

# **RUAPUNA MOTORSPORT PARK**

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## **RACEWAY NOISE MANAGEMENT PLAN (RNMP)**

**Valid from  
1<sup>st</sup> July 2025**

**Relating to  
RUAPUNA PARK RACEWAY,  
(EUROMARQUE MOTORSPORT PARK)  
CHRISTCHURCH, NEW ZEALAND**

**Version 1.6**

## Version

| Version                   | Date                 | Prepared by                                | Comments  |
|---------------------------|----------------------|--|---|
| <b>Drafts 0.1 to 0.13</b> | 28/10/13 to 11/06/14 | Stephen Chiles, Nicola Rykers, Keith Cowan | Thirteen draft versions of the RNMP developed during mediation on Plan Change 52                            |
| <b>1.0</b>                | 26/08/16             | Stephen Chiles, Keith Cowan                | Draft RNMP amended to comply with the Environment Court decision on PC52 and the Christchurch District Plan |
| <b>1.1</b>                | 19/09/16             | Stephen Chiles, Keith Cowan                | Minor amendments made, as recommended by Council certifier (no other changes made)                          |
| <b>1.2</b>                | 19/06/19             | Mark Wederell                              | Update for 2019-20 Season.  |
| <b>1.3</b>                | 04/05/2022           | Mark Wederell                              | Update for 2022-23 Season   |
| <b>1.4</b>                | <b>1/7/2024</b>      | <b>Mark Wederell</b>                       | <b>Update for 2024-25 Season</b>  |
| <b>1.5</b>                | <b>1/7/25</b>        | <b>Mark Wederell</b>                       | <b>Update to 2025-26 Season</b>   |
| <b>1.6</b>                | <b>9/4/26</b>        | <b>Chris Protheroe</b>                     | <b>Included council monitoring guidelines</b>   |

## Certification (District Plan Rule 21.10.2.2.4)

| Action                           | Details  |
|----------------------------------|--|
| RNMP submitted for certification | Version 1.0 sent to Head of Planning and Strategic Transport on 02/09/16 |
| Council appointed certifier      | John Alps  |
| Certification                    | Certification provided on 13/09/16, subject to comments in Appendix H    |

## 1. Purpose and Objectives

### 1.1 Purpose

To set out procedures to manage the noise impacts on local residents from activity at the Ruapuna Park Raceway.

### 1.2 Objectives

- A) The raceway continues to operate in compliance with the noise limits in the Christchurch District Plan.
- B) The Canterbury Car Club ensures adverse noise effects on the surrounding community and environment are effectively managed to not increase and, if practicable, are reduced.
- C) The Canterbury Car Club and local residents work together to become good neighbours.

### 1.3 Summary

This Raceway Noise Management Plan (RNMP) has been produced by the Canterbury Car Club Incorporated (Car Club) and provides the framework and mechanism for the management of noise relating to the Ruapuna Motorsport Park (motor racing circuit). The Car Club is the operator of the raceway.

The primary aim in implementing this RNMP is to reduce the impact of raceway noise within the local community. In addition, it provides the necessary controls for track related activities to ensure compliance with the requirements of the Christchurch District Plan (a copy of these is included in Appendix I). This RNMP meets the requirement for a Noise Management Plan for the raceway as set out in Rule 21.10.2.2.4 of the District Plan (see Appendix G).

This RNMP is intended to be a dynamic management document to ensure continual improvement. It sets out the management procedures, processes and controls which cover all aspects of mitigating noise impacts. The RNMP will be regularly reviewed in line with good operational practice and improvements in noise measurement techniques and noise mitigation measures. It is therefore subject to revised versions being published at the discretion of the Car Club or in accordance with the annual review process set out in Section 13.

## 2. Background

### 2.1 Activities

Ruapuna Park is publicly owned and administered by the Christchurch City Council (Council). The part of the park that includes the raceway and associated facilities is used by the Car Club. The remainder of the park including the Ruapuna Speedway (speedway) and radio control car track is used by the Christchurch Speedway Association Incorporated (Speedway Association). The areas used by each organisation are shown in the figure below.

This Raceway Noise Management Plan (RNMP) is operated by the Car Club and relates to the raceway. The Speedway Association operates a separate Speedway Noise Management Plan (SNMP) for the speedway. Both plans have consistent procedures and specify a combined Community Liaison Committee (CLC) as set out below.



## 2.2 Raceway usage

While the raceway has been set up as a purpose-built motorsport venue, it can also be used for a wide range of other types of sporting, social, and business events. The types of event include but are not limited to:

- Motorsport
- Motor safety and skills training
- Motor safety testing
- Motor racing construction and maintenance
- Cycling
- Athletics
- Business meetings and displays
- Social engagements

Some events at the raceway are run by the Car Club. In other cases, the Car Club hires the raceway facilities to other organisations to run events, including both motorsport events and other activities. Each year there are in the order of 300 events at the raceway comprising approximately 80 different event types, controlled by around 30 different groups. The raceway is the only motor racing circuit facility in Christchurch, following the closure of the Wigram race circuit around 2000. The activity from Wigram was largely transferred to Ruapuna, resulting in an increase in activity at Ruapuna.

The majority of events are run between 1 August and 30 April each year.

## 2.3 Noise effects on residents

The main sound sources affecting local residents from Ruapuna Park are vehicles on the raceway and speedway, announcements and commentary on the public address systems, and associated traffic on local roads.

A Noise Feedback Form (Appendix C) has been provided to local residents to record the date, time and nature of any noise annoyances. Completed forms are to be returned to the Motorsport Park Manager and the information will be used by the Car Club to identify the types of events and activities that cause annoyance. The Car Club proposes to prioritise its initiatives and resources for noise reduction on those activities which cause the most annoyance.

### 3. Personnel

Outcome sought is for there to be a single point of responsibility for noise management.

#### 3.1 Responsibility

The Motorsport Park General Manager (Mark Wederell) is responsible for the implementation of this RNMP for the Car Club.

Where elements of this RNMP are reliant on actions by others such as the Council, Community Liaison Committee, Speedway Association and track hirers/users, the Car Club will work proactively with those parties to achieve the objectives of this RNMP. The Car Club maintains ultimate responsibility and if particular initiatives for noise reduction are unsuccessful then the procedures in this RNMP will be revised accordingly to use other methods to achieve the objectives.

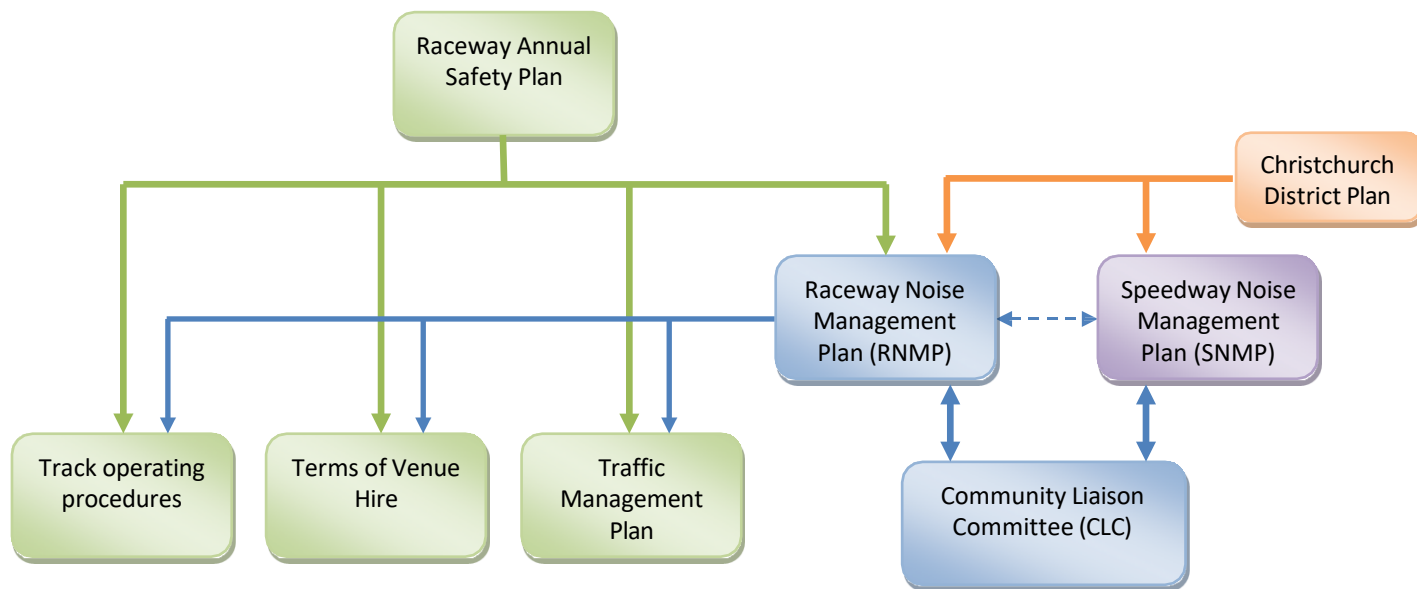
#### 3.2 Contact details

Contact details for the Motorsport Park General Manager and other people relevant to this RNMP are provided in the following table. This includes contacts for the main organisations that hire the track.

| Name                       | Organisation | Role                            | Phone       | Mobile | Email                         |
|----------------------------|--------------|---------------------------------|-------------|--------|-------------------------------|
| Mark Wederell              | Car Club     | Motorsport Park General Manager | 03 349 6003 |        | mark@canterburycarclub.co.nz  |
| Canterbury Car Club Office | Car Club     | Noise complaints contact        | 03 349 6003 |        | admin@canterburycarclub.co.nz |
| John Alps                  | Council      | Noise monitoring                | 03 941 8822 |        | john.alps@ccc.govt.nz         |

## 4. Operating Plans

The raceway functions under procedures covering all aspects of the operation. This RNMP fits into those procedures as shown in the following diagram. The figure also shows the relationship to the Christchurch District Plan and the SNMP. The Car Club has requested FIA/Motorsport NZ adds a requirement for adherence to this RNMP in the joint undertakings in the Annual Safety Plan.



## 5. Community Liaison

### 5.1 Committee

The Community Liaison Committee detailed in this section operates under both the RNMP and SNMP. Any amendments to this section of the RNMP must also be made to the corresponding section in the SNMP (and vice versa).

Outcome sought is for all stakeholders to identify activities causing noise disturbance together on an ongoing basis, and review effectiveness of controls implemented by the Car Club to address those noise effects.

#### 5.1.1 Purpose

The Community Liaison Committee (CLC) shall provide a forum for local residents, the Car Club, Speedway Association, and Council to oversee noise management practices under this RNMP and the SNMP.

#### 5.1.2 Membership

In accordance with Rule 21.10.2.2.5(a)(i) of the District Plan, the CLC will comprise:

- Independent chairperson to be appointed by the City Council
- 3 members – residents who live in the general area surrounding Ruapuna Park (initially to be 2 members from the Templeton Residents Association and 1 member from Quieter Please)
- 2 members – Car Club
- 1 member – Speedway
- 1 member – Council

#### 5.1.3 Membership Roles

- a. Chairperson
  - i. presides over committee meetings and ensure that time in meetings is used productively;
  - ii. provide overall leadership to the committee;
  - iii. manage any conflicts of interest; and
  - iv. ensure that good relations are maintained between the committee and the local community.
- b. Car Club
  - i. represents the raceway users who are responsible for the noise-generating activities at Ruapuna Park; and
  - ii. present the views of the raceway users they represent.
- c. Speedway
  - i. represents the speedway users who are responsible for the noise-generating activities at Ruapuna Park; and
  - ii. present the views of the speedway users they represent.
- d. Council
  - i. provide advice on Council processes; and
  - ii. provide a link back to the Council through the Community Board i.e. bringing any issues back, sourcing any additional resources, reporting back, etc.
- e. Local residents
  - i. presents the views of the local residents and community (including neighbouring properties and special interest groups);
  - ii. ensure resident and community views have a direct route into the noise management process; and
  - iii. promote communication and understanding between the residents/community and Ruapuna Motorsport Park users, and providing regular feedback on the deliberations of the CLC.

#### 5.1.4 Appointment of CLC members

The chairperson will appoint community members as required.

The Car Club, Speedway and Council will advise the chairperson of their nominated representatives on the CLC, and of any subsequent changes.

Current CLC members are:

| Name            | Organisation            | Office Phone | Mobile       | Email                         |
|-----------------|-------------------------|--------------|--------------|-------------------------------|
| Laurie McCallum | Independent Chairperson |              | 027 200 4807 | lc.mccallum@xtra.co.nz        |
| John Cunningham | Resident                |              | 021 109 0925 | harrythecat@xtra.co.nz        |
| Warwick Wright  | Resident                |              |              | warwick.wright56@gmail.com    |
| Tracey Riley    | Resident                |              | 021 872 236  | tj.riley@xtra.co.nz           |
| Mark Wederell   | Car Club                | 03 349 6003  |              | mark@canterburycarclub.co.nz  |
| Chris Protheroe | Car Club                | 03 349 6003  |              | chris@canterburycarclub.co.nz |
| Allan Daly      | Speedway                |              |              | allan@avoninsurance.co.nz     |
| Henk Buunk      | Council                 |              |              | Henk.buunk@ccc.govt.nz        |

#### 5.1.4 Meeting procedures

The Car Club will provide the CLC secretariat.

The CLC will meet at least four times a year, unless otherwise agreed by the CLC. For each meeting the Car Club will submit a draft agenda and proposed date to the chairperson at least two weeks before the meeting, and once approved by the chairman will circulate these by email to all CLC members. Meetings will be held at the Car Club unless the Car Club arranges an alternative venue. The Car Club will take minutes at meetings and will submit these to the chairperson for approval within one week of each meeting. Once approved the Car Club will circulate the minutes by email to all CLC members.

#### 5.1.5 Dispute resolution procedures

In accordance with Rule 21.10.2.2.5(a)(iv) of the District Plan the following sets out the process for resolving disputes within the CLC.

The CLC serves an advisory function to the Car Club and Speedway, to identify, develop, prioritise and review their noise management actions. The CLC should operate by consensus, but in cases of disagreement the chairperson is responsible for resolving differences where practical, and ultimately setting out the position of the CLC to the Car Club and Speedway. If any members of the CLC remain dissatisfied whether the CLC is operating in accordance with the requirements of the District Plan, those issues should be raised directly with the Council's Head of Planning and Strategic Transport.

## 5.2 Public Information

Outcome sought is for local residents to:

- have an understanding of activities conducted at the raceway;
- have advance warning of when each type of activity will be occurring;
- understand the processes in place for noise management; and
- have mechanisms/contacts to communicate with the Canterbury Car Club and other stakeholders.

The methods to achieve these outcomes will be:

- The Car Club and Speedway Association will put a joint notice in a suitable publication in September each year. The notice will:
  - provide a website link to the provisional programme of all activity for the season at both the raceway and speedway, including days under Rule 21.10.2.2.1, test days, and a more detailed view of the current month's events (updated after changes/cancellations) showing the times and noise category of each event, and days with late starting times on the raceway when there is a speedway event.
  - provide links to the RNMP and SNMP online.
  - invite local residents to either attend a public open day at the raceway and speedway or offer free entry to an event.
  - include details of the CLC, resident contacts, and scheduled meeting dates. Contact details will also be given for the Council and the RNMP and SNMP noise complaint contacts.
- The current version of this RNMP will be posted online.
- Council boundary noise monitoring information will be available to the public as detailed in Section 6.2.
- By receiving feedback through residents use of the Noise Feedback Form (included in Annexure C).

## 6. District Plan

### 6.1. Noise limits

The District Plan limits the use of the raceway. Raceway activities may only occur in compliance with the parameters set out in the following table (abbreviated from Table 1 in Appendix I), with noise limits applying at the boundary noise logger. To assist with tracking use of the raceway each limit has been assigned a category. For consistency with processes used from draft versions of this RNMP, these categories are assigned in reverse order.

| Cat | Activity                         | Days    | Max days              | L <sub>Aeq</sub> | L <sub>AFmax</sub> | Hours                 |
|-----|----------------------------------|---------|-----------------------|------------------|--------------------|-----------------------|
| F   | Non-race vehicles up to 100 km/h | Mon     | 50                    | 65dB             | 85dB               | 0900-1800             |
| E   | Motor racing vehicles            | Tue-Sun | 90                    | 65dB             | 90dB               | 0900-1800             |
| D   |                                  |         | 75                    | 70dB             | 90dB               | (0900-2000 for 5 days |
| C   |                                  |         | 120 (only 50 Tue-Fri) | 80dB             | 95dB               | Fri-Sun)              |
| B   | Drag racing                      | Tue-Sun | 5                     | 80dB             | 105dB              | 0900-1800             |
| A   | Special interest vehicles        | Tue-Sun | 6 (during above days) | 90dB             | 105dB              | 90 minutes, 1000-1700 |

All other activities at the raceway have to comply with noise limits at the site boundary of 50 dB L<sub>Aeq(15min)</sub>, 75 dB L<sub>AFmax</sub> during the day (0700-2200h) and 40 dB L<sub>Aeq(15min)</sub>, 65 dB L<sub>AFmax</sub> at night (Table 4 in Appendix I).

The District Plan also requires:

- any activity on the following days to comply with a noise limit of 40 dB L<sub>Aeq(15min)</sub>, 65 dB L<sub>AFmax</sub>, which precludes any motor racing vehicles: Good Friday, Easter Monday, 25 to 31 December, New Years Day, ANZAC Day.
- 10 weekend days scheduled between 31 October and 31 March (at least 4 of them between 2 January and 31 March) to only have activities in accordance with Table 4 in Appendix I (essentially non-motorsport activities).

### 6.2 Boundary noise monitoring

The Council own and operate a permanent noise logger at Ruapuna Park, for the purposes of monitoring compliance with the District Plan raceway noise limits set out above. The logger is located within the raceway close to the boundary with the speedway as shown below.



To achieve reliable measurements of both the raceway and speedway the logger location is elevated and is closer to the tracks than the legal boundary. However, testing has shown the noise logger records levels from the raceway that are approximately the same as the most exposed part of the site boundary. The raceway noise limits apply at this specific logger location and not at any other points on the site boundary.

For the speedway, sound levels at the logger differ from at the site boundary. This is discussed in the SNMP.

The logger consists of a Norsonic Nor140 Class 1 sound level meter, fitted with an outdoor microphone kit and powered by solar panels. Weather monitoring is included, giving wind speed and direction, temperature, and rainfall information. Council will perform a field calibration check on the logger at least every 6 months. The meter will be submitted for a full laboratory calibration every 2 years.

Data from the noise logger is automatically uploaded to the website, [www.noiseandweather.co.nz](http://www.noiseandweather.co.nz) every 15 minutes. The  $L_{Aeq(15min)}$ ,  $L_{AFmax}$  and weather data is publically available for under the site name "Ruapuna Speedway" with the password "race". Council will review this data following any complaints and at least once per month during the racing season.

The Council will follow up any breaches of the District Plan noise limits, including reporting any breach to the Car Club within one week of discovery.

If the Council reports any exceedances of the noise limits to the Car Club on the basis of measurements by this noise logger, the outcome sought is for any non-complying activity to be stopped as soon as possible and not to be repeated. The method the Car Club will adopt is that on receiving a complaint it will immediately investigate to confirm whether the levels relate to activity on the raceway. If exceedances are found to be due to activity on the raceway the specific vehicles causing the exceedance will be subject to the process set out in Section 8.3/Appendix D. The Car Club will independently review the noise logger data each day when motor racing vehicles are using the raceway to check compliance, and take corrective action if required, in advance of any notification from the Council.

## 7. Event/Activity Management

### 7.1 Park Use Log

Outcome sought is for the requirements of the District Plan to be easily verified in terms of the numbers, types, and timing of events. It is also desired for there to be information to verify processes in Section 8, relating to trackside monitoring, are being followed.

The Car Club will maintain a log of all activity at the raceway. The log will include:

- Date
- Event/activity organiser/hirer
- Named person responsible for noise management
- Event noise limits
- Start/finish times
- Summary of trackside noise levels if monitored
- Actions taken on vehicles exceeding trackside limits
- Complaints received and actions taken in response

The log will be formatted so the total number of days for each noise limit can be readily determined. The log will be presented to each CLC meeting.

### 7.2 Bookings

Outcome sought is that activity is only booked at the raceway that fits within the District Plan restrictions, and that there is clear responsibility for noise management for each activity.

The following requirements apply to activities organised by both the Car Club and hirers of the track. When making any booking for the raceway the Car Club will:

1. Determine the activity noise limits
2. Check whether the activity can be undertaken in accordance with the District Plan restrictions
3. Establish the named person responsible for noise management during the activity, demand them to take responsibility for noise management at their event, and provide training to that person about this RNMP as required

### 7.3 Track Hire

Outcome sought is that track hirers understand noise impacts and restrictions and apply effective noise management in accordance with this RNMP.

The hirer of the track will be responsible for noise management of their activity. The Car Club will include a contractual requirement for hirers to operate in accordance with this RNMP as part of the Terms of Hire. The Car Club will provide training for each hiring organisation to include:

- Overview of this RNMP
- Restrictions on the raceway in the District Plan
- Potential noise effects on neighbouring residents
- Operation of the trackside monitor

Following each event/activity the hirer will submit a report to the Car Club with details to complete the park use log.

#### **7.4 Open Test Days (trackside limit 95 dB)**

Outcome sought is that track users understand noise impacts and restrictions and for their vehicles to comply with the trackside noise limits set out in Section 8.1.

The Car Club will be directly responsible for noise management during open test days. All users of the raceway during open test days will be required to accept the terms of the Track User Agreement, which will include an acknowledgement of this RNMP and individual vehicle noise limits. The Car Club will provide a briefing to each user of the raceway during open test days to include:

- Overview of this RNMP
- Restrictions on the raceway in the District Plan
- Potential noise effects on neighbouring residents
- Trackside monitoring

#### **7.5 Operating Procedures**

Outcome sought is for the procedures in this RNMP to be consistently applied to all activities at the raceway.

During activities on the raceway the person responsible for noise management will:

- Ensure that trackside noise monitoring is conducted and acted upon in accordance with Sections 8.2 and 8.3
- Act on any noise limit exceedances at the boundary noise logger (Section 6.2)
- Address any complaints received in accordance with Section 12

## 8. Vehicle Noise Management

### 8.1 Vehicle noise limits

Other than special interest and drag racing vehicles, the outcome sought is for vehicles using the track to be subject to a trackside noise limit as a noise management tool. The limit is the same as the MotorSport NZ standard, and it will be updated to reflect any changes to that standard.

In addition to all noise emissions from the raceway being in accordance with the District Plan noise limits set out in Section 6, the Car Club voluntarily imposes an additional noise limit on individual vehicles using the track.

This trackside noise limit does not apply to:

- Special interest vehicles
- Drag racing cars

For all other vehicles the trackside noise limit is 95 dB  $L_{AFmax}$  at a distance of 30 metres. The distance of 30 metres is measured from the edge of the sealed track. *[This position may change to be from the vehicle, subject to discussion with MotorSport NZ]* This limit has been set to be the same as the MotorSport NZ standard and it is intended that this limit be updated to reflect any changes in that standard. While most vehicles using the track are subject to the MotorSport NZ standard regardless, the raceway trackside noise limit in this RNMP applies to all classes of vehicles (other than special interest and drag racing vehicles). The current MotorSport NZ standard is set out in the MotorSport NZ Manual 35, Appendix 2, Schedule A, Clause 3.8:

“...

#### 3.8 Vehicle Noise Level:

*(1) Races: No vehicle may exceed 95dB(A). The measurement shall be taken thirty(30) metres at a right angle from the track at a point where the vehicle is at maximum power. No compensation for differing climatic conditions shall be applied.*

*(2) All Other Events: Noise emission from competition vehicles shall not exceed 95dB(A) and may be monitored at any time during an event, particularly where events include the use of public roads and vehicles are operated in close proximity to areas where excessive noise may be of significant concern, i.e. city-centres, residential areas, etc. Competitors are reminded of the importance of maintaining noise emissions to an environmentally acceptable level, and to ensure that, where appropriate, their vehicles are operated in a considerate and appropriate manner at all times.*

*(3) Noise Judgement: Noise Judges shall be appointed where there are noise emission limitations and the Clerk of the Course shall be the final arbiter in this matter. There is no right of protest between Competitors in relation to noise levels.*

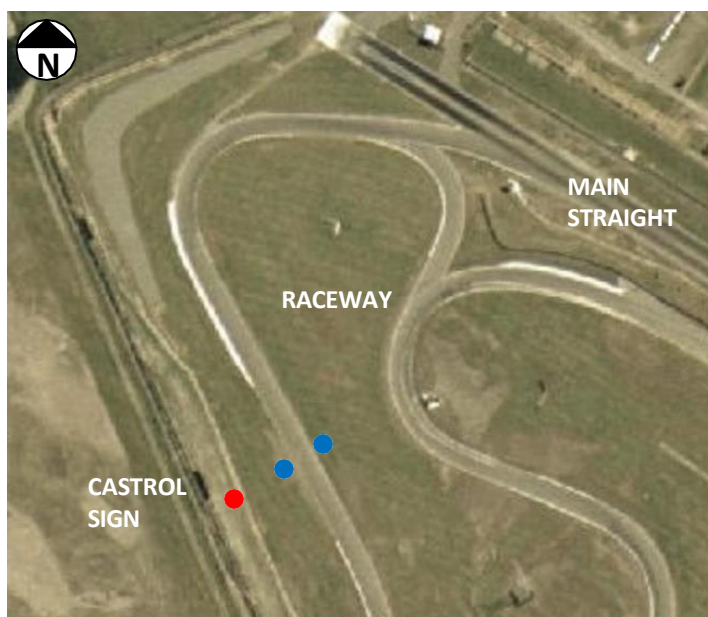
For the purpose of testing whether new or altered vehicles complies with this standard, a vehicle will be allowed to undertake up to three laps of the raceway, but will be required to operate at a reduced speed for the remainder of the circuit other than when approaching and passing the trackside monitor.

### 8.2 Monitoring

Outcome sought is for the Car Club, and track hirers, to verify that every vehicle using the track is complying with the trackside noise limit set out in Section 8.1.

At Race Meetings, the Car Club will monitor noise levels 30 metres from the vehicle path at the approximate locations shown in the following figure.

The monitoring will be undertaken using either a hand-held meter (red circle), or when operational and confirmed as being accurately calibrated, by an automated system with a microphone either side of the track (blue circles) (discussed below). The monitoring locations are at the left side of the “Castrol” sign.



Monitoring will be at an alternative location when vehicles are only using the A circuit.

An automated trackside noise monitor was installed in 2013/14, but did not prove robust. Further opportunities for a permanent monitor will continue to be explored as described in Sections 8.4 and 11. Monitoring will be manual (hand-held) until the new equipment is installed and operational.

The Car Club has a hand-held sound level meter. The meter is a Center 322. It is a Type 2 meter and during measurements will be set to measure with fast time-weighting and A-frequency-weighting. The Car Club will arrange with the Council for the calibration of the hand-held meter to be checked by the Council at least every six months when the boundary noise logger has its calibration checked.

When an automated system is available, trackside noise monitoring will be performed on all days when there are vehicles using the track, other than:

- 1) For vehicles that are not race vehicles when the track staff confirm from subjective evaluation that noise emissions are clearly below the trackside noise limit, and
- 2) For vehicles that regularly use the track, and have been confirmed as complying with the trackside noise limit within the last six months.

These arrangements for days when trackside monitoring will not be conducted will be reviewed with the CLC once data from an automated system is available.

For manual monitoring, measurements will be made for at least the first circuit of each vehicle, and further circuits if trackside noise levels are close to or over the limits. This monitoring will not take place in wet conditions where the monitoring equipment could be damaged.

The time and noise level for each vehicle pass-by during monitoring will be recorded, where individual vehicles can be distinguished.

Notes on acoustics issues associated with noise monitoring are included in Appendix F.

### 8.3 Action Plan

Outcome sought is for all vehicles on the raceway to be compliant with the noise limit in Section 8.1.

The Car Club is committed to a program of continuous monitoring of noise, and will continue to investigate new and more effective methods of performing this monitoring.

Please refer to Appendix D for the current Action Processes for Open Test Days and Race Events. These Action Processes will be updated as noise monitoring methods are developed. An audit trail of all actions is described in the Action Processes together with templates for Warning Notices (Appendix E).

### 8.4 Initiatives

Effect sought is a reduction in noise annoyance/disturbance from race vehicles for local residents.

The following have been identified by the CLC as potential future initiatives to reduce vehicle noise emissions/effects. This list currently includes some initiatives that have already been actioned during the development of the RNMP, as noted below.

#### A checking procedure for monitoring of race vehicles

- Implement automated trackside noise monitoring? – Equipment installed but found not to be robust. Alternative equipment under development is under ongoing review.
- Provide trackside monitoring results to the CLC? – Now operating regularly

#### Reducing noise levels from certain classes of vehicles

- For raceway management, use trackside noise limits as set out in Section 8.1? – Now operating daily
- Communicate noise requirements to all track users? – Now operating daily
- Investigate a reduced noise limit (e.g. 90 dB  $L_{AFmax}$  trackside) for vehicles that frequently use the track such as for driver training? – Now in operation
- Investigate whether the trackside noise limit could be reduced for some days, so the number of days with vehicles at up to 95 dB  $L_{AFmax}$  trackside is reduced? - Under continuous investigation.
- Investigate whether on days with vehicles up to 95 dB  $L_{AFmax}$  trackside, some vehicles could still operate under a lower trackside limit (e.g. hospitality activities)? – Under investigation
- Identify vehicles that might not generate high sound levels, but are causing the greatest annoyance to residents? – Now operating daily
- Review vehicles operating under a 105 dB  $L_{AFmax}$  boundary noise limit to see if any reduction is possible? – Under continuous investigation
- Investigate whether key drift school activities (e.g. 'round the cone') can be located away from more sensitive site boundaries, and/or activity durations minimised near site boundaries – Trialling to determine beneficial effect

#### Noise-free days following events

- Investigate the possibility of providing one noise-free day on some weekends? – Now required as set out in the District Plan (Rule 21.10.2.2.1)
- Investigate the possibility of a noise-free weekend following a two-day weekend event? – Now provided for to the extent required by the District Plan (Rule 21.10.2.2.1)

#### Voluntary restrictions on operations

- Investigate if practice days can be linked to events?
- Investigate reducing weekday test days from two to one per week? – Tuesday weekly test days have been curtailed

This list is not exhaustive, and it is the intention of the Car Club to extend these initiatives over time through further dialogue in a continuous process within the CLC. As initiatives are implemented, they will be transferred to Appendix B.

## 9. Track Facilities Noise Management

### 9.1 Public address systems

Outcome sought is to avoid and minimise noise annoyance/disturbance from the public address systems, and for any music from the public address systems to be inaudible at the nearest houses.

Permanent public address systems are installed at the raceway for background music and communication with drivers in the pits and for public announcements in the spectator areas.

To limit disturbance from the public address systems:

- Loudspeakers by spectator areas will only be used during events (not practice/test/qualifying days), will be limited to spectator areas in use and will be used only for voice announcements.
- Music played on the loudspeakers serving the pits will be at a background level that is not audible at the nearest houses.
- Public address systems will only be used between 0900h and 1800h, other than during race events when they may be used between 0900h and 2000h. The public address system in the pits may be used for race administration from 0830h during events.

### 9.2 Maintenance operations

Maintenance operations are generally expected not to generate any adverse noise effects or annoyance/disturbance for residents. However, as a precaution, all maintenance activities will be restricted to weekdays between 0900h and 1800h where practicable.

### 9.3 Initiatives

Effect sought is a reduction in noise annoyance/disturbance from public address systems for local residents.

The following have been identified as potential initiatives to reduce facilities noise emissions/effects:

- The loudspeakers serving the spectator areas are in the process of being replaced with a larger number of smaller directional loudspeakers mounted on higher poles. This would improve coverage for spectators and reduce noise emissions to neighbours.
- The loudspeakers for pits communication have been replaced with a larger number of smaller directional loudspeakers. This improves coverage and reduces noise emissions.

## 10. Spectator Noise Management

### 10.1 Traffic management

Outcome sought is to avoid and minimise noise annoyance/disturbance from traffic associated with a major event on public roads.

Spectator road-traffic associated with events has been reported as previously causing noise disturbance. This can be minimised by effective temporary traffic management.

The Car Club has a Traffic Management Plan, which sets the procedures for temporary traffic management during large events, when more than 1000 spectators are expected. Fulton Hogan is contracted to implement the Traffic Management Plan.

At the time of booking an event the Car Club will request information from the hirer to determine whether the Traffic Management Plan needs to be activated for that event and will ensure the hirer (or Car Club) engages Fulton Hogan.

The Car Club will inform the Police of all scheduled events at the start of the season so the Police can also monitor event related traffic as appropriate.

The Car Club will encourage spectators to leave the grounds quickly at the end of an event.

### **10.2 Spectators**

Noise complaints have not been received about spectators at the raceway. At this time, no specific management procedures are in place for noise from people.

### **10.3 Initiatives**

At this stage no initiatives have been identified for reducing spectator noise effects.

## **11. Noise Reduction and Management**

The following lists the top priorities for noise reduction and management initiatives. This prioritised list is informed by the initiatives identified in Sections 8.0 to 10.0. All initiatives listed in the above sections are important, but for practical implementation all cannot be actioned at once, and will therefore be progressively implemented over a number of seasons.

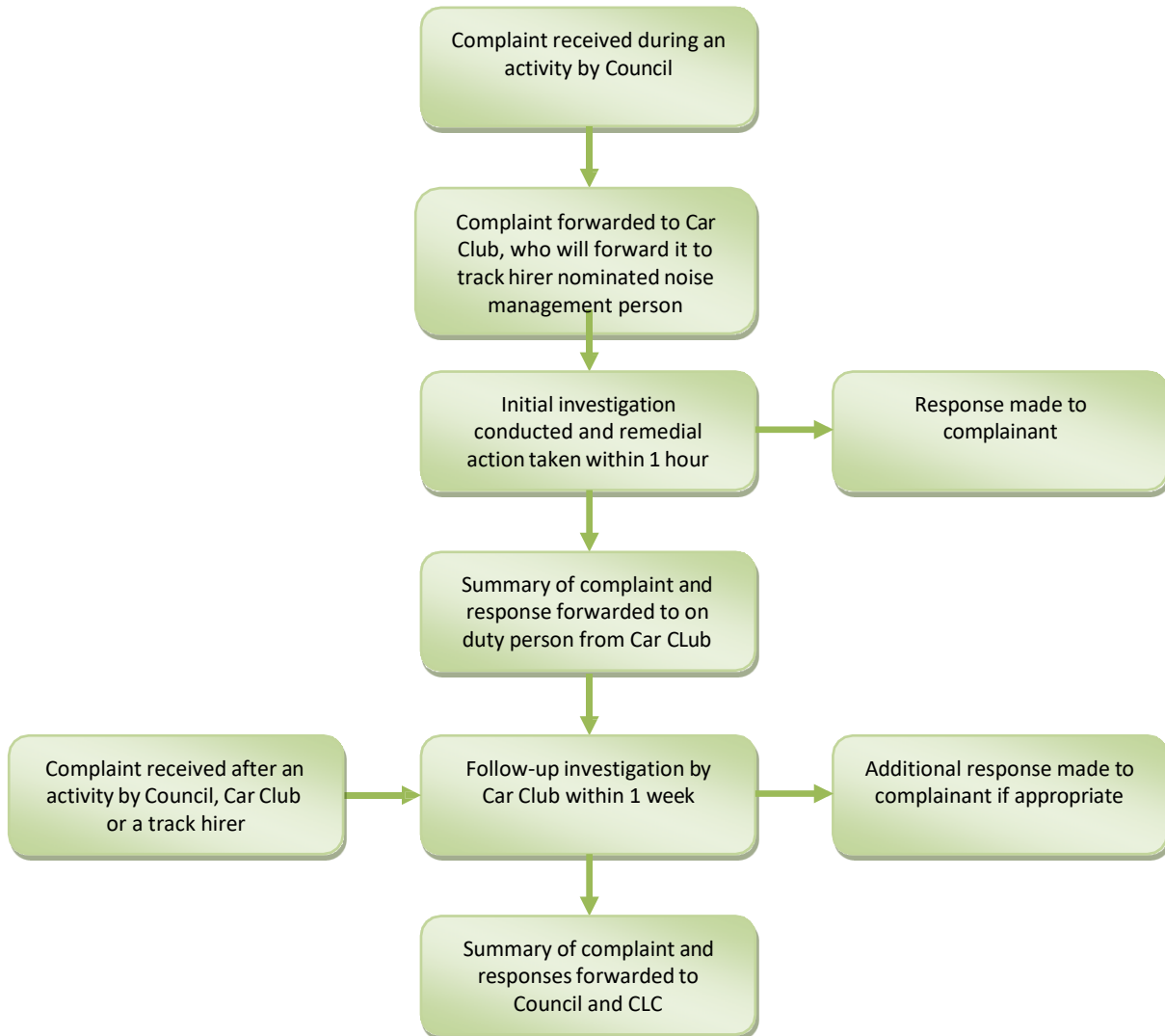
1. Engage with track hirers and communicate and provide training on new noise management responsibilities.
2. Investigate and implement automatic trackside noise monitoring.
3. Identify sources of noise annoyance to residents and investigate methods for reduction.

A log of all active and previous initiatives is set out in Appendix B to this RNMP.

## 12. Complaint Procedures

Outcome sought is for complaints to be addressed quickly and, if the complaint relates to excessive or unreasonable noise, for the situation causing the complaint not to be repeated.

The following flow chart sets out the procedure for addressing noise complaints from the public.



### **13. Review**

Outcome sought is for this RNMP to be continually improved, to achieve the objectives set out in Section 1.

In June each year, the CLC will review:

1. The track log
2. The complaints log
3. Noise feedback forms from residents
4. Trackside noise monitoring summary
5. Council noise monitoring summary
6. Outcome of any initiatives undertaken

The CLC will then review this RNMP. Following this review, the Car Club will issue a revised RNMP by 1<sup>st</sup> July each year. The revised RNMP does not require recertification under the District Plan.

Under the District Plan (Rule 21.10.2.2.4) the Council may also require review and recertification of this RNMP at any time.

## Appendix A – Terminology

### Abbreviations

| Abbreviation         | Full terminology                             |
|----------------------|--|
| Car Club             | Canterbury Car Club Incorporated             |
| CLC                  | Community Liaison Committee                  |
| Council              | Christchurch City Council                    |
| FIA                  | Federation Internationale de l'Automobile    |
| Raceway              | Ruapuna Park Raceway                         |
| RNMP                 | Raceway Noise Management Plan                |
| SNMP                 | Speedway Noise Management Plan               |
| Speedway             | Ruapuna Speedway                             |
| Speedway Association | Canterbury Speedway Association Incorporated |
| TMP                  | Traffic Management Plan                      |

### Definitions

| Term                     | Definition  |
|--------------------------|---|
| Drag racing              | means vehicles which race over a 400 metre distance, with a maximum of 2 vehicles at a time   |
| Special interest vehicle | means historic vehicles for which it is impracticable to achieve noise limits associated with standard racing vehicles, and shall include a F5000 vehicle   |
| Pits                     | means the area outside the circuit where vehicles form up prior to racing   |
| Practice/testing days    | means days when racers use the circuit to improve and enhance their skills and tune their race vehicles   |
| Race days                | means days where motor racing events take place   |
| Race events              | means between one and three consecutive race and associated practice days, normally on weekends and extending to practice prior to the event to cater for competitors arriving from outside Canterbury/NZ |
| Motor race vehicle       | Means a vehicle purpose built or modified to compete in motor racing  |
| Raceway                  | means the race circuit itself – a 3.3 km endless sealed road with safety points, and monitoring facilities  |

## Appendix B – Summary of noise management initiatives

The following is a record of completed initiatives and initiatives in progress.

| Desired outcome  | Method  | Dates trialled   | Resident/CLC feedback | Effect on noise levels | Implemented |
|--|---|------------------|-----------------------|------------------------|-------------|
| Consistent implementation of this RNMP for all activities  | The Car Club has engaged with all major track users and organisations which hire the raceway, and introduced this RNMP and the future noise requirements and their responsibility in meeting these requirements. All organisations, without exception, have accepted the need to comply as part of their terms of hire. This requirement is now reflected in revised hire agreements. The Car Club will continue to provide training and agree responsibilities for monitoring and actions during events. | 16 January 2014  |                       |                        | Yes         |
|  | The Car Club has implemented a culture of Noise Awareness. Some initiatives include signage at the Motorsport Park highlighting maximum noise allowances. More important is the drivers' briefings before each race meeting where all competing drivers are made fully aware of their obligations as regards noise and the consequences of breach.  | 5 April 2014     |                       |                        | Yes         |
|  | A formal infringement notice regime has been implemented by the club.   | 10 April 2014    |                       |                        | Yes         |
| <b>Noise monitoring</b>  |   |                  |                       |                        |             |
| a) Verification that all vehicles comply with the trackside noise limit<br>b) Efficient system for quickly identifying vehicles on the track exceeding the limit | The Car Club installed a MyLaps MX Noise Management system ( <a href="http://www.mylaps.com/en/timing-systems/mx-noise-management/636">www.mylaps.com/en/timing-systems/mx-noise-management/636</a> ). This did not prove to be robust, so the Car Club is continuing to review an alternative system being developed in New Zealand. When deployed, this automated trackside noise monitor should allow levels to be recorded for all circuits of all vehicles.  | 20 November 2013 |                       |                        |             |
| Verification that action is taken on noise monitoring results  | A daily management report is prepared and circulated to club management. It shows the noise meter results, shows promoted noise level, describes track activity, notes any exceedances and provides a record of corrective actions taken.   | 10 April 2014    |                       |                        | Yes         |
| <b>Public address systems (including pits)</b>   |   |                  |                       |                        |             |
| Reduce noise disturbance from the PA system  | The Car Club has electronically limited the noise level able to be emitted from the loudspeaker systems, to avoid exceedances by commentators with varying voice pitches.   | 24 January 2014  |                       |                        | Yes         |
| <b>Individual vehicle noise</b>  |   |                  |                       |                        |             |
| Reduce noise causing greatest annoyance for residents  | Noise feedback forms have been circulated so residents can provide information that will assist in identifying vehicles that cause greatest annoyance.  | 14 February 2014 |                       |                        | Yes         |
|  | The Car Club has approached local residents distributing feedback forms and proactively sought responses from them.   | 10 April 2014    |                       |                        | Yes         |
| Reduce use of days with a 105 dB L <sub>AFmax</sub> noise limit  | The Car Club is working with F5000 owners to comply with the 95 dB trackside noise limit where practicable rather than 105 dB L <sub>AFmax</sub> at the boundary noise logger. In the Environment Court decision on Plan Change 52 the F5000 category has been altered to special interest vehicles (which can include F5000).  | 8 April 2014     |                       |                        |             |

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**Motorsport NZ**

|                                  |   |                |     |
|----------------------------------|---|----------------|-----|
| National recognition of the RNMP | The Car Club has requested and confirmed that the FIA/MotorSport NZ will add the requirement to their Annual Safety Plan for the Euromarque Motorsport Park to adhere to this RNMP. | 8 January 2014 | Yes |
|----------------------------------|---|----------------|-----|

**Voluntary restrictions on operations**

|  |  |             |     |
|--|--|-------------|-----|
| Reduce noise disturbance in the evenings | The Car Club has investigated and agreed to reduce the number of twilight events to a minimum. While these events were generally only generating lower noise levels they occurred during a sensitive time for residents. | 14 Feb 2014 | Yes |
|--|--|-------------|-----|

|  |   |               |     |
|--|---|---------------|-----|
|  | The Car Club has investigated the duration of weekday activity, and in particular any opportunities for the finish time to be 5pm rather than 6pm (especially on Fridays)? It has agreed to lock access to the track at 5pm for most weekdays as the period from 1700h to 1800h has been reported to be a sensitive time for residents. | 10 April 2014 | Yes |
|--|---|---------------|-----|

|   |  |                 |     |
|---|--|-----------------|-----|
| Avoid unauthorised use of the circuit after hours | The Car Club has installed additional lockable security gates at each end of the pit lane to further restrict unauthorised access to the circuit. These gates are closed between 1700h and 1800h each day. | 10 January 2014 | Yes |
|---|--|-----------------|-----|

|  |  |              |     |
|--|--|--------------|-----|
|  | The Car Club has installed video cameras able to be interrogated remotely on the pit lane and main straight for improved visibility to activity on the circuit at all times. | 8 April 2014 | Yes |
|--|--|--------------|-----|

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## **Appendix D - Processes for noise above 95 dB (trackside)**

- A. Identification of vehicles
- B. Process – Open test days – Tuesday to Friday
- C. Process – Boundary noise meter daytime observation
- D. Process - Boundary noise meter retrospective discovery
- E. Process – Race meetings

### **A. Identification of vehicles**

There are two methods in use:

1. Where the daily boundary noise meter graph is printed and reviewed
2. Where staff at the circuit hear a possible breach and use the hand held noise meter to observe the noise level. This method will be mainly replaced by an automated transponder based noise management recording and identification system when it is in place.

### **B. Process – Open test days – Tuesday to Friday**

This process is aimed to enforce the 95 dB trackside noise limit. Identification will result from an observation under identification method 2 as the boundary noise meter has a 15 minute delay before activity levels are visible to Car Club staff.

1. The car will be black flagged into the pit lane
2. The Car Club staff and the driver/owner will discuss the observed trackside limit breach
3. The driver will be requested to rectify the noise prior to next utilising the circuit
4. An offer will be made to retest the vehicle following rectification
5. A Warning Notice (Appendix E) will be issued to the driver/owner to confirm the actions required
6. A copy of the Warning Notice will be filed with the daily boundary meter graph

### **C. Process – Boundary noise meter daytime observation**

This process is aimed to enforce the District Plan noise limits as documented in Section 6. Identification will result from a concern by the Car Club staff that a vehicle may not only be in breach of the trackside noise limit, but also the boundary noise limit. Car Club staff will obtain the manual noise meter reading and follow Noise Process B, but will also await the results of the boundary noise meter following a 15 minute delay from their initial manual notification of an excessive noise level.

1. The car will be black flagged into the pit lane
2. The Car Club staff and the driver/owner will discuss the observed boundary noise limit and trackside noise limit breach
3. The driver will be requested to rectify the noise prior to further use of the circuit

4. An offer will be made to retest the vehicle following rectification
5. A Warning Notice (Appendix E) will be issued to the driver/owner to confirm the actions required
6. A copy of the Warning Notice will be filed with the daily boundary meter graph

#### **D. Process - Boundary Noise Meter retrospective discovery**

This process is aimed to enforce the District Plan noise limits as documented in Section 6. Identification will result from the daily printing and review by the Car Club staff of the previous day's boundary noise meter graph – identification method 1.

1. When possible, the car will be identified from the circuit hire log
2. The driver will be written to with a Warning Notice (Appendix E), advice of the breach and a request for rectification of the noise prior further use of the circuit
3. An offer will be made to retest the vehicle following rectification
4. A copy of the Warning Notice will be filed with the daily boundary meter graph

#### **E. Process – Race Meetings**

This process is aimed to enforce the trackside noise limit. Identification will result from an observation under identification method 2 as the boundary noise meter has a 15 minute delay before activity levels are visible to Car Club staff.

1. The car will be black flagged into the pit lane
2. The driver/owner will be summoned to discuss the breach with the official Clerk of the Course for the meeting
3. The driver must make every effort to ensure their vehicle operates under the 95 dB noise limit prior to next competing on the circuit
4. A Warning Notice (Appendix E) will be issued to the driver/owner by the Clerk of the Course
5. A copy of the Warning Notice will be filed with the daily boundary meter graph

## Appendix E - Warning notices

Processes B, C & D

| <b>MAXIMUM PERMITTED NOISE LEVEL WARNING NOTICE</b>  |               |
|--|---------------|
| <b>Vehicle No.</b>   | <b>Driver</b> |
| <p>You are advised that the noise level of your vehicle has been recorded at<br/>..... dB(A)</p> <p>This recorded reading is higher than the maximum of 95dB(A) as specified in Appendix Two Schedule A of the current Motorsport Manual.</p> <p>Prior to your next scheduled time on this circuit, you are required to ensure that the exhaust system is upgraded to the extent that the exhaust noise level will not exceed the maximum allowable.</p> <p>Should another reading in excess of the limit be recorded in the future you can expect to be asked to leave the circuit.</p> |               |
| This warning being issued by;  |               |
| Timed at   | Date          |
| Event  |               |

SIGNED IN RECEIPT OF NOTICE: \_\_\_\_\_

Process E

| <b>MAXIMUM PERMITTED NOISE LEVEL WARNING NOTICE</b>   |               |
|---|---------------|
| <b>Vehicle No.</b>  | <b>Driver</b> |
| <p>You are advised that the noise level of your vehicle has been recorded at<br/>..... dB(A)</p> <p>This recorded reading is higher than the maximum of 95dB(A) as specified in Appendix Two Schedule A of the current Motorsport Manual.</p> <p>Prior to your next scheduled time on this circuit, you are required to ensure that the exhaust system is upgraded to the extent that the exhaust noise level will not exceed the maximum allowable.</p> <p>Should another reading in excess of the limit be recorded at this meeting you can expect a penalty to be applied.</p> |               |
| This warning being issued by;   |               |
| Clerk of the Course/Assistant Clerk of the Course   |               |
| Timed at  | Date          |
| Meeting   |               |

SIGNED IN RECEIPT OF NOTICE: \_\_\_\_\_

## Appendix F – Noise monitoring issues

### Multiple vehicles

Two 95 dB noise sources occurring at exactly the same time at the same distance from a microphone would result in 98 dB. However, the  $L_{AFmax}$  is defined as the loudest 1/8th of a second. It is highly improbable that two cars would be at their noisiest precisely in the same 1/8th of a second. Also, one of the cars would be further from the monitoring point so would be quieter.

This is a benefit of using the  $L_{AFmax}$  that it tends to be easily attributed to a particular vehicle and is not corrupted by background noise. Nevertheless, when there is a big group of cars sometimes it will not be practical to attribute the measured  $L_{AFmax}$  to a single vehicle, in which case further laps will need to be monitored. Experience from measurements at the raceway is that when monitoring for a few laps it is straight-forward to identify any vehicles exceeding the trackside noise limit.

With manual monitoring it is not practical to accurately record the level of each car that is under the trackside noise limit (95 dB), but as discussed above the ones that are over the limit can be clearly identified. When the MyLaps system is operational it is expected that it will quantify the levels of more of the cars under 95 dB.

### Weather

Under general noise measurement standards (e.g. NZS 6801/NZS 6802) measurements are not made in the rain or when there is wind above 5m/s. However, those standards are mainly used for measuring levels of say 40 or 50 dB, and usually at a reasonable distance from a source. In those circumstances the weather can make a significant difference.

When measuring 95 dB at 30 metres from a source the effect of the weather is marginal. In a strong wind, the wind by itself will generate noise across a microphone. This wind noise will generally not approach the trackside noise limit and monitoring can continue. However, if the wind were to cause readings above 85 dB (this should be rare) then monitoring of vehicles on the track should be suspended.

Measurements should not be conducted in rain (other than very light drizzle) as it can damage microphones and affect recorded levels. Even if weather resistant equipment is used (such as the boundary logger), monitoring of vehicles should be suspended during rain as measurements can be significantly affected by the rain. Low cloud should not affect trackside noise monitoring and a wet track surface is not an issue as the dominant noise is engine/exhaust and not track/tyre.

## Appendix G – Noise management plan requirements

The following table sets out the requirements for the RNMP in the District Plan (Rule 21.10.2.2.4.c) and references where in the RNMP each requirement is addressed.

| Requirement  | Reference   |
|--|---|
| i. Objectives which are consistent with and which will contribute to achievement of Objective 21.10.1.1 and Policy 21.10.1.1.1 to maintain the operation of the facility whilst not increasing, and if possible reducing adverse noise effects on the environment.   | Section 1.2   |
| ii. A clear description of the physical resources and facilities located at the Raceway or Speedway.   | Section 2.1<br>Section 2.2                                      |
| iii. A comprehensive description of the range of activities conducted at the Raceway or Speedway, including a requirement that an annual calendar of Race Dates be prepared and made publicly available for both the Raceway and Speedway prior to the commencement of each raceway season. In addition a calendar of all the activities proposed for each calendar month showing the times and noise category of each activity shall be prepared, maintained, and made publicly available prior to the beginning of that calendar month. The calendars should:<br>A. specifically identify dates for those weekend days required by Rule 21.10.2.2.1;<br>B. where possible, the calendar should include provision of late starting times at the Raceway on days when the Speedway is also holding a race event and identify dates for Special Interest Vehicles; and<br>C. be updated as soon as possible following the cancellation of any activity. | Section 2.2<br>Section 5.2                                      |
| iv. Operating procedures for the Raceway or Speedway. These procedures are to ensure activities at the Raceway and Speedway comply with the rules in 21.10.2.2 and 21.10.2.3.  | Section 7<br>Section 8<br>Section 9<br>Section 10<br>Appendix D |
| v. Measures and initiatives for the management of vehicle noise and public address systems to achieve the Noise Management Plan objectives, including to ensure, where relevant, consistency with the requirements of the New Zealand Motorsport Manual.   | Section 8<br>Section 9  |
| vi. A description of the methods proposed to record the type, scale, frequency and duration of activities and events, including the monitoring of noise levels.  | Section 7.1   |
| vii. Protocols for the sharing of data from noise monitoring. This shall include a requirement to provide regular reporting of activities to the public, Council and Community Liaison Committee with regard to compliance with the rules in 21.10.2.2 and 21.10.2.3, including a running tally of each category of event held in each year.   | Section 5.2<br>Section 6.2<br>Section 7.1                       |
| viii. Protocols for responding to, addressing, and reporting on noise exceedances recorded by noise monitoring.  | Appendix D  |
| ix. Identification of management responsibilities and personnel, including contact details.  | Section 3   |
| x. The protocol for receiving, processing and responding to noise complaints. This shall include a requirement that the complainant be advised of the outcome of any complaint.  | Section 12  |
| xi. The process and timing for review of the respective Noise Management Plans.  | Section 13  |
| xii. As a schedule, a copy of the Council’s Monitoring Guidelines for Ruapuna Motorsport Park. The Guidelines shall record the methodology that the Council will utilise for:<br>A. how monitoring at the boundary is to occur for the activities undertaken in accordance with Rule 21.10.2.3 Tables 3 and 4; and<br>B. analysing noise data from the boundary noise logger for the purpose of assessing compliance with the rules in 21.10.2.2 and 21.10.2.3 (for example, to eliminate outliers in the data set, such as overflying aircraft); and<br>C. subsequently investigating any non-compliances identified in that analysis, including through discussion with the lessees of facilities within the Park; and<br>D. ensuring that the boundary noise logger is calibrated to accurately record noise at the Raceway and the Speedway.   | Appendix J  |
| xiii. The matters required by Rule 21.10.2.2.5 below.  | Section 5.1   |

## Appendix H – Certification comments and responses

The following table sets out comments on version 1.0 of the RNMP from the Council certifier, John Alps (email dated 08/09/16) together with recommended changes from Council planning staff Marie Pollisco and Ivan Thomson (email dated 13/09/16). All comments have been addressed in updated version 1.1 of the RNMP as described in the table below. All issues raised by the Council have been actioned.

| <b>Certification comment</b>  | <b>Response/changes made in RNMP v1.1</b>   |
|---|---|
| Throughout – Adjust minor wording and formatting as shown in tracked changes                                | Tracked changes from Council accepted. Reverse ordering of noise limit categories clarified.  |
| Section 1.2 - Rephrase Objectives A and B   | Tracked changes from Council accepted   |
| Section 1.3 – Add road names and north arrow to figure  | Road names and north arrow added  |
| Section 3.2 – Update contact details  | Changes requested by Council made   |
| Section 5.1 – Add subheadings, reword, and add membership roles   | Tracked changes from Council accepted. Subheadings added as recommended by Council, with additional subheading inserted to correctly reflect the content. |
| Section 6.2 – Add road names and north arrow to figure  | Road names and north arrow added  |
| Section 6.2 – Note that interpretation of speedway sound level measurements should be addressed in the SMNP | Note added  |
| Section 8.2 - Add road names and north arrow to figure  | Features named and north arrow added  |
|   |   |

## **Appendix I – Christchurch District Plan Chapter 21.10 Specific Purpose (Ruapuna Motorsport) Zone**

**Appendix J – Council’s Monitoring Guidelines for Ruapuna Motorsport Park**

|                   |                                      |                         |                          |
|-------------------|--------------------------------------|-------------------------|--------------------------|
| <b>Project:</b>   | Ruapuna Raceway                      | <b>Document No.:</b>    | Mm 014 R01               |
| <b>To:</b>        | Christchurch City Council            | <b>Date:</b>            | 20 December 2016         |
| <b>Attention:</b> | John Alps                            | <b>Cross Reference:</b> |                          |
| <b>Delivery:</b>  | by email                             | <b>Project No.:</b>     | 2011468c                 |
| <b>From:</b>      | Stuart Camp                          | <b>No. Pages:</b>       | 5 <b>Attachments:</b> No |
| <b>CC:</b>        |                                      |                         |                          |
| <b>SUBJECT</b>    | <b>Logger Data Analysis Protocol</b> |                         |                          |

This memo outlines protocols for Council staff to use when reviewing data from the permanent noise logger at Ruapuna. The protocols will assist in determining whether the results indicate compliance with District Plan noise limits.

### District Plan Noise Standards

The District Plan noise standards for Ruapuna are contained in rule 21.10.2.3, and are as follows.

**Table 1 Raceway Noise Standards**

| Permitted Activity  | Days of the Week       | Maximum Number of calendar days per year                                       | Boundary Noise Logger Noise Limits |                    | Hours of Operation  |
|---|------------------------|--|------------------------------------|--------------------|---|
|   |                        |  | L <sub>Aeq</sub> (15min)           | L <sub>AFmax</sub> |   |
| Motor vehicles using the Racetrack except motor racing vehicles, and not operating above 100 km/h | Mondays                | 50   | 65 dB                              | 85 dB              | 0900 - 1800 hours   |
| Motor racing vehicles using the Racetrack   | Any day except Mondays | 90   | 65 dB                              | 90 dB              | 0900 - 1800 hours<br>Except on 5 days<br>Friday to Sunday 0900 - 2000 hours |
|   |                        | 75   | 70 dB                              | 90 dB              |   |
|   |                        | 120 of which no more than 50 days shall occur from Tuesday to Friday inclusive | 80 dB                              | 95 dB              |   |
| Drag racing vehicles using the Racetrack  | Any day except Mondays | 5  | 80 dB                              | 105 dB             | 0900 - 1800 hours   |
| Special Interest Vehicles using the Racetrack   | Any day except Mondays | 6 as part of any permitted activity listed in this table                       | 90 dB                              | 105 dB             | Maximum of 90 minutes per day<br>1000 - 1700 hours                          |

**Table 2 Speedway Noise Standards**

| Permitted Activity    | Days of the week       | Maximum Number of calendar days per year | Boundary Noise Logger Noise Limits |                    | Hours of Operation |
|-----------------------|------------------------|--|------------------------------------|--------------------|--------------------|
|                       |                        |  | L <sub>Aeq</sub> (15min)           | L <sub>AFmax</sub> |                    |
| Speedway race meeting | Any day except Mondays | 15                                       | 80 dB                              | 95 dB              | 1800 - 2200 hours  |
| Speedway practices    | Any day except Monday  | 5  | 80 dB                              | 95 dB              | 1200 - 1800 hours  |

Table 4 All other activities Noise Standards

| Permitted Activity  | Days of the week | Maximum Number of calendar days per year | Boundary Noise Limits    |                    | Hours of Operation |
|---|------------------|--|--------------------------|--------------------|--------------------|
|   |                  |  | L <sub>Aeq</sub> (15min) | L <sub>AFmax</sub> |                    |
| All other activities associated with a motorised sports facility at Ruapuna including operation of any PA system, maintenance or management of the Motorsport Park, pilot vehicles used to manage or control activities, vehicles entering, parking within or leaving the Motorsport Park | Any day          | No limit                                 | 50 dB                    | 75 dB              | 0700 - 2200        |
|   | Any day          | No limit                                 | 40 dB                    | 65 dB              | 2200 - 0700        |

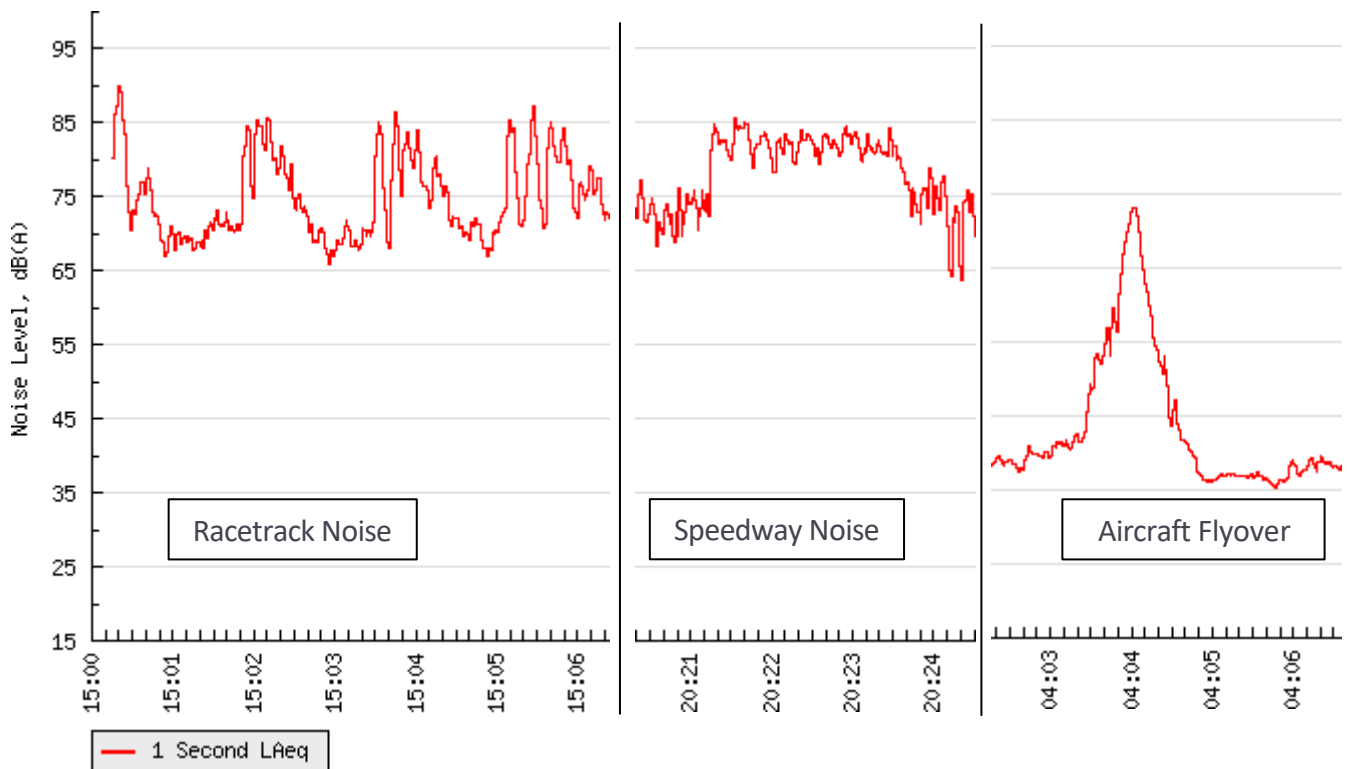
In addition, rule 21.10.2.2.1 requires that:

*There shall be a minimum of 10 weekend calendar days scheduled between 31 October and 31 March per annum, of which at least 4 shall be scheduled between 2 January and 31 March, where there shall only be activities permitted in Rule 21.10.2.3 Table 4.*

### Protocols

Detailed analysis of data from the noise logger has determined that ambient (non-Ruapuna) noise sources may affect measured noise levels at times. In addition, wind at the logger can generate noise on the microphone and therefore contaminate results. These two factors need to be carefully considered when analysing logger data.

Ensure that anybody who undertakes a review of logger data firstly familiarises themselves with the “shape” of noise events at Ruapuna. As an example, common events will typically look like the following when viewed as 1-second data.



## RACEWAY NOISE — ANNUAL REVIEW

The following methodology will assist in analysing data from the permanent noise logger over a complete 12 month period of **Raceway** use. See separate instructions for addressing specific noise complaints and/or speedway noise.

1. Prepare a spreadsheet with at least the following columns:

| Date | $L_{Aeq}$ | $L_{Amax}$ | Wind effect (Y/N) |
|------|-----------|------------|-------------------|
|------|-----------|------------|-------------------|

2. Ensure that the date range runs from 1 July to 30 June inclusive, and that the day of the week is shown against each date.
3. Open the web page showing the noise logger data ([www.noiseandweather.co.nz](http://www.noiseandweather.co.nz) and login to the Ruapuna site). Check the relevant boxes to only display  $L_{Aeq}$ ,  $L_{Amax}$ , and wind speed. Ensure the display is set to “global” such that an entire 24 hour period is displayed at once.
4. Visually review the daytime period (approximately 0900—1800) for each day, and record in the spreadsheet the uppermost  $L_{Aeq}$  and  $L_{Amax}$ .
5. In the “wind effect” column, enter Y for yes if the wind speed was greater than 5 m/s during the time when noise levels were highest, or N for no otherwise. Wind data can be considered in more detail once the spreadsheet is complete, and at this stage the wind entry is simply to save time later.
6. Once the spreadsheet is completed, analyse the number of days which fall into each band of noise as follows:
  - a. For the scheduled 10 quiet weekend days (rule 2 under Table 4 above), a possible non-compliance occurs if the  $L_{Aeq}$  exceeds 62 dB (this is generally the upper limit of ambient noise levels).
  - b. For all other days, compliance with the 65 dB  $L_{Aeq}$  / 85 dB  $L_{Amax}$  limit is deemed to occur if the uppermost  $L_{Aeq}$  is strictly less than 67 dB, and the  $L_{Amax}$  is less than or equal to 85 dB.
  - c. For all other noise limits, count the number of days where noise levels are less than or equal to the relevant  $L_{Aeq}$  and  $L_{Amax}$  limits.
  - d. Ensure that the number of days of activity within each band of noise does not exceed the permitted number of days, and check that Mondays do not exceed the 65 dB  $L_{Aeq}$  / 85 dB  $L_{Amax}$  limit.
  - e. For any days where noise levels appear to reflect either the Drag Racing noise limit or the Special Interest Vehicle noise limit, check the Car Club calendar to determine whether or not such events were scheduled. <http://www.canterburycarclub.co.nz/track/raceway-noise-management/>
  - f. If the number of days in any noise band exceeds the number permitted in the District Plan, review any days which may be affected by wind, based on the Y/N entries in the wind speed column. To do this, review the daytime hours of the days in question, and re-determine the uppermost noise levels when windy periods (>5 m/s) are excluded. Recalculate the number of days in each band following this analysis.

7. Following this analysis, notify the Car Club of any apparent non-compliances, and request clarification from them as to why the exceedance may have occurred and what action they have taken to avoid a repeat of the incident.

### RACEWAY NOISE — SPECIFIC NOISE COMPLAINTS

If a specific noise complaint is received regarding noise from the Raceway, the following process should be used.

1. As soon as practicable following receipt of a noise complaint, notify the Car Club of the date and time which the complaint relates to, and ask for their comments.
2. Visually review the daytime period for the day (and time) in question, and determine the uppermost  $L_{Aeq}$  and  $L_{Amax}$ .
3. Check the wind speed during the day, and discard any data during periods when the wind speed exceeds 5 m/s.
4. If the day in question was scheduled as a quiet day (rule 21.10.2.2.1), or is a Monday, check whether the uppermost noise levels comply with the respective noise limits, bearing in mind the limitations in 6.a and 6.b above.
5. Following this analysis, provide feedback to both the Car Club and the complainant confirming Council findings.

### SPEEDWAY NOISE — ANNUAL REVIEW

The following methodology will assist in analysing data from the permanent noise logger over a complete 12 month period of **Speedway** use.

1. Obtain a copy of the calendar of events for the entire 12 month period (1 July to 30 June inclusive) by emailing [president@ruapunaspeedway.co.nz](mailto:president@ruapunaspeedway.co.nz)
2. Count the number of practice days, and the number of event days, and check that these comply with the permitted number of events given in Table 2.
3. Review the logger data for each of the identified days, and:
  - a. Check that the duration of the events does not exceed the hours permitted in Table 2,
  - b. Determine the highest  $L_{Aeq}$  and  $L_{AFmax}$  noise level for each event. The logger over-estimates noise from Speedway events, and a correction of 10 dB must be subtracted off the highest noise levels before comparing with the noise limits given in Table 2.
4. Following this analysis, advise the Speedway of any apparent non-compliance, and request clarification as to the reasons for this happening and action to be taken to avoid a repeat.

### SPEEDWAY NOISE — SPECIFIC NOISE COMPLAINTS

If a specific noise complaint is received regarding noise after 6 pm, this is most likely from activity at the Speedway, and the following process should be used.

1. As soon as practicable following receipt of a noise complaint, notify the Speedway of the date and time which the complaint relates to, and ask for their comments.
2. Review the logger data for each the day and time in question, and:
  - a. Check that the duration of the event does not exceed the hours permitted in Table 2,

- b. Determine the highest  $L_{Aeq}$  and  $L_{AFmax}$  noise level for the event. The logger over-estimates noise from Speedway events, and a correction of 10 dB must be subtracted off the highest noise levels before comparing with the noise limits given in Table 2.
3. Following this analysis, provide feedback to both the Speedway and the complainant confirming Council findings.