A-frequency weighting sound level is heavily weighted towards sound occurring in the mid- and high-frequency range (which matches human hearing), exterior walls or other building elements only have to be effective at reducing sound occurring within the mid-frequency range to satisfy minimum insulation rules based on not exceeding an indoor LAeq sound limit.





protect indoor spaces).

Rather than specifying acoustic insulation using the sound level received indoors (due to outdoor sources), international best practice for specifying minimum acoustic insulation standards in District Plans is termed *Standardised Level Difference* or *DnT,w* (AS/NZS 1276.1:1999 *Acoustics - Rating of sound insulation in buildings and of building elements: Airborne sound insulation*). This method entails specifying the minimum sound isolation level of the external building envelope (of habitable rooms) which is set at a level which ensures indoor LAeq sound (due to outdoor sources) will be acceptable for sensitive activities such as sleeping. This method for specifying the acoustic rating of the external building envelope has been adopted with many District Plans in recent times in place of the now-outmoded “indoor decibel method” for specifying insulation requirements.

The **DnT,w** approach for specifying the acoustic performance of the building envelope avoids commonly experienced difficulties in determining how much sound reduction the building envelope should achieve and can be easily verified and tested in the field (verifying compliance being a major problem within indoor maximum decibel limit type insulation standards). Adopting the DnT,w approach provides designers and architects with precise guidance on how well the building should protect against external sound, something lacking from the indoor decibel method.

Importantly for Council, the DnT,w approach can be checked in the field following the relevant Standards.

Ventilation is an important matter to consider at the time of deciding upon acoustic insulation standards. Indoor sound targets will not be achieved in rooms with open windows whether they are acoustically insulated or not. Insulation rules therefore need to also require an alternative form fresh air ventilation (other than openable windows or doors) within any room to which acoustic insulation requirements apply.

**RECOMMENDATION:**

To enhance the management of reverse sensitivity noise effects it is recommended district policies, objectives and rules be developed to require any new or altered habitable room within buildings housing activities sensitive to noise (where these buildings are located within defined noise-affected areas, as described below).

Current land use planning provisions of the operative district plan are considered to provide insufficient protection to important infrastrucrual assets to the district and region, and should be developed and enhanced to deliver a higher standard of reverse sensitivity noise protection (which is.

To enhance sustainability within the proposed plan, best practice acoustic insulation standards are recommended to be applied to identified categories of habitable rooms based on achieving **minimum acoustic insulation standards** (with an accompanying ventilation requirement) for all new or altered buildings housing activities sensitive to noise locating in defined within the following noise-affected areas:

....see over



1. Within any site in Commercial and Industrial zones.
2. Within any site significantly affected by traffic noise (justified in terms of daily traffic volume & vehicle speed) for the following road categories:
  - State highways
  - Arterial roads
  - Regional roads
  - Primary collector roads
3. On any site significantly affected by noise from the adjacent rail corridor due to train movements on the Christchurch to Dunedin section of the South Island Main Trunk Railway and associated sidings.
4. In the case where consent is granted for any building housing an activity sensitive to aircraft noise within the “Airport Noise Boundary” as shown on planning map 22.
5. In the case where consent is granted for any building housing an activity sensitive to noise within the “65dBA L10 Noise Contour for Timaru International Raceway” as shown on planning map 22.

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## 4 Timaru District Plan

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### 4.1 Summary of Existing Noise Provisions – Part B

Part B Chapter 12 of the operative district plan has as its Objective 1 an aim to “*Minimise the situations where there is conflict between noise emissions from land use activities and other more sensitive land uses*”. The principle reason refers to measures to protect regionally significant infrastructure such as the Timaru International Raceway and Richard Pearse Airport, Main South Railway, arterial roads and industrial areas with the specific risk identified as “where more sensitive activities such as nearby residential use could be adversely affected by noise”.

Regarding the port, Chapter 12 indicates the management of noise issues in the Coastal Marine Area is a function of the Canterbury Regional Council but can have an effect on the adjoining land. This issue is explored below in relation to district plan port noise provisions.

Policies set out in Part B Chapter 12 include:

1. *To avoid or mitigate effects of noise on residential uses and other sensitive areas, by limiting noise emissions within residential, rural and natural areas, and by discouraging residential and other sensitive uses from locating close to land zoned or used for noisy activities.*



2. *To provide rules setting noise limits adequate for the protection of community health and welfare while enabling control of reasonable noise emissions from activities.*
3. *To rely on the statutory provisions of the Resource Management Act to address noise problems, where there is no suitable standard laid down by the District Plan or by conditions of a resource consent.*

The *anticipated environmental outcomes* stated in the operative plan include providing “a high degree of separation of incompatible land uses” as well as ensuring the health of people in communities is adequately protected from noise emissions.

We consider the issue of reverse sensitivity has at least been identified, however we have identified areas where protection can be improved and updated to reflect best practice. The results of our review of the Timaru District Plan reverse sensitivity noise provisions are set out in the following discussion and recommendations;

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## 5 Review & Recommendations

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A summary of the district plan provisions relevant to protecting regionally significant infrastructure is provided under the following headings;

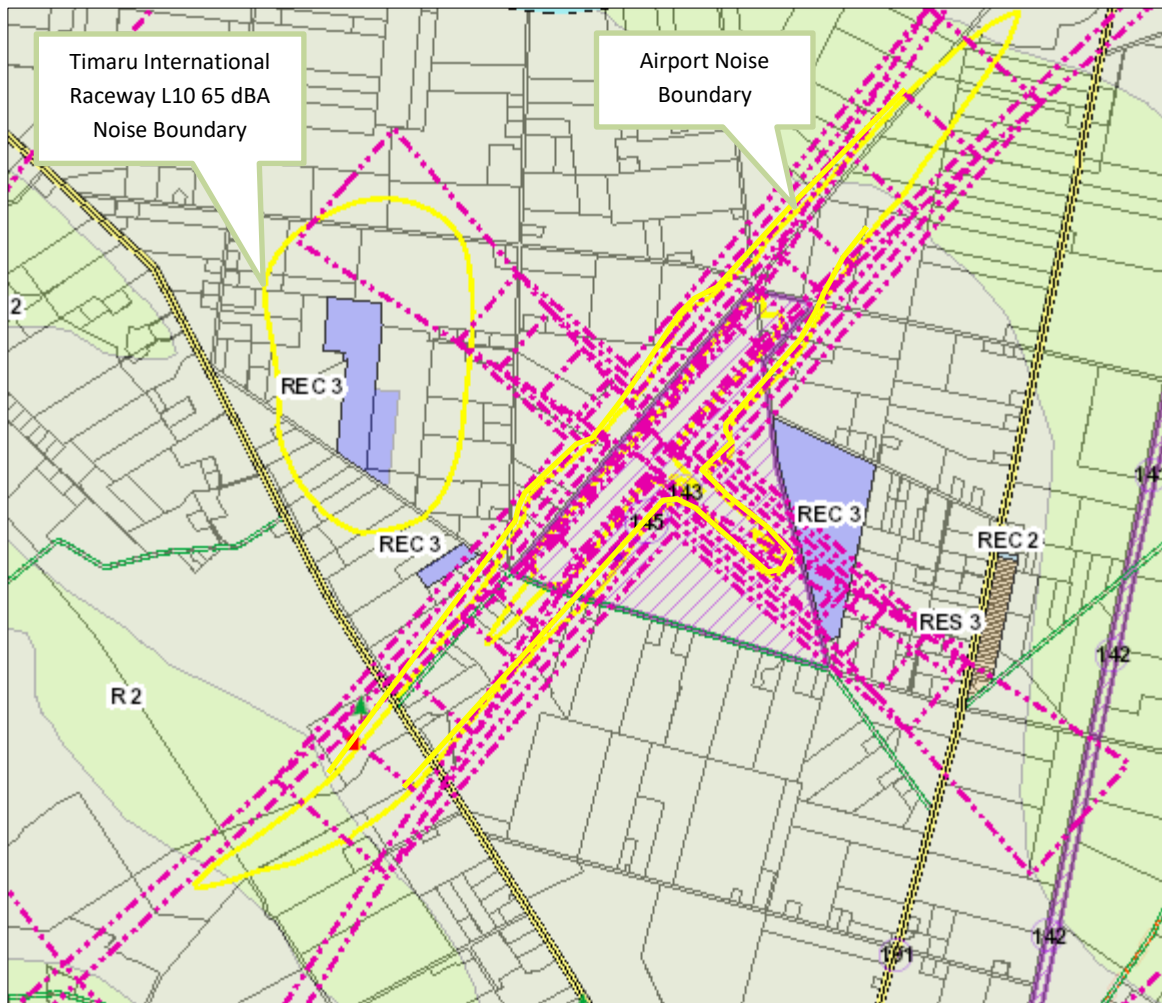
### 5.1 Timaru Airport & Timaru International Raceway

Existing reverse sensitivity provisions are set out within the Rural Zone provisions of the operative district Plan as a means of protecting the operation of Richard Pearse Airport and Timaru International Raceway. The relevant controls place limitations on Rural Living Site subdivisions and residential uses on the Levels Plains in the immediate vicinity of the Richard Pearse Airport and Timaru International Raceway. The existing plan has an explicitly stated aim to manage the adverse noise effects from those facilities (see Issue 1.4.1 in the Rural Zone provisions, Policy 5.2.2.1 for the Recreation Zones and Discretionary Activity 2.2 in the Recreation 3 Zone).

The actual mechanism to provide reverse sensitivity protection to the airport and the raceway are by making exempted from the permitted activity standard on lots of not less than 1,000 square metres. The exemption applies “*within the Airport Noise Boundary around Richard Pearse Airport and within 65dBA L10 Noise Contour around the Timaru International Raceway, as identified on Planning Map No 22*”.

The following is an extract of the district plan maps showing these two contours (in yellow);





The discussion and recommendations below evaluate the adequacy of the above contour-based reverse sensitivity planning mechanisms for future use within the proposed district plan.

### 5.1.1 Airport Noise

Richard Pearse Airport is located in the rural zone off the Pleasant Point highway, 4 km north of Washdyke. The Airport covers a land area of around 205 hectares, comprising one sealed night capable runway (Rwy 02/20) 1,280 metres long and two grass runways suitable for light aircraft. The South Canterbury Aero Club is based at the airport and frequently use the airport for training and recreational purposes. There are regular Air New Zealand Link flights using Bombardier Q300 aircraft.

Designation 6.11.5 of the district plan authorises aircraft operations at the airport<sup>4</sup> subject to compliance with:

1. 5.22 Noise limits for non-aircraft activity (these are assessed at the notional boundary to any existing dwelling, and are set at levels commensurate with the noise standards for

<sup>4</sup> The wording states “subject to compliance with rule 1.10.1.5.23.2” but this should be rule 1.10.1.5.23.2;



permitted activities in the Rural Zone).

2. 5.23.1 “Aircraft Engine Testing” provides for periods of elevated noise due to aircraft engine testing providing the duration is controlled so that the overall noise limit is not exceeded. Except for essential unscheduled aircraft engine testing, this rule states no aircraft engine testing should take place between 11pm and 7am the next day.
3. 5.23.2 “Noise from Aircraft Operations” which requires daily noise due to aircraft landing and taking off, aircraft taxiing and aircraft flying along any flight path within the Airport Noise Boundary) to not exceed a Day/Night Noise Level (Ldn) of 65dBA outside the Ldn 65dBA contour shown on the Planning Maps.

Planning map 22 shows two airport noise boundaries (Ldn 55 and Ldn 65). These are aircraft noise contours developed in accordance with NZS6805:1992 which are applied in the Timaru District Plan in the manner generally intended by that Standard.

The Ldn 65 noise contour is used in the district plan as a noise emission limit to cap the emissions of noise from aircraft using the airport in the long term (to at least 2026 and beyond) as required by rule 5.23.2 above.

The second contour is termed the “Airport Noise Boundary” which encompasses an area affected to a moderate degree by aircraft noise which, in accordance with NZS6805:1992, should ideally not be used for activities sensitive to aircraft noise unless a district plan permits such uses. District plan reverse sensitivity measures applying within this area surrounding the airport is the focus of this study.

The operative Timaru district plan controls the use of the land within the Airport Noise Contour via the following Rural 1 Zone rules;

- By excluding as “permitted” any subdivision of land below 1,000 square metres in size, applying to any site around the airport located within the “Airport Noise Boundary”
- By excluding as “permitted” establishing within this same area any household units subsequent to the first household normally permitted for to provide accommodation for persons employed on that farm and that no further subdivision is involved.
- Part D Policy 1.4.3(2) states “Subdivision for *Activities Sensitive to Aircraft Noise*<sup>5</sup> within the Airport Noise Boundary shall be avoided” however, even though these activities are described in some detail, only this policy applies, There are no specific plan requirements stated for these wide-ranging definition of activities sensitive to aircraft noise.

While the above land use controls will minimise any new sensitive uses establishing on land affected by Ldn >55 dBA (i.e. Airport Noise Boundary), there is no guarantee that activities sensitive to aircraft noise will not become established somewhere within the Airport Noise Boundary through RMA consenting processes. In the case where expert planning advice confirms this is possible, we have recommended the option of employing the recommended district-wide generic acoustic insulation and ventilation standard described above in Section 3.6.

A plan mechanism is needed within the Proposed Plan to require any consented buildings used to house activities sensitive to aircraft noise to prove, at the time of applying for building consent, that the external building elements will be sufficient to resist outdoor sound to a reasonable

<sup>5</sup> It is noted the district plan definition was confirmed by an Order of the Environment Court [2016] NZEnvC 242 dated 8 December 2016.



degree, and that a specified standard of ventilation will be installed into sleeping rooms (so that windows would need to be open for thermal comfort in these rooms).

Consultation has been undertaken with the airport (Infrastructure Group Manager). Currently the Airport make no recommendations to amend current district plan airport noise provisions, however some minor amendments may be justified.

The following observations are made regarding the adequacy of the existing district plan land use controls applying within areas forecast to receive significant future aircraft noise;

- a) Land use control is primarily exerted via restrictions on subdivision 1,000 square metres or less and via the stated planning noise policy worded as “Subdivision for *Activities Sensitive to Aircraft Noise*<sup>6</sup> within the Airport Noise Boundary shall be avoided”. These are considered effective mechanisms to avoid future dwellings and activities sensitive to aircraft noise becoming established in areas around the airport, a situation which may give rise to reverse sensitivity concerns.
- b) Existing district plan methods which ‘discourage’ noise sensitive development are preferred over an outright prohibition, given that (1) at least an application can be made to establish noise sensitive activities if this were important and (2) the RMA sets out a process to ensure the best sustainable management outcome for such applications. Overall however, the existing district plans are considered a sufficient deterrent. Apart from items (1) and (2) below, no significant changes to the overall approach to land use controls in aircraft noise-affected areas are considered necessary;

### 1) Acoustic Insulation

As above, if the current approached is continued (as proposed) we consider there is some potential for activities sensitive to aircraft noise to establish in the noise-affected area around the airport (as signalled by the current Airport Noise Contour). In the event that such uses are authorised to establish within the area expected to receive aircraft noise at Ldn>55 dBA, then we recommend *habitable rooms* within any consented buildings used to house activities sensitive to aircraft noise be required to be designed so that the external building elements are sufficient to resist outdoor sound to a reasonable degree, and that a specified standard of ventilation will be installed into sleeping rooms. Insulation rules usually stipulate these requirements are required to be certified by an expert submitted to Council at the time of applying for building consent, A district-wide approach to specifying acoustic insulation has been recommended above in Section 3.6 for such purposes.

### 2) Prohibition With Ldn 65 dBA Contour

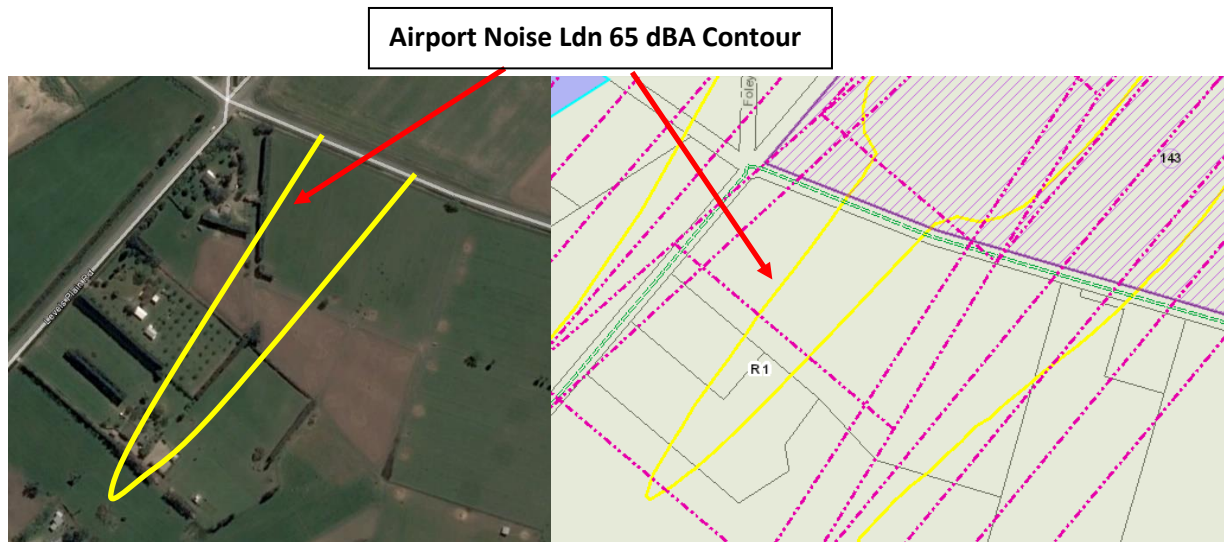
Controls implemented within the operative district plan as a means of preventing inappropriate noise sensitive developments do not exactly follow the recommendations of NZS6802:1992. This is because the district plan reverse sensitivity controls do not recognise the recommendation of NZS6802:1992 that residential and

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<sup>6</sup> This term is defined in the district plan as meaning any Boarding or Lodging House or Hostel, Camping Grounds/Caravan Parks, Community Care Facility, Community Facilities, Day Care Centres, Educational Establishments, Home Stay, Hospital, Household Unit, Kohanga Reo, Marae, Papakainga, and Place of Assembly as defined in this District Plan.



noise sensitive activities should be prohibited from establishing in areas subject to future aircraft noise at levels Ldn 65 dBA and above. This is of no consequence where the Ldn 65 dBA contour remains within the airport land boundary. Fortunately, this is the case in all areas except at the south end of the airport where the Ldn65 dBA boundary leaves the airport site and covers adjacent land to the south of Falvey Road. The area is shown as follows;



#### RECOMMENDATIONS:

The current land use planning provisions in place in the Rural Zone provisions to restrict small site subdivisions and second dwellings in noise affected areas (Ldn > 55 dBA) are considered to currently extend considerable reverse sensitivity protection that should serve well the long need to operate an airport efficiently in this location for the foreseeable future.

The current district plan controls are considered adequate to protect the airport from increasing the density of rural residential activities in the noise affected areas.

The following recommendations are made;

- Consider whether to classify as 'prohibited' any consent application seeking to establish activities sensitive to aircraft noise within the existing Ldn 65 dBA contour currently shown on Planning Map 22.
- Amend the online maps so that the Ldn 65 dBA contour is correctly labelled as the "Ldn 65 dBA Contour".
- Consider requiring a new rule which stipulates *habitable rooms* within any consented buildings used to house activities sensitive to aircraft noise located in noise affected areas (Ldn > 55 dBA) be required to be designed so that the external building elements are sufficient to resist outdoor sound to a reasonable degree, and that a specified standard of ventilation will be installed into sleeping rooms.

#### 5.1.2 Raceway Motorsport Noise

The Timaru International Raceway site is zoned Recreation but the noise effects are experienced in the surrounding rural zone. The raceway is a nationally significant motorsport venue with a 2.4 km track which attracts various categories of racing at national level, also including the activities of the



South Canterbury Car Club. The site operates under a resource consent which authorises the emission of significant levels of motorsport noise (at times). The consent limits motorsport noise in terms of the levels of noise emissions allowed, setting a 'noise calendar' which sets the number of racing days per year, and requires on-site management of vehicle noise including noise monitoring and reporting to Council. Nevertheless, as the intermittent use of the track and during times of peak use, the noise emissions are considered significant enough to require land use planning restrictions to restrict noise-sensitive developments on any new lots in the area.

In terms of reverse sensitivity protection, the district recognises conflicts may occur between rural residential activities and noise from this motorsport venue within Issue 1.4.1 in the Rural Zone provisions, Policy 5.2.2.1 for the Recreation Zones and Discretionary Activity 2.2 in the Recreation 3 Zone). The key reverse sensitivity protection is provided within the Rural 1 Zone which ;

- Excludes as "permitted" in the area, any subdivision of land below 1,000 square metres applying to any land within the "65dBA L10 Noise Contour around the Timaru International Raceway"
- Also excludes as "permitted" in this area, the establishment of any household units subsequent to the first household normally permitted to provide accommodation for persons employed on that farm and that no further subdivision is involved.

Consultation has been undertaken with the club who advise few complaints are ever received. The club actively manage race vehicle noise at source, and monitor cumulative raceway sound to check compliance with the contour shown in Map 22. The appropriate race events are monitored by the club, which we understand has also been checked by Council staff. The overriding requirement under the existing resource consent is for motor racing noise not to exceed L10 65 dBA at any point beyond the location of the "Timaru International Raceway L10 65 dBA Noise Boundary" as shown on Planning Map 22, and shown above in Section 5.1. The club have signalled no desire for any changes to the current planning arrangements in place, with they consider adequate.

**RECOMMENDATION:**

AS a minimum, retain current restrictions in the operative plan Rural and Recreation Zone provisions restrict small site subdivisions and second dwellings. These provisions are considered to adequately provide reverse sensitivity protection to the Timaru International Raceway, at least for the foreseeable future.

The current district plan land use planning controls are therefore recommended to be retained as they currently apply to all sites located within the "65dBA L10 Noise Contour around the Timaru International Raceway" as depicted in the planning maps. The South Canterbury Car Club has indicated no changes to the contour location shown in Planning Map 22 are considered necessary.

In the event that consent could be granted for sensitive uses to establish within the "65dBA L10 Noise Contour around the Timaru International Raceway", it is recommended a rule be developed to require compliance with a minimum acoustic insulation standard to protect indoor spaces from adverse effects of motorsport noise.





## 5.2 Commercial & Industrial Zones

A wide range of noise sources within commercial and industrial zones can lead to elevated outdoor noise environments, higher than those normally recommended as suitable for residential or other noise sensitive uses. Effects of noise for any sensitive activities establishing within these zones are considered likely to give rise to potential reverse sensitivity noise effects on established operators and any new permitted uses that may establish in the zone in the future.

The **Industrial Zone** has two categories of zoning which reflect two different levels of compatibility with sensitive land uses, as follows;

Industrial L: provides for industrial activities having minor to moderate environmental effects and that these effects should be mitigated for neighbouring zones to the extent that is practical.

Industrial H: provides for heavier industrial activities having more adverse environmental effects and which should be separated from residential and other sensitive activities. The port area is zoned Industrial H. Reverse sensitivity issues associated with noise from the port are discussed separately below.

There are no operative plan provisions setting out that noise sensitive activities such as new residential dwellings or apartments are permitted, controlled or discretionary activities on sites within Industrial L or H zones. Therefore, under Part D Rule 4 all such activities sensitive to noise are considered non-complying. This approach (of correct) is supported as a deterrent to enabling noise-sensitive activities establishing in noisy industrial areas. However, in the event that consent could be granted to allow such uses on industrially zoned sites, we recommend below that a mandatory minimum acoustic insulation (and ventilation) requirement apply to all habitable rooms.

The **Redruth Landfill** site is included within the Industrial zone and has an important waste management function for Council. This facility is surrounded on north, east and southern sides by a buffer of land and waterway with a recreational designation, and to the west by land designated for Light Industrial Use. The closest residential land is several hundred metres to the north, on a south-facing raised terrace - the suburb of Redruth.

We are aware of a (now dated) social survey report by consultant Taylor Baines ChCh (year 2000) which surveyed neighbours opinions of the Redruth Landfill (among a range of facilities studied). Neighbour responses indicated noise is "not loud enough to be a nuisance" although some sounds were heard at times (more noticeable when there is a change in pattern, such as when dumping rubble). Importantly, the operation of the Redruth Landfill is daytime only, when ambient sound from roads and other activities in the area are also elevated.

Current District Plan Industrial Zone rules for noise that apply to the Redruth site are overlain by *Designation 69* which specifically provides for landfill activities (and its effects). This over rules having to comply with the industrial zone noise limits, however the RMA s.16 duty to avoid unreasonable noise remains in place. Following consultation with Council management, we are informed the current arrangements are acceptable to Council as a requiring authority. No



recommendations are therefore recommended below to amend the district plan to introduce any reverse sensitivity noise provisions into the proposed district plan for the Redruth Landfill.

District plan controls applying in **Commercial Zones** allow the establishment of new residential apartments and other noise sensitive activities. Within Commercial 1A and 1B zones it appears the operative plan classifies as 'permitted activities' household units, day-care centres, travellers accommodation, health facilities, Boarding or Lodging Houses, Hostels or Community Care Facilities (unrestrained) and Travellers' Accommodation.

There is considered to be considerable potential for these activities to receive unreasonable or unacceptable noise effects, including within rooms used for rest and sleeping. Under widely accepted guidelines, habitable rooms should be protected to low sound levels indoors (e.g. 30 dBA). If unprotected, indoor noise effects are likely to eventually lead to reverse sensitivity effects which may impact upon those very activities that the zone was set up to provide for.

This potential adverse noise effect is exacerbated by the fact that the operative plan does not include a within-zone "between site" noise limit for permitted uses in the Commercial Zone (Rule 5.10). Thus, within the centre of the zone, noise levels can be very high yet meet all relevant permitted activity noise performance standards.

Including appropriate acoustic insulation requirements is considered important for improving the long term sustainability of a range of important infrastructural and transport related facilities, not to mention the improved outcome for those experiencing potentially elevated noise levels in outdoor areas around dwellings and apartments.

Implementing acoustic insulation measures in the manner recommended is considered consistent with the aims set out within Timaru District Council's vision for the future signalled within the recently published *Timaru District 2045 Growth Management Strategy*<sup>7</sup> adopted by Council in May 2018.

#### RECOMMENDATIONS:

- Currently there is considered to be insufficient restrictions on establishing noise sensitive activities on sites in the Commercial zone. We recommend applying (at least) some form of controlled activity status subject to the provision of suitable acoustic insulation (and ventilation) as discussed above at Section 3.6). This will provide reverse sensitivity protection to permitted uses in the Commercial Zone which are considered to be potentially noisy, with wide-ranging opening hours.
- For the Industrial zones, sensitive activities are classified as *non-complying* in the operative plan. This minimum threshold should continue in place, and possibly be enhanced. In the event that consent is ever actually granted to allow sensitive uses on industrially zoned sites (e.g. managers flat), we recommend a mandatory minimum acoustic insulation (and ventilation) requirement apply to all habitable rooms approved by way of resource consent in this zone.
- No reverse sensitivity measures or district plan noise changes are recommended in relation the Redruth Landfill (which operates under a designation on a site located within the industrial zone).

<sup>7</sup> Timaru District 2045 Your Plan Our Future- Timaru District Plan Review Land Use Plan [www.timaru.govt.nz/GMS](http://www.timaru.govt.nz/GMS)



### 5.3 Recreation Zones

The Council operate significant recreational assets on behalf of the community which may experience potential reverse sensitivity noise effects. The range of facilities include;

- Caroline Bay Community Lounge
- Caroline Bay Hall
- Caroline Bay Soundshell
- Pleasant Point Gymnasium
- Pleasant Point Town Hall
- Southern Trust Events Centre
- Temuka Alpine Energy Stadium
- Theatre Royal
- Washdyke Community Centre
- West End Hall

The operative district plan states at Part D 5 that many of these venues can have adverse effects on their neighbourhoods arising from noise of the activity itself (e.g. amplified sound) or from the noise caused by concentrating large numbers of people on a site at any one time such as at clubrooms where such effects often occur at night.

At 5.1.3.1, the operative plan sets out that the control of the adverse effects of recreational activities is to be managed through zoning, and listing of activities requiring a resource consent and performance standards in the three zones (see Rules for Recreation Zones; see Rural Zones - Noise 1.4).

There are no district plan rules limiting noise from permitted activities that take place in the Recreation zone, although we understand several facilities operate under existing resource consents, some of which contain noise limit conditions. Rather, the district plan seems to accept that the temporary and limited duration of the noise effects of recreational activities will mean the resultant noise effects on the community are not unreasonable. This is questionable as a policy approach to reverse sensitivity noise effects. However, it is acknowledged noise emissions are suitably managed for the more significant noise-making activities taking place on sites zoned Recreation (such as Alpine Energy Stadium and The International Raceway).

Temporary activities are provided for in Chapter 6.10.2.1 which states temporary activities in the form of carnivals, bazaars, markets, auctions, displays, rallies, shows, gymkhanas, dog trials, ploughing matches and other recreational activities, public meetings and associated car parking, ancillary temporary buildings or other structures including tents provided that the activity remains on the site for longer than 7 days at any one time and no site is used more than 2 times in any one year, except for temporary military training activities.

Consultation with the Group Manager Community Services (Stadiums and Events Centres) indicated Council management are content with the current arrangements and consider existing measures are sufficient to avoid adverse reverse sensitivity noise effects and no recommendations are made for changes going forward for the proposed district plan.



**RECOMMENDATION:**

Currently there is are considered to be limited potential for reverse sensitivity effects on the Council's assets operating on sites in the recreation zone. This is based on the limited nature scale and frequency of the noise effects.

As most noise emissions from permitted activities on recreation sites, there is some inherent limit on any cumulative effects that may occur. Noise associated with major activities on recreational sites are also controlled by resource consent noise limits in some cases.

Consultation with management of Council-owned facilities indicated existing measures were considered sufficient to avoid adverse reverse sensitivity noise effects and no recommendations were requested for changes going forward for the proposed district plan.

## 5.4 Prime Port

The port of Timaru is a nationally significant asset providing a vital sea link to other centres and internationally. PrimePort operates a full break-bulk handling facility over all wharves (including North Mole) and handles significant Dry Bulk Cargoes- Export grains are handled via the No.2 wharf bulk handling facility and ship loader. Annually, we understand the Timaru Container Terminal handles over 85,000 TEU with bulk trade volumes reached 1.73 million tonnes per annum (2017). Log exports are apparently reaching half a million cubic metres a year.

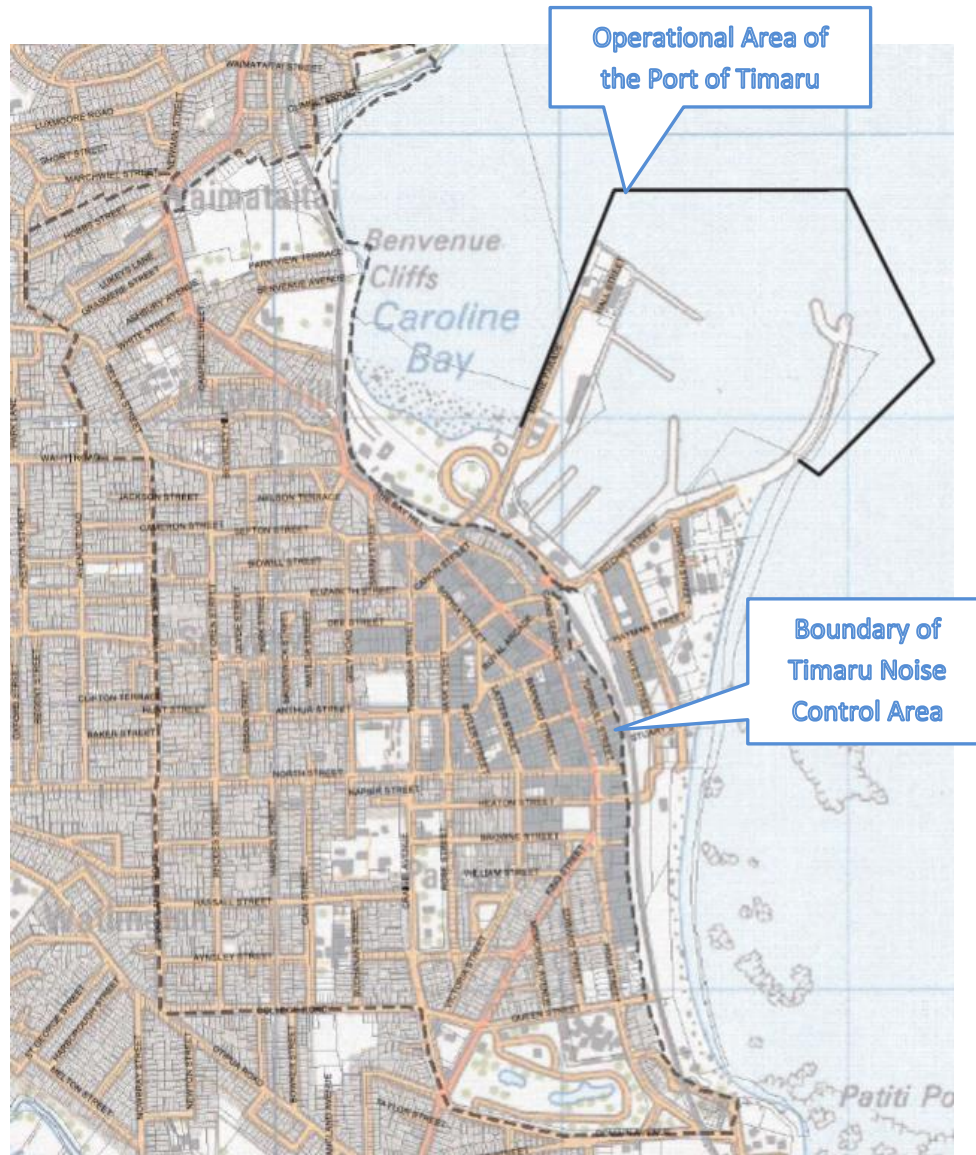
Part B Chapter 12 of the operative plan refers to "Port of Timaru Limited" as a significant noise source but there are no specific policy or rules aimed at managing the effects of port noise *per se*. Instead, the provisions of the Industrial H apply with respect to limiting the effects of port activity carried out within this zone (which does not include noise from vessels at berth, which are covered by the Regional Coastal Plan). The sufficiency of relying on the reverse sensitivity noise insulation measures recommended for inclusion within Industrial H zone provisions to also address port noise is discussed further below.

The Canterbury Regional Coastal Environment Plan (RCEP) 2005 contains provisions directly relevant to providing for noise associated with the long term operations and development of the Port of Timaru by enhancing reverse sensitivity measures.

In Part 2 the RECP sets out (Chapter 5(c)) the need to "provide for the ports of Lyttelton and Timaru to be protected from activities that may restrict their ability to operate effectively and efficiently". Policy 6.4 seeks to control activities that "have or are likely to have an adverse effect on the appropriate operation and development of the ports of Lyttelton or Timaru".

In terms of limits on the emissions of noise from activities within the coastal marine area, the RECP sets out a discretionary consent noise threshold based on the *Timaru Noise Control Area* associated with the Port of Timaru (map 5.2 of the RCEP Map 5.2). The diagram below shows the *Operational Area* of the Port of Timaru and the *Timaru Noise Control Area*.





Under the RCEP, any activity emitting noise within the Operational Area is a *Discretionary Activity* if the noise generated by that activity exceeds:

- (a) 55 dBA L10 (15 min) measured and assessed at any point on land beyond the Timaru Noise Control Area during daytime (between 7 am and 10 pm) or
- (b) 45 dBA L10 (15 min) and 75 dBA Lmax measured and assessed at any point on land beyond the Timaru Noise Control Area between 10 pm and 7 am on the following day.

This rule sets a threshold for new noise-making activities establishing within the coastal marine area but has limited effect because;

- The rule does not address port noise received within the Timaru Noise Control Area.
- The rule does not address effects of existing noise from port activities taking place within the coastal marine area
- The rule is a guide for assessing consent applications and has no effect as a noise limit for managing noise associated with those port-based activities taking place within the CMA. Without an agreement between Timaru District Council and the Canterbury Regional Council regarding sharing of powers under the RMA, there will always be some difficulty in enforcing limits on noise received within Timaru district from activities taking place with the CMA.

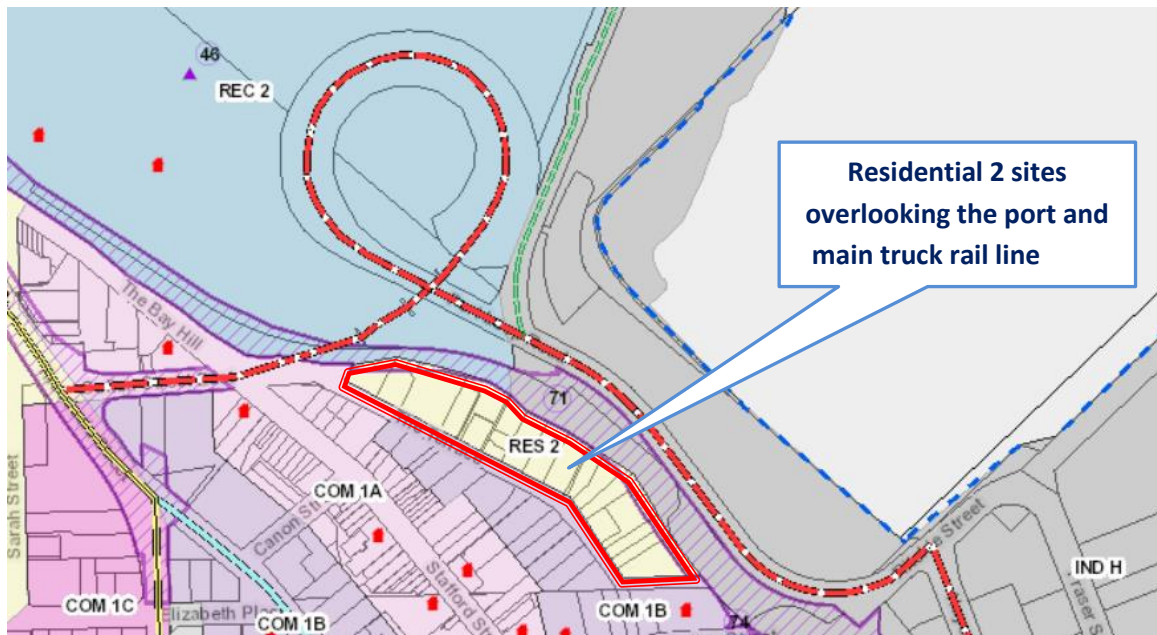


Thus, overall RCEP provisions have little to do with enhancing reverse sensitivity noise measures except providing a rather unrestrictive and uncontrolled 'discretionary activity' threshold for noise from new activities within the CMA.

In terms of the operative plan Industrial H noise controls applying to port activities taking place on the landward side of the CMA, the following provisions apply under Part D 4 (rule 5.13(c)) to noise generated within the port, when received within Residential 2 zoned sites;

7.00am to 10.00pm	55 dBA L10
At all other times	45 dBA L10
On any day between 10.00pm and 7.00am the following day	75 dBA Lmax

These limits apply at the closest residential sites to the operational port area, which are "Residential 2" sites with dwellings located on the, located on the eastern side of "The Terrace" which is located around 250m from vessels at berth at the Port of Timaru. All Residential sites in this isolated pocket of Residential 2 land lie within 40 metres of the South Island Main Truck Railway, This isolated pocket of Residential 2 zoned sites are shown in the following extract from the district plan maps;



Residential 2 zoned sites overlooking Timaru Port and the South Island Main Trunk Railway Line.



As the above Residential 2 sites represent the closest noise-sensitive sites to the port, there is an issue regarding whether 24 hour port activity results in noise effects within this area are reasonable at all times, including during night time activity periods when residential sites are more sensitive to noise in the local environment.

The district plan envisages port activities within Industrial H zone as compliant with the L10 45 dBA night time noise limit of Part D 4 (rule 5.13(c)), however this has not been able to be confirmed. Our review has confirmed there are no regional plan noise limits applying to port activity taking place within the CMA, nor to noise generated along the alignment of the South Island Trunk Railway running adjacent to the Residential 2 zoned sites.

The reverse sensitivity noise issues for the identified Residential 2 zoned sites appear significant. However, due to zoning patterns, these sites appear to be the only area of elevated risk. This assumes the recommendations above (to control the ability of noise sensitive uses to establish within the Commercial zone as well as within Industrial zoned sites), are adopted including requiring habitable rooms to be adequately insulated (and ventilated) where sensitive uses are allowed to establish in these zones.

In summary, existing noise-sensitive uses established within Residential 2 sites on “The Terrace” represent a significant reverse sensitivity noise challenge that is recommended to be addressed with the proposed district plan.

Two possible options are identified for addressing the reverse sensitivity risks associated with ‘The Terrace’ residential, sites:

#### **5.4.1 NZ Port Noise Standard NZS6809:1999**

One of the possible options to consider is adopting into the plan the approach of NZ Standard NZS 6809:1999 *Acoustics – Port Noise Management and Land Use Planning* which was specifically developed for the management of port noise and the application of appropriate land use planning techniques to ensure the long-term compatibility of ports and their neighbours. NZS6809:1999 has been adopted into many other District Plans. It recommends that:

- Limits be set on the emission of noise from the port (in the long term) at a noise boundary that can be justified based on current and future port activities ; and
- Land use planning measures be adopted to manage the effects of port noise in noise sensitive areas within the contour area.

NZS6809:1999 utilises noise contours (referred to as inner and outer control boundaries) as means of managing and port noise and controlling new noise-sensitive activities establishing within noise-affected areas (as depicted by the port contours). The inner control boundary sets noise limits within which it is undesirable to develop noise sensitive activities such as residential uses. Between the inner and outer control boundaries new noise-sensitive activities and alterations or additions to existing buildings used for noise-sensitive activities should be permitted activities, subject to conditions requiring that that they be adequately insulated from port noise. Beyond the outer control boundary specific controls for any noise sensitive use are considered to be unnecessary.



New Zealand Standards do not have any 'regulatory force' on their own unless cited as a means of compliance in a statutory document, such as in the District Plan, or within a condition of Resource Consent. In reality, NZ Standards are often adopted in whole or in part. In this case, we have identified that there could be significant jurisdictional issues in adopting an integrated NZS6809-type approach to managing port noise in the proposed district plan. The successful implementation of NZS6809 for managing noise from activities at the Port of Timaru would appear to require a 'transfer of powers' process under the RMA to so that noise can be seamlessly managed across the seaward and landward sides of the CMA boundary.

#### 5.4.2 Proposed Railway Noise Reverse Sensitivity Protection Measures

The above Residential 2 sites are located adjacent to, and are affected by noise emitted from, the South Island Main Trunk Railway line. As these Residential 2 sites are all located not greater than about 45 m from the railway designation boundary, measures recommended below to address reverse sensitivity noise and vibration within received at sensitive sites adjacent to the South Island Railway line designation throughout the district may prove to be sufficient to also address noise from port activities received at the above Residential 2 sites<sup>8</sup>.

#### 5.4.3 Port Noise Summary

Existing noise-sensitive uses established within Residential 2 sites on "The Terrace" overlooking the port operational area represent a significant reverse sensitivity noise threat to the long term operation of the port (and potentially the adjacent main trunk railway line). This issue is recommended to be addressed with the proposed district plan.

We have consulted with the Port company and their planning advisors on options for possible port noise management options. There is no immediate desire to implement NZS6809 within the proposed plan, based on the absence of any significant complaints from the nearby community regarding noise associated with the current 24 hour operation of the port. Two possible methods are identified for addressing this issue within the recommendations below;

#### RECOMMENDATION:

Currently there is are no effective district plan or regional plan rules or methods to manage the reverse sensitivity noise effects of existing or proposed port activities. An area of Residential 2 zoned land overlooking the port has been identified as representing a potential threat to the long term efficient operation of the port in reverse sensitivity noise terms.

Two possible options are identified as possible methods to introduce reverse sensitivity measures into the district plan to deal with port noise, both of which should be investigated further;

1. Port noise management and land use planning methods set out within the recommendations of NZ port noise standard NZS 6809:1999 *Acoustics – Port Noise Management and Land Use Planning*
2. Reverse sensitivity noise and vibration measures recommended below to be applied within residentially zoned sites located in close proximity to the South Island Main Trunk Railway line.

<sup>8</sup> Advice received from KiwiRail (Kiwirail's recommended "Noise and Vibration Standard October 2018") indicates Kiwirail consider district plan reverse sensitivity measures should apply to any new or altered buildings for noise sensitive activities located within 100 metres from the rail designation boundary.





## 5.5 Traffic Noise

Roads, highways and streets perform essential land transport functions but are also responsible for significant 24 hour noise (and potential vibration) effects experienced within residential and other noise sensitive sites established in proximal distance to the roading network.

Recommended reverse sensitivity noise and vibration measures are recommended below to apply to affected sites for two specific situations;

### 5.5.1 Existing Road Network

The existing network of roads across the Timaru district represent a series of line sources of noise that affects sound received over wide areas, possibly the most significant noise source within the Timaru district. Most effects are concentrated along state highways where the traffic comprises significant volumes of heavy vehicles. Apart from the proportion of heavy vehicles in the traffic stream, average vehicle speed and total daily traffic volumes are the main determinant of noise levels received at roadside locations.

Managing the effects of reverse sensitivity associated with highways and roads is considered a responsibility to be shared between the roading authorities, local authorities (regional, district and city councils) and landowners and developers. There is a need to balance providing for a safe and efficient roading network with the need to provide for a reasonable quality of life and amenity values where noise sensitive land use activities establish adjacent to busy roads.

Part d 6.6 of the operative plan refers to the roading hierarchy. The operative however sets out no policies or objectives to deal with noise or vibration effects of the roading network. Noise and vibration effects are most likely to be significant within sites adjacent to the following road categories;

- State highways
- Arterial roads
- Regional roads
- Primary collector roads

These categories of roads carry significant volumes of general traffic, including a higher percentage of heavy vehicles serving key sites of primary industry and the port.

In our experience, reverse sensitivity issues are only likely to occur for roads carrying greater than 2,000 to 5,000 vehicles per day, depending on speed limits in place. Therefore, we recommend land use controls to protect the corridor adjacent to state highways, arterial and regional roads carrying (or is expected to carry) >2,000 vehicles per day (50 km/hr speed limit areas) and >3,000 vehicles per day in areas with 100 km/hr speed limits apply.

Best practice for the revised District Plan would be to adopt the NZTA philosophy of reverse sensitivity protection against traffic noise affecting new or altered dwellings. There are no examples where noise or vibration effects are addressed via district plan mitigation measures applying to existing dwellings and noise sensitive sites.

We recommend adopting methods that appropriately respond to the range of expected noise levels experienced near the above roading categories (with variable buffer distances depending



upon the level of expected road traffic noise) however where acoustic insulation is adopted as means of achieving compliance with the new requirements, this should be in accordance with the above recommended District Plan standard for acoustic insulation of habitable spaces (including ventilation requirements).

NZTA have developed guidelines<sup>9</sup> to assist in managing reverse sensitivity effects of new noise sensitive development establishing near existing busy roads based on the premise that adverse road traffic noise effects are experienced alongside roads carrying appreciable traffic (>2,000 vehicles per day or greater). These concepts are acceptable in principle however some aspects need to be confirmed and clarified prior to implementing any specific recommendation within the new proposed plan.

Areas of concern arise in 'right-sizing' of any setbacks or buffer distances (or areas where insulation maybe required) recommended by the NZTA guidelines. Where these methods are adopted, we recommend these be based on traffic speeds, traffic volumes, road surfaces and percentage heavy vehicles relevant to the Timaru segments of the state highway and local road network where adverse effects are expected. Over-prediction of areas where traffic noise reverse sensitivity measures may be recommended under the NZTA guidelines can occur as these guidelines are based on high growth assumptions for traffic volumes (doubling every 20 years) and adopt a default road surface within the noise predictions which are likely to be exhibit grater road surface texture than is actually in place in the Timaru district. Thus, we recommend proceeding with road traffic noise reverse sensitivity measures in the proposed plan that are justified as appropriate for adoption within the Timaru district.

#### RECOMMENDATION: Effects Of Existing Roads

- Introduce effective district plan policies methods and rules to manage the reverse sensitivity noise effects associated with noise or vibration found in areas adjacent to the more highly trafficked areas of the roading network in Timaru.
- Noise sensitive developments located within proximal distance of a busy road are likely to experience high noise levels and suffer poor environmental quality, thus the proposed plan should control the development of noise sensitive uses beyond suitable set back distances from busy roads.
- It is recommended that road traffic noise reverse sensitivity measures introduced into the proposed plan be technically justified as appropriate for adoption within the Timaru district.
- Sensitive development can be established within areas adjacent to busy roads affected to a moderate degree by road traffic noise provided buildings housing such uses are designed and constructed to meet a minimum indoor acoustic standard.

<sup>9</sup> *Guide to the management of effects on noise sensitive land use near to the state highway network*. NZTA Nov 2015. NZTA's Reverse sensitivity guidelines are contained in appendix 5D of the Transit New Zealand planning policy manual – [www.nzta.govt.nz/resources/planning-policy-manual/](http://www.nzta.govt.nz/resources/planning-policy-manual/)



### Noise From New or Altered Roads

At times, new roads or highways need to be established within the district. The district plan needs to control the development of new or altered roads to ensure the relevant reverse sensitivity noise and vibration effects of such developments are set in place (as far as can be achieved) at the time designations or planning approvals are approved.

We recommend implementing NZS 6806:2010 *Acoustics - Traffic Noise – Noise From New or Altered Roads*. This Standard aims to “control” traffic noise from new and altered roads to reasonable limits by providing noise criteria to address the adverse effects of this noise on people.

The Standard provides formal guidance and consistency on methods and criteria to measure, assess, and control the effects of noise from new or altered roads. The standard only applies to new and altered roads of scale and state highways and generally not recommended to apply to low volume roads which would exist in regards to district readings etc .

This Standard does not address noise from existing roads except in relation to situations where new or altered roading projects interact with existing roads

NZS 6806:2010 provides a consistent assessment procedure for noise from new roads and includes recommendations on how to measure, predict, assess, and mitigate road traffic noise associated with new or altered roads. It establishes reasonable criteria for road traffic noise effects at sensitive sites, taking into account the effects of noise on people and communities, and the potential benefits of new and altered roads to people and communities. NZS6806 is the technically appropriate standard for the assessment of noise from ‘new or altered roads’ as defined by its application within the standard. The Standard is not currently referred to within the District Plan.

**RECOMMENDATION: New or Altered Roads**

Potential reverse sensitivity applying to roads can be enhanced by ensuring new or altered roads comply with NZS 6806:2010 *Acoustics - Traffic Noise – Noise From New or Altered Roads*.

### 5.6 Noise From Rail Corridor

Rail is a key element of New Zealand’s transport network and plays a significant role in meeting the vision of the New Zealand Transport Strategy (NZTS). Noise emissions from KiwiRail operations on the South Island Main Truck rail line through the Timaru district may occur at any time over the 24 hour day, seven days a week. Noise effects may arise in relation to;

- a) Freight trains (through trains) which avoid the need for freight to be transported on the road network.
- b) Maintenance and upgrade work to the rail network to maintain a safe and efficient service. Often this work needs to be conducted during night time to avoid disrupting daytime rail services.

Measures to control development of noise sensitive receivers in areas affected by noise and



vibration from trunk railway lines is an emerging RMA issue, particularly with increasing rail capacity and train frequency. It is recommended the revised Plan recognise the importance of this key transport resource and ensure that its long term operation is not compromised through the effects of noise sensitive activities establishing in areas affected by rail noise.

Kiwirail have been contacted and have supplied wording for the type of reverse sensitivity protection they envisage as adequate for those parts of their network located in the Timaru district. Kiwirail's recommended "Noise and Vibration Standard October 2018" indicates this requiring authority considers district plan reverse sensitivity measures should apply to any new or altered buildings for noise sensitive activities located up to 100 metres from the rail designation boundary. This is considered to cover an area greater than the limited main trunk activity through the Timaru district would suggest.

KiwiRail considers the following activities are sensitive to the effects of noise and vibration:

- residential activity
- visitor accommodation
- residential care facilities
- education and day care facilities
- hospitals and healthcare facilities
- marae

It is requested definition of activities sensitive to the effects of noise and vibration need to be clarified within the proposed plan. It is recommended a single definition apply consistently wherever reverse sensitivity land use controls are prescribed in the proposed plan. There are no known reasons why a district plan would need to provide different definitions of sensitive activity according to the type of noise effect being guarded against.

Kiwirail's approach is require the setbacks and acoustic insulation as district plan controls applying over areas up to 100 metres from the designation boundary (not the rail track). Kiwirail need to justify the extent of the effects area over which land use planning controls are sought. It is recommended any such control areas be 'rightsized for rail effects occurring in the Timaru district.

The recommendation for the revised District Plan adopt methods for dealing with reverse sensitivity effects, however the details will have to be shown to be appropriate having regard to effects expected to be experienced in the Timaru district.

#### RECOMMENDATIONS;

- It is recommended the proposed district plan incorporate policies, objectives and rules so that suitable measures are in place to provide reverse sensitivity [protection to the South Island Main Trunk and associated infrastructure.
- The recommended methods should by stipulating suitable setbacks and areas within which minimum acoustic (and ventilation) requirements apply to any new or altered noise sensitive activities establishing.
- These requirements should apply to all sites in proximal distance to the main trunk rail line.
- These provisions would benefit from the development of a district plan-wide definition for 'noise sensitive activities'.



## 5.7 Fonterra

Significant primary produce processing and manufacturing are carried out at Fonterra's Clandeboye dairy site near Temuka which we understand is the Southern Hemisphere's largest producer of natural mozzarella cheese and employs around 900 full-time staff which makes a significant contribution to the countries annual dairy exports.

We further understand this facility operates under noise limits and controls terms specified within resources consents held for the various components of the site, with the site surrounded by rural land. The underlying district plan noise emission limits for permitted activities in the rural zone refer to compliance at the 20 metre notional boundary to any rural dwelling. However, in planning terms this compliance location could shift if a new dwelling is located at a closer location to the noise-making plant. Overall, we agree there is some significant risks in terms for future subdivision that, if allowed to occur, would cause potential sensitivity noise effects for the Fonterra's 24 hour operations.

While researching details of consents held and any applicable noise emission limits are beyond the scope of this project, we are aware of the significant risk (in land use planning terms) the site may face in the ,long term, especially given 24 hour activity conducted on the Clandeboye site.

We have consulted with Fonterra's planning manager who advises that a 'contour-based' control should apply to the whole Clandeboye site – however, such a contour is as much about authorising cumulative noise emissions complying with t noise contour, as it is about dealing with reverse sensitivity concerns. As this Stage 2 review has involved a review of noise emission standards for the proposed district plan, establishing noise contour for the Clandeboye site signals a wider noise 'permissions' issue that would require a full AEE, including that assurances that the best practical option was being adopted to ensure noise emissions authorised by the contour would remain reasonable at all times (for example, during boiler venting or blowdown).

We understand from Fonterra that a noise contour approach has been adopted in some form or other at the following Fonterra sites nationwide;

- Fonterra Darfield and the Synlait site at Dunsandel – Selwyn District Council
- Fonterra Stirling – Clutha District Council
- Fonterra Whareroa and Kapuni – South Taranaki District Council
- Fonterra Hautapu and Te Awamutu - Waipa District
- Fonterra Edgecumbe – Whakatane District Plan
- Fonterra Reporoa – Rotorua District Plan
- Fonterra Te Rapa – Hamilton City
- Fonterra Kauri (Whangarei DC)
- Fonterra Maungaturoto (Kaipara DC)
- Tatua and Open Country (Matamata Piako DC)

While we support the introduction of a noise contour approach at Clandeboye, this issue is as much an overall Council decision as it is as a tool for addressing reverse sensitivity noise concerns. Decisions will need to be arrived at to amend existing noise limits applying to the Clandeboye site if the noise contour approach is elected to be included in the proposed plan. In addition, we consider there are wider planning issues beyond the scope of this report that also need to be



addressed when placing development restrictions over land not under the noise-makers ownership (or control). This would include consultation with affected landowners.

**RECOMMENDATION:**

- On the basis that adopting a contour approach to provide reverse sensitivity protection in the proposed plan in the manner sought by Fonterra will be assessed by a planning expert against alternative planning methods such as zoning, the use of setbacks and acoustic insulation, this review supports in principle the adoption of some form of contour or setback distance for buildings housing activities sensitive to noise, or alternative means (such as if this can be achieved via district plan subdivision controls).
- The restrictions will apply within an (as yet undefined) noise-affected area of land surrounding Fonterra's Clandeboye site which has not been determined at this stage.
- The 'noise contour approach' requested by Fonterra has merit as a method for ensuring the proposed district plan provides long term reverse sensitivity noise protection to Fonterra's existing and proposed Clandeboye assets.
- Any amendments to existing noise controls associated with adopting a contour approach to address reverse sensitivity is considered beyond this Stage 2 report scope (but falls under the wider proposed plan topic of regulating noise from industrial activities in rural areas).
- Decisions will need to be arrived at to amend existing noise limits applying to the Clandeboye site if the noise contour approach is elected to be included in the proposed plan
- The above approach to including acoustic insulation of rooms housing sensitive activities is considered worthwhile to improve sustainability of any new proposed district plan provisions The above discussed 'district-wide' acoustic insulation standard is recommended to be adopted in the case where land use controls applying within the proposed noise contour provide for habitable rooms to be insulated against external noise.

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## 6 Summary

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The existing reverse sensitivity provisions of the operative Timaru District Plan that address noise and vibration effects have been reviewed in the light of the relevant regional plan, NZ Standards and guidelines, including information provided by the parties consulted with (see APPENDIX A attached).

The aim has been to assess the adequacy of existing district plan reverse sensitivity measures applying in each specific area, and to identify recommended improvements and enhancements (where warranted) to support rather than undermines the District's social, economic and environmental vision, and to enhance long term sustainability.



The key recommendations for new or enhanced measures to address noise and/or vibration reverse sensitivity concerns are summarised as follows;

### Timaru Airport

*Consider whether to classify as ‘prohibited’ any consent application seeking to establish activities sensitive to aircraft noise within the existing Ldn 65 dBA contour currently shown on Planning Map 22.*

*Amend the online maps so that the Ldn 65 dBA contour is correctly labelled as the “Ldn 65 dBA Contour”.*

*Consider requiring a new rule which stipulates habitable rooms within any consented buildings used to house activities sensitive to aircraft noise located in noise affected areas (Ldn > 55 dBA) be required to be designed so that the external building elements are sufficient to resist outdoor sound to a reasonable degree, and that a specified standard of ventilation will be installed into sleeping rooms.*

### Commercial and Industrial Zones

*Industrial Zone - sensitive activities are already classified as non-complying which should continue in place. In the event that consent is ever actually granted to allow sensitive uses on industrially zoned sites (e.g. managers flat), we recommend a mandatory minimum acoustic insulation (and ventilation) requirement apply to all habitable rooms approved by way of resource consent in this zone.*

*Commercial Zone - controlled activity status subject to the provision of suitable acoustic insulation (and ventilation) as discussed above at Section 3.6). This will provide reverse sensitivity protection to permitted uses in the Commercial Zone which are considered to be potentially noisy, with wide-ranging opening hours.*

### Timaru Port

*Significant reverse sensitivity noise risks have been identified which may threaten the 24 hour operation of activities in the port Two possible options are identified as methods to introduce suitable reverse sensitivity measures into the district plan to deal with port noise, both of which should be investigated further;*

- 1. Port noise management and land use planning methods set out within the recommendations of NZ port noise standard NZS 6809:1999 Acoustics – Port Noise Management and Land Use Planning*
- 2. Reverse sensitivity noise and vibration measures recommended below to be applied within residentially zoned sites located in close proximity to the South Island Main Trunk Railway line.*

### Highways and Local Roads

*The long term successful operation of the land transport network requires that reverse sensitivity noise and vibration measures be included within the proposed district plan. The recommendations include adopting setbacks and / or land use planning controls (including acoustic insulation & ventilation of habitable rooms) within sites adjacent to the following road categories;*

- *State highways*



- Arterial roads
- Regional roads
- Primary collector roads

*The findings recommend any proposed plan provisions are right-sized to match the scale and significance of noise and/or vibration effects likely to be associated with roads in the Timaru district.*

*Potential reverse sensitivity applying to roads can be enhanced by ensuring new or altered roads comply with NZS 6806:2010 Acoustics - Traffic Noise – Noise From New or Altered Roads.*

### **South Island Main Trunk Rail Line**

*It is recommended the proposed district plan incorporate policies, objectives and rules so that suitable measures are in place to provide reverse sensitivity [protection to the South Island Main Trunk and associated infrastructure.*

*The recommended methods should by stipulating suitable setbacks and areas within which minimum acoustic (and ventilation) requirements apply to any new or altered noise sensitive activities establishing.*

*These requirements should apply to all sites in proximal distance to the main trunk rail line.*

### **Fonterra Clandeboye**

*This review supports the adoption of some form of contour or setback distance for buildings housing activities sensitive to noise, or alternative means (such as if this can be achieved via district plan subdivision controls), in principle, to protect the long term future of the activities carried out at the Clandeboye site.*

*The ‘noise contour approach’ requested by Fonterra has merit however decisions will need to be arrived at to amend existing noise limits applying to the Clandeboye site if the noise contour approach is elected to be included in the proposed plan*

*The findings recommend any proposed plan provisions are right-sized to match the scale and significance of noise and/or vibration effects likely to be associated rail activity in the Timaru district.*

Following our review (and feedback from stakeholders involved) there are no recommended enhancements for the following;

- Timaru International Raceway  
Redruth Landfill
- Council Facilities in Recreation Zone

Implementing the above recommended enhancements to the existing District Plan noise provisions is considered integral to enhancing the protection of the environmental, social, economic and cultural wellbeing of present and future generations within the District.





APPENDIX A

Stakeholders Consulted In The Preparation Of This Review



<b>Party</b>	<b>Contact Person</b>	<b>Title</b>	<b>Contact Details</b>
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