Ruapuna – Management of Noise

Explanation

Plan Change 52 has been drafted in response to noise management issues arising from the operation of the Ruapuna Motorsport Park, located on Hasketts Road near Templeton.

The Council received a significant increase in complaints from local residents regarding the operation of Ruapuna in 2005. In response, the Council established a working party to investigate options for addressing these concerns and this resulted in the resolutions made by the Council at its meeting of 25 June 2009. The resolution reflects a three pronged approach recommended by the working party - to initiate a plan change, to purchase seven residential properties affected by “unreasonable” levels of noise, and to engage with the Car Club and Speedway Association to vary their current leases so as to introduce measures to control noise.

The resolution directed staff to prepare a plan change which considered the following:

1. **Initiate a plan change to restrict the noise levels and frequency of events and track usage to limit the use of Ruapuna Reserve to the current levels;**
2. **Widen the development setback from 400 metres to correspond with the 60dBA contour line as identified by MDA;**
3. **Investigate a plan change or other measures for placing restrictions on rural-residential development between the 55 and 60dBA noise contour lines through the City Plan.**

Plan Change 52 is constrained by Section 10 of the Resource Management Act 1991, which provides that a lawfully established activity may continue at the scale and intensity if a rule is included in the plan which would otherwise restrict or prevent that activity. For Plan Change 52, this means that the proposed rule would cap motor-racing activity rather than reduce it.

Plan Change 52 does not require staff time or assets in a manner which impacts on the rebuild programme and is consistent with the Recovery Strategy for Greater Christchurch.

**Date Publicly Notified:** 6 October 2012

**Plan Details:** Planning Maps 29B, 35B, 36B, 42B, 43B

**Date Operative:**

**File No:** PL/CPO/3/52
City Plan Amendments

Note: For the purposes of this plan change, any text amended as a result of other decisions is shown as “normal text”. Any text proposed to be added by the plan change is shown as bold underlined and text to be deleted as bold strikethrough.

Amend the City Plan as follows:

Volume 2 Section 14 Recreation and Open Space

14.4.1 Policy: Adverse effects
To ensure that activities associated with open space and recreational facilities do not have the effect of giving rise to adverse effects (noise, glare, visual detraction), including through incremental increases in scale and intensity, without separation or mitigation measures.

Explanation and reasons
It is important that activities associated with open space and recreational facilities do not adversely effect the surrounding community. Many recreational areas and open spaces, have high levels of public use, particularly on weekends and some evenings, and increasingly small numbers of active sports involve night-time use necessitating outdoor lighting. The potential for impacting on surrounding activities may only be intermittent as some activities occur at regular times and during limited seasons, whereas others may operate on a more frequent and informal basis. The Plan provides measures for assessing and controlling effects of activities related to open space and recreational facilities, including controls on noise and separation from neighbours, recognising their particular function and the nature of the surrounding environment. At Wigram, the particular effects of aircraft noise are reflected in rules requiring the management of aircraft operations.

Open spaces and recreational facilities generally have, and are perceived to have, a positive impact on the amenities of the areas in which they are situated. However, in certain circumstances the undertaking of related activity can conflict with activity in surrounding areas, particularly where located in living areas. Standards in the Plan have been incorporated to the extent necessary to enable an assessment of effects and represent a recognition by the Council as an owner of significant areas of open space that its own activities will be subject to equal consideration.

Ensuring adjoining land uses are not adversely affected also reduces pressure on the activity related to the open space or recreational facility to be reduced, or cease operating in the locality.

14.4.6 Policy: Motorsport
(a) To ensure that motorsport activities operate in a manner which do not result in unreasonable level of noise being received by activities which are noise sensitive; and
(b) To manage noise sensitive activities where they would be affected by noise from motorsport activities.

Explanation and reasons
Motorsport activities generate significant levels of noise and can adversely affect peoples health and wellbeing if not properly managed. At Ruapuna Motorsport Park, activities now take place on an almost daily basis. The Plan therefore
places controls on activities at Ruapuna, and also manages noise sensitive activities on surrounding land. The controls take three forms:

- Restrictions on when motorsport can occur and the allowable noise level;
- Restrictions on noise sensitive activities (residential, educational, healthcare, or travellers accommodation) within an Inner Noise Boundary as shown on planning maps to protect the users from the adverse impacts of noise on their health and amenity values; and
- Acoustic attenuation measures are required for noise sensitive activities located within the Outer Noise Boundary to minimise adverse noise effects from motorsport on these activities.

In relation to Ruapuna, the Council considers that noise sensitive activities should not receive noise above 60dBA. Noise at or above this level has been described as unreasonable. The area which could be subject to unreasonable noise has been modelled and is shown on planning maps as the Inner Noise Boundary. Noise sensitive activities are tightly controlled within this area.

The plan also includes controls in relation to the Carrs Road Kart Club including restrictions on when motorsport can occur and the allowable noise level.

Volume 3 Part 1 Definitions

**Noise Sensitive Activities**

- Residential activities other than those in conjunction with rural activities that comply with the rules in the relevant district plan as at 23 August 2008;
- Education activities including pre-school places or premises, but not including flight training, trade training or other industry related training facilities located within the Special Purpose (Airport) Zone in the Christchurch District Plan or on other land used or available for business activities;
- Travellers accommodation except that which is designed, constructed and operated to a standard that mitigates the effects of noise on occupants;
- Hospitals, healthcare facilities and any elderly persons housing or complex.

Volume 3 Part 4 Rural Zones

**Critical Standards**

2.5.3 Separation from special purpose areas (Rural 1, 2, 3, 4 and 5 Zones)

1. Any residential unit shall not be erected within:
   (a) 400 metres of the Special Purpose (Landfill) Zone boundary;
   (b) 250 metres of the boundary of scheduled sewage treatment plants at Belfast and Templeton;
   (c) 400 metres of the Ruapuna Raceway (Open Space 3 Zone boundary);
   (d) 250 metres of the Carrs Road Speedway (Open Space 3 Zone boundary);
   (e) 200m of a Rural Quarry Zone boundary.

2. Any new noise sensitive activity shall not be located within the Inner Noise Boundary surrounding Ruapuna Motorsport Park as shown on the relevant planning maps:
2.5.15 Noise Sensitive Activities – Ruapuna Noise Boundary

In any Rural zone other than Rural Quarry, any new noise sensitive activity (including additions in areas specified at (i) - (iii) below) proposed within the Inner or Outer Noise Boundary relating to Ruapuna Motorsport Park as shown on the relevant planning maps shall be designed to ensure the following indoor sound levels are not exceeded (with windows and doors closed):

(i) Sleeping areas: 45dBA $L_{A_{max}}$;
(ii) Other habitable areas: 55dBA $L_{A_{max}}$; and
(iii) For education facilities - teaching, assembly or study areas: 55dBA $L_{A_{max}}$.

For residential units, compliance with these limits shall be achieved using either the residential design solutions at Volume 3 Part 4 Appendix 7 (Residential Construction Standards – Ruapuna Motorsport Park). Otherwise the building design shall be supported by a report (including calculations) from a suitably qualified acoustic consultant, and submitted with application for building consent.

For the purpose of sound insulation calculations, the external noise levels for a site shall be based on the design noise spectrum below and deemed noise levels of 75dBA $L_{A_{max}}$ at the Outer Noise Boundary and 80dBA $L_{A_{max}}$ at the Inner Noise Boundary.

<table>
<thead>
<tr>
<th>Octave Centre Frequency (Hz)</th>
<th>63</th>
<th>125</th>
<th>250</th>
<th>500</th>
<th>1000</th>
<th>2000</th>
<th>4000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correction to $L_{A_{max}}$</td>
<td>-6</td>
<td>-1</td>
<td>-1</td>
<td>-1</td>
<td>-6</td>
<td>-8</td>
<td>-11</td>
</tr>
</tbody>
</table>

Reasons for Rules

5.1.23 Ruapuna noise exposure

Rules have been established so as to avoid or mitigate the effects of motorsport noise on noise sensitive activities in the vicinity of Ruapuna Motorsport Park.

At Ruapuna, the noise effects of motor racing are addressed by limiting motorsport activities, and managing the location and design of noise sensitive activities, within the noise boundaries as shown on the relevant planning maps. The noise boundaries are the outcome of modelling work based on data collected at Ruapuna in 2005/06 and 2010/11.

Within the Inner Noise Boundary, the establishment of new noise sensitive activities (any residential unit, education facility, healthcare facility, or travellers accommodation) should be discouraged reflecting the likelihood that activities that establish in this area would be subject to unreasonable noise from motorsport activities. Within the Outer Noise Boundary, the establishment of new noise sensitive activities should be discouraged unless the dwelling can meet acoustic insulation requirements, Noise from Ruapuna will be clearly audible in this area and needs to be managed.

The rule provides that noise sensitive activities be either in accordance with the construction standards at Appendix 7 (Volume 3 Part 4) or a report be provided as part of the building consent process, and would include design information sufficient to determine that the prescribed indoor sound levels would be met. In
the event these levels could or would not be met, resource consent for a non-complying activity would be necessary. The building consent process ensures proposals for new residential units appropriately take into consideration noise generated by activities at Ruapuna. This has the twofold effect of ensuring that new residences provide the best living environment possible for that location and minimising complaints about activities at Ruapuna from occupants of new residences while allowing motorsports to continue to give enjoyment to a sector of the community and visitors to Christchurch.

Volume 3 Part 11 Health and Safety

1.2.1 Measurement, calculation and application of sound levels
For the purposes of the application of these rules, and except where otherwise stated, measurement and calculation of the levels of sound emission from any activity shall be as follows:

(i) method of sound level measurement and descriptions and definitions used shall be in accordance with NZS 6801:1991 "Measurement of Sound";

(ii) in relation to rule 1.3.5 (ii) (Volume 3 Part 11), method of sound level measurement and definitions used shall be in accordance with NZS6801:2008 (Acoustics - Measurement of Environmental Sound) and NZS6802:2008 (Acoustics - Environmental Sound) except that provisions in NZS6802 referring to Special Audible Characteristics and Duration shall not be applied.

(iii) when calculations are necessary for the prediction of sound level emissions from an activity for the purposes of design or assessment of the activity, then the calculations shall be applied at the boundaries of the site which contains the activity, except as provided for under Clause 1.3.1(b).

For the purpose of applying these rules, the noise level standards shall apply at any point on and beyond the boundary of the site containing an activity generating noise, except as provided under Clauses 1.3.1 and 1.3.4.1.3.5.

Except where otherwise defined in these rules, "boundaries" means the boundaries of a "site" as defined in this Plan; or the boundaries of any lease or other agreement with the land owner; and the vertical extension of these boundaries. Where these rules refer to any location on or beyond the boundaries, this shall be deemed to include any one or more locations on a boundary, or beyond a boundary.

1.3.5 Special exceptions to these rules
(a) Open Space 3 Zone (Ruapuna Raceway Motorsport Park and Carrs Road Raceway).

Notwithstanding the provisions of Clause 1.3.3 and Table 1 the following exception shall apply:

Community standards
Any activity which exceeds the standard specified below, shall be a discretionary activity.

(i) Carrs Road Raceway

(...)

(ii) Ruapuna Raceway
Operational noise levels of 90dBA $L_{max}$ and 65dBA $L_{10}$ (1-hour) to apply between the hours of 0900 and 2200 hours on any day of the calendar year, except that:

- for up to 200 days in any calendar year, the permitted levels shall be 95dBA $L_{max}$ and 80dBA $L_{10}$ (1-hour), between the hours of 0900 and 2300;
- for up to 15 of those 200 days, these activities shall be permitted up to 2400 hours;
- on up to 5 of those 200 days, no $L_{max}$ level shall be applied.

All levels are to be applied at the boundaries of the Park. At all other times, the levels of the Open Space 3 Zone shall apply.

(ii) Ruapuna Motorsport Park

Activity at Ruapuna Motorsport Park shall occur in accordance with the following:

1. **Non-motorised activities** shall be permitted where they meet all of the following criteria:
   - noise levels at the boundary shall not exceed 75dBA $L_{Amax}$ or 50dBA $L_{Aeq}$;
   - hours of operation shall be between the hours of 9am – 10pm;
   - use of a public address system or other amplified sound shall not occur for more than 30 minutes per day.

2. **Motorised activities** shall be permitted:
   - on any weekday at the racetrack;
   - for not more than 20 days per year at the speedway; and
   - on any day at the radio control car track for practice and racing of electric vehicles only, and on not more than 50 days for any racing event at the radio control car track including vehicles with internal combustion engines;

   where they meet all of the following criteria:
   - noise levels at the boundary do not exceed 90dBA $L_{Amax}$ or 65dBA $L_{Aeq}$;
   - hours of operation shall be between the hours of 9am – 6pm;
   - use of a public address system or other amplified sound shall occur only during a racing activity.

3. **Motorised activities** shall be permitted
   - at the racetrack: on any Saturday or Sunday plus a further 50 days per year;
   - at the speedway: for not more than 20 days per year;

   where they meet all of the following criteria:
   - noise levels at the boundary shall not exceed 95dBA $L_{Amax}$ or 80dBA $L_{Aeq}$;
   - hours of operation shall be between 9am – 6pm at the racetrack except that racing may continue until 8pm on the days specified at (c)(5); and 12pm – 10pm at the speedway, except that the speedway may operate until 11pm on 10 days per year;
   - use of a public address system or other amplified sound shall occur only during a racing activity at the speedway or as specified at for the racetrack in this clause;
• racing at the racetrack shall only occur on Saturdays, Sundays and up to five Fridays per year;
• Formula 5000s: noise levels at the boundary shall not exceed 105dBA $L_{A_{max}}$ or 90dBA $L_{A_{eq}}$. Activity involving F5000 vehicles shall not occur on more than four race days and two practice / testing days per year and there shall not be more than 90 minutes racing per day;
• Drag racing: noise levels at the boundary shall not exceed 105dBA $L_{A_{max}}$ or 80dBA $L_{A_{eq}}$. Drag racing shall not occur on more than 10 days per year.

4. (a) motorised activities at the racetrack and radio controlled car club are a non-complying activity on the following public holidays:
• Good Friday and Easter Monday;
• ANZAC Day prior to 1pm;
• Christmas Day and Boxing Day; and
• New Years Day.

(b) motorised activities at the speedway are a non-complying activity on the following public holidays:
• Good Friday
• ANZAC Day
• Christmas Day and Boxing Day; and
• New Years Day.

For the purposes of this rule:
• Noise from Ruapuna Motorsport Park shall be measured in accordance with New Zealand Standard NZS 6801:2008 Acoustics – Measurement of environmental sound, and assessed in accordance with NZS 6802:2008 Acoustics - Environmental noise, except that any penalty for special audible characteristics and/or duration (paragraphs 6.3 and 6.4) shall not apply.
• Boundary shall mean the boundary of any site not within the OS3 (Ruapuna Raceway) zone.
• The lessees of the Ruapuna Motorsport Park shall maintain a log of racing, training, practicing, testing, and all other events. The log is to be made available to the Council upon request and should include as a minimum: the type of activity, event name if applicable, and start/finish times.
• Data from any permanent logger at Ruapuna Motorsport Park may be deemed sufficient to determine compliance. The location of the logger will be selected by the Council.
• ‘Racing’ shall mean a contest of speed or time involving any motorised vehicle, between two or more vehicles competing either consecutively or concurrently. Racing shall specifically exclude testing, training, and practice sessions.
• ‘Motorised activities’ shall mean any use or activity involving the operation of a vehicle powered by any type of engine. This includes, but is not limited to, racing, practising, testing, and driver training.

Volume 3 Part 4 Rural Zones

Appendix 7 – Residential Construction Standards for dwellings within the Inner Noise Boundary– Ruapuna Motorsport Park
<table>
<thead>
<tr>
<th></th>
<th>Acceptable Solution 1</th>
<th>Acceptable Solution 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Floors (all spaces)</strong></td>
<td>Concrete slab at ground level</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>No limitations for upper storeys</td>
<td></td>
</tr>
<tr>
<td><strong>Bedrooms</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roof/Ceiling</td>
<td>0.55 mm thick pitched profiled metal roofing, with horizontal ceiling consisting of 2 layers 13 mm thick Noiseline Gib, plus thermal insulation. No recessed lights.</td>
<td>Concrete tiles (min 45 kg/m$^2$), with horizontal ceiling consisting of 1 layer 10 mm thick standard gypsum board, plus thermal insulation. Recessed lights permitted.</td>
</tr>
<tr>
<td>Walls</td>
<td>Brick veneer (minimum 70 mm thick) over ex 100 mm timber frame, lined internally with 1 layer 10 mm thick standard gypsum board, plus thermal insulation.</td>
<td>Weatherboards (16 mm thick), on ex 100 mm timber frame, plus steel channels on resilient sound isolation clips (RSIC) or equivalent. Internal lining of 2 layers 13 mm thick Noiseline Gib. Thermal insulation.</td>
</tr>
<tr>
<td>Windows</td>
<td>4/12/4 thermal double glazing to outer face of building.</td>
<td>{no alternative}</td>
</tr>
<tr>
<td></td>
<td>Secondary pane of laminated glass minimum 7 mm thick, not less than 100 mm inside double glazing.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total area of windows must not exceed 20% of total external wall area of bedroom.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>All windows to be in aluminium frames with full perimeter seals to all opening panes.</td>
<td></td>
</tr>
<tr>
<td>External Doors</td>
<td>Not permitted</td>
<td>Not permitted</td>
</tr>
<tr>
<td><strong>Other habitable areas</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roof/Ceiling</td>
<td>0.55 mm thick pitched profiled metal roofing, with horizontal ceiling consisting of 1 layer 10 mm thick Noiseline Gib, plus thermal insulation. Recessed lights permitted.</td>
<td>Concrete tiles (min 45 kg/m$^2$), with horizontal ceiling consisting of 1 layer 10 mm thick standard gypsum board, plus thermal insulation. Recessed lights permitted.</td>
</tr>
<tr>
<td>Walls</td>
<td>Brick veneer (minimum 70 mm thick) over ex 100 mm timber frame, lined internally with 1 layer 10 mm thick standard gypsum board, plus thermal insulation.</td>
<td>Weatherboards (16 mm thick), on ex 100 mm timber frame lined internally with 1 layer 10 mm thick standard gypsum board, plus thermal insulation.</td>
</tr>
<tr>
<td></td>
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<td><strong>Acceptable Solution 2</strong></td>
</tr>
<tr>
<td>--------------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Windows</strong></td>
<td>4/12/4 thermal double glazing to outer face of building.</td>
<td>10.38 mm thick laminated glass.</td>
</tr>
<tr>
<td></td>
<td>Secondary pane of glass minimum 4 mm thick not less than 100 mm inside double glazing.</td>
<td>Total area of all external doors and windows combined must not exceed 40% of total external wall area of the room.</td>
</tr>
<tr>
<td></td>
<td>Total area of all external doors and windows combined must not exceed 40% of total external wall area of the room.</td>
<td></td>
</tr>
<tr>
<td><strong>External Doors</strong></td>
<td>10.38 mm thick laminated glass in aluminium frame with full perimeter seals.</td>
<td>Solid timber door, not less than 45 mm thick in aluminium frame with full perimeter seals.</td>
</tr>
<tr>
<td></td>
<td>Total area of all external doors and windows combined must not exceed 40% of total external wall area of the room.</td>
<td>Total area of all external doors and windows combined must not exceed 40% of total external wall area of the room.</td>
</tr>
</tbody>
</table>

**Planning Maps**
29B, 35B, 36B, 42B, 43B