

**APPENDIX THREE**

**Technical Report on Noise**

**Ashburton District Plan  
Proposed Plan Change No. 2  
Business 9 Zone North East Ashburton**

**Prepared by: Stuart Camp, Marshall Day  
Acoustics**

**Date: 20<sup>th</sup> August 2007**

**SECTION 42A REPORT – NOISE**

**1 Introduction**

- 1.1 My name is Stuart Camp. I am a Principal in the national acoustical consulting firm of Marshall Day Acoustics. I hold a Science degree from Auckland University, majoring in Mathematics and Acoustics. I have worked in the field of acoustics with Marshall Day Acoustics for the last 24 years. I established the Christchurch office in 1997.
- 1.2 I have been engaged to provide advice on noise effects to the Environmental Services Manager to assist in preparation of Plan Change documentation. I prepared a technical report which formed part of Council's Section 32 Report.

**2 The Proposal**

- 2.1 The proposed plan change involves rezoning existing rural land for industrial purposes.
- 2.2 Acoustically, the challenge is to ensure that existing neighbours are not adversely affected by noise. This includes noise from potential industrial activities on site, and from vehicle movements in and around the site.
- 2.3 The plan change makes provision for a rail operations area, with noise an inherent consideration.

### 3 Section 32 Report

3.1 My technical report which formed part of the Section 32 report, broadly covered;

- A review of the current noise rules of the Ashburton District Plan,
- Proposed noise rules for the new zone, to ensure that noise effects on neighbouring residential properties are no more than minor, while providing achievable noise limits for the proposed industrial site,
- Recommendations for appropriate acoustic buffer distances and other mitigation,
- The acoustical impacts of moving rail yard operations from central Ashburton to the proposed site.

3.2 On the basis of my analysis, I believe that with appropriate mitigation in place, plus appropriate rules controlling activities on site, noise levels from this zone will be appropriate for existing neighbouring properties. Whilst short-term increases in noise may be noticeable, the resulting noise levels will be well within internationally recommended limits, and hence any long term noise effects will be minor.

3.3 I have recommended a number of mitigation measures and rules for this zone to ensure that appropriate noise levels are achieved. In particular, I have proposed;

- Noise rules which are as simple as possible, both to provide clear guidance to industry, and to ensure that compliance monitoring is straightforward. I have proposed only applying noise rules to the business zoned properties, with buffer zones and mitigation provided to ensure that appropriate noise levels are achieved at rural residential properties as a result of compliance with the business rule.
- A noise rule of  $L_{eq}$  55 dBA daytime and  $L_{eq}$  45 dBA /  $L_{max}$  75 dBA night-time at the industrial interface with the buffer zone.
- A buffer zone of not less than 50 metres wide.

- An earth mound not less than 3 metres high along the entire length of the buffer zone, and as close as possible to the business zoned site.
- A noise rule of  $L_{eq}$  65 dBA daytime, and  $L_{eq}$  55 dBA night-time at site boundaries within the Industrial Zone, to ensure that noise levels do not build up in the area.
- A noise rule of  $L_{eq}$  65 dBA daytime and  $L_{eq}$  45 dBA night-time at the interface between the proposed zone and other rural properties in the area. This recognises that rural land is normally used for "industrial" activity during the day, but there needs to be reasonable control of noise at night to avoid sleep disturbance.
- A rule to make it clear that noise limits do not apply at roads.
- Rules to ensure that the area closest to the rural-residential zone is only used for light commercial activities.
- Building construction rules for sites closest to the rural-residential zone, to ensure that noise generating activities face away from existing neighbours.
- Restrictions on the type of activities which can establish near the rural-residential interface (area 1), and a requirement for acoustic reports to be submitted during the consent process for many activities to confirm that they will comply with the specified noise rules.
- A noise barrier five metres high close to and along a large part of the rail yard.

## 4 Submissions

- 4.1 A number of submitters have asked for the proposed buffer zone to be increased to at least 300 metres. Whilst there may be a number of reasons for this, noise is undoubtedly one of the key concerns. This is borne out by one submission (BW and NE Quantock) on behalf of a large number of residents who also want to see an additional 200 metre "quietness zone" beyond the buffer. The submitters also seek that the following provisions apply, which are associated with noise effects;

- The operation of coolstores or similar activities (e.g., grain-drying) which may create noise throughout the night;
- The operation of any industrial activity outside normal business hours and days.

4.2 I believe that the rules and mitigation proposed for this zone deal with these concerns. I fully accept that the proposed 50 metre buffer zone in itself would not adequately deal with either of these issues. However, when this buffer is combined with significant restrictions on the type of activities which can locate in the nearest area, and limits on building orientation/openings, and appropriate noise rules on the business zone side of the buffer, noise effects at rural-residential properties will be minor.

4.3 Acoustically, I do not see any need to increase the size of the buffer zone, and I believe that the plan change provides a “quietness zone” by restricting the type of activities permitted in the area nearest the rural-residential neighbours. The proposed night-time noise rules will limit industrial activity outside of normal business hours to activities which are inherently quiet.

4.4 Other submitters have expressed concern about increased traffic noise, particularly from traffic on Northpark Road. Traffic noise is an issue which I have considered, and the intention of para 18b of the plan change (“...provision of curved road alignments...”) is to make it extremely difficult for heavy traffic to turn left out of the business park and travel south on Northpark Road. This is also aimed at making exit onto the State Highway the obvious choice, minimising the traffic choosing to use Bremners Road.

4.5 Environment Canterbury has requested that specific controls be included to control construction effects, including noise. This is a valid concern, and one which is not currently addressed in the District Plan. Most District Plan noise rules do not apply to activities of limited duration, such as construction. I recommend that this issue is addressed by specifically excluding construction noise from the zone noise rules, and adding a clause requiring noise from construction activities to comply with the requirements of NZS 6803:1999 “*Acoustics – Construction Noise*”.

- 4.6 This could be achieved by changing the wording under the noise rule table in para 38 of the application to read “except that these standards ***shall not apply to noise from construction activities***, or to...”, and by adding an additional rule requiring that “***Noise from construction activities within the Business 9 zone shall comply with the requirements of NZS 6803:1999 "Acoustics-Construction Noise"***”.
- 4.7 ONTRACK have raised concerns over the wording in the plan change which allows for “...rail siding and loading activities...”. My intention with this wording was to avoid heavy engineering or other noisy activities, particularly towards the south-west end of the rail area. Since this submission was received, I have had discussions with ONTRACK personnel to derive a definition which better relates to potential/anticipated activities within a rail loading facility. I agree with ONTRACK that there is limited benefit in providing for the relocation of the Ashburton rail facility if it cannot accommodate anticipated future activities. The District Plan should allow for the establishment of a quality rail facility while addressing my concerns over noise.
- 4.8 In my opinion, it is appropriate that this definition is accompanied by a layout plan for the rail area. This will give Council the ability to ensure that potentially noisy activities are located well away from residential neighbours.
- 4.9 Para 40 of the plan change ensures that acoustic mitigation (a 5 metre high barrier), and a detailed acoustic assessment have to be submitted prior to establishing any rail activities. As such, a broader definition of allowable activities will not result in unacceptable noise levels.

## 5 Conclusions

- 5.1 I am satisfied that the plan change as proposed addresses submitters concerns about noise, with two exceptions.
- 5.2 Firstly, there is a need for a revised definition of rail activities. Because this definition is broader than originally proposed, I believe it is appropriate to complement it with a rule requiring a layout plan. The intention of the layout plan

is to ensure noisier activities will be located further away from rural residential housing.

- 5.3 Secondly, I recommend a change of wording and a new rule to deal with construction noise effects.

**Stuart Camp**  
29 August 2007