

BLACKROCK MOTOR PARK

NOISE MANAGEMENT PLAN

**For a Recreation Facility (Outdoor)
282-288 Rhondda Road & 102 Miller Road, Wakefield**

Version

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Prepared by: Barr Property & Planning

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1. PURPOSE

The purpose of this Noise Management Plan (NMP) is to set out procedures and strategies for managing, mitigating and minimising potential noise impacts, arising from the operation of activities at BlackRock Motor Park (BlackRock), to the surrounding area.

2. SUMMARY

This Noise Management Plan has been produced by BlackRock Motor Park in conjunction with RAPT Acoustic Consultants and provides the framework and mechanisms for the management of noise relating to the operation of BlackRock facilities.

The primary aim in implementing this NMP is to proactively manage noise and minimise the potential impact of noise within the local community and to maintain compliance with operational noise goals and conditions of development consent, contained in the Notice of Determination for the development.

This NMP is intended to establish a baseline for noise management procedures, however should be considered a dynamic management document to ensure scope for continual improvement in strategies and procedures in consultation with stakeholders and the local community. It sets out the management procedures, processes and controls which cover all aspects of mitigating noise impacts and outlines the formal procedures for compliance management and complaint handling.

The NMP will be regularly reviewed in line with good operational practice and advancements/improvements in noise measurement techniques and noise mitigation measures. It is therefore subject to revised versions being published at the discretion of BlackRock Motorsport Park and in consultation with Lake Macquarie Council and the local community and/or in accordance with the annual review process set out in the BlackRock Motor Park Operational Management Plan.



3. TRACK USAGE

The track at BlackRock will be utilised for various noise generating activities that will include the use of various vehicle types including road registered cars and motorbikes, as well as non-road registered and race specific vehicles.

The noise generated by the different vehicle types will vary by individual vehicle. This will in turn effect the number of vehicles which can operate on the track in order to maintain compliance with operational noise goals across the various activities.

Table 1 below provides an example of how the composition of vehicle type and noise levels will vary at BlackRock.

Table 1 Vehicle Compositions and Associated Varying Noise Levels

Activity Type	Vehicle Composition	Noise Level
Public Track Day	Road Registered Vehicles Unregistered Vehicles	Low Moderate to High
Members Track Day	Road Registered Vehicles Unregistered Vehicles	Low Moderate to High
BlackRock Drive Experiences	Road Registered Cars Race Cars – Muffled	Low Low to Moderate
Car Brand Experiences	Road Registered Cars	Low
Car Brand Launches	Road Registered Cars	Low
Car Brand Testing	Road Registered Cars	Low

All activities will operate within the operational noise goals, however as illustrated above, not all activities will operate at the facility's maximum sound power level.

The activities which will generate the highest levels of noise will be the unregistered vehicle sessions at the public and member track days. These days will comprise of multiple sessions where race vehicles and road registered vehicles will alternate their sessions on track. So, in any one of these days, some sessions will be louder than others based on the type of vehicles on track, however all activities will be strictly controlled to achieve operational noise goals



4. OPERATIONAL NOISE CRITERIA FOR BLACKROCK

Below is a summary of the RAPT Consulting 181018 Noise Impact Assessment Report. These key metrics are summarised to provide context to the adopted operational noise criteria for BlackRock.

- BlackRock Project Specific Noise Goal based on the NSW EPA Publication Noise Policy for Industry **is to be 43 $L_{Aeq(15min)}$ during daytime hours of 7:00am to 6:00pm for residential neighbours to minimise potential for their amenity to be affected.**
- BlackRock modelling shows that activities on site outside of track-based operations such as go-karts, 4WD, and function centre add no additional cumulative sound power levels.
- BlackRock modelling shows the Project Specific Noise Goal of 43 $L_{Aeq(15min)}$ across all current sensitive receiver locations in Wakefield **can be achieved provided the cumulative track sound power levels are 141 SWL dB(A) or below.**

In addition to the summary details above, BlackRock must also give consideration to the site-specific conditions which may have an effect on the ability to maintain the project specific noise goal such as weather conditions and adjust the maximum sound power level accordingly.

The operating hours of the BlackRock track, skid pan and other activities on site are set out in the BlackRock Operational Management Plan and the conditions of the development consent.



5. MANAGING NOISE AT BLACKROCK

The operational noise criteria for BlackRock means the level of 43 $L_{Aeq}(15min)$ is the project noise trigger and BlackRock will strive to maintain operations within this level across all current sensitive receivers during the track operating hours and if exceeded, will trigger a management response enacting mitigation measures outlined below.

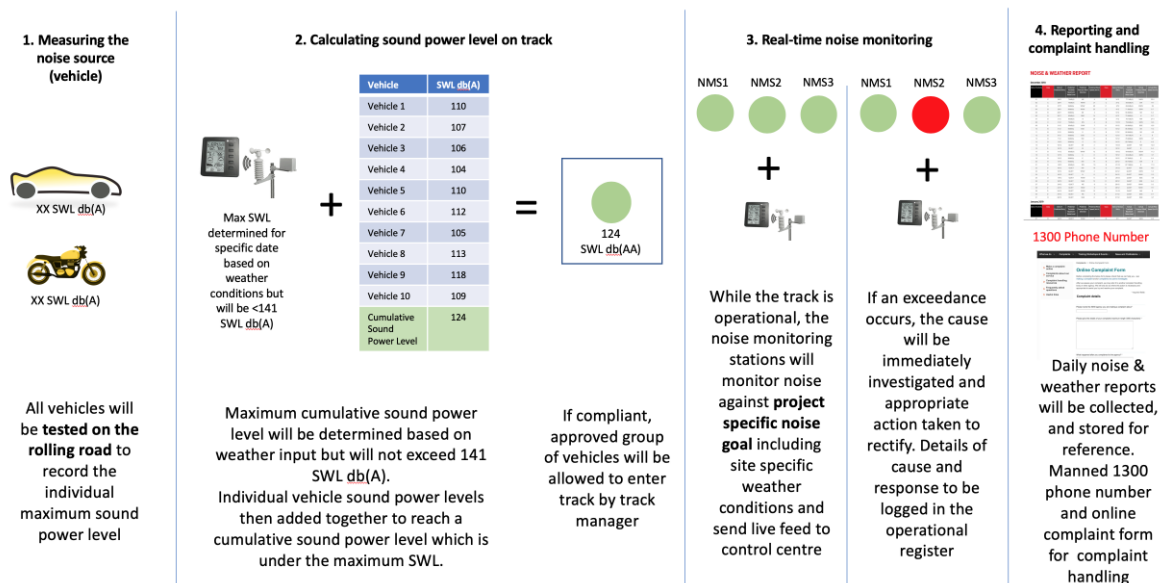
As part of the operational procedures of the track, the management plan will take into account the different types of vehicles, the number of vehicles on track at any one time and the site-specific conditions at the time of the activity.

The operational procedures to manage noise at BlackRock therefore consists of four elements:

1. Measuring the noise source (vehicles)
2. Calculation of cumulative sound power level including site specific conditions
3. Real-time noise monitoring & attended noise monitoring
4. Reporting and complaint handling

Diagram 1 - Noise Management Flow Chart

Below is a diagram illustrating the operational flow of noise management and mitigation at BlackRock.



5.2 Measuring the noise source

- a. Prior to on track activity every vehicle is marshalled to a rolling road. The rolling road test will be conducted on a static

dynamometer system where the vehicle will be driven onto the machine and accelerated through to a redline (maximum engine revolutions).

- b. A measurement will be taken in a specially designed open-ended facility located in pit lane where a calibrated sound level meter will measure the maximum sound power level of the individual vehicle at a distance of 5m from the source and 1.5m from ground level. This sound reading will constitute the maximum sound power level of the individual vehicle.
- c. The recorded sound power level will be logged in the central database and an individual BlackRock profile will be created for that specific vehicle.
- d. An individual electronic transponder will be affixed to the vehicle and used to calculate the potential cumulative sound power level of a group of vehicles utilising the track for a specific activity.

5.3 Calculation of cumulative sound power level on track

- a. Prior to any noise generating activity starting on track, a cumulative sound power level model for the proposed group of vehicles will be generated by the track manager.
- b. The predictive model will account for the site-specific weather conditions and set a maximum sound power level for compliance with the project noise trigger level at the sensitive receivers.
- c. The individual sound power levels of vehicles taking part in the activity will then be added together to reach a cumulative sound power level for the group.
- d. Once the track manager is satisfied the sound power level for the group of vehicles is compliant, only then will they be allowed to enter the track as a group for their designated session.
- e. Once the session is operational, the unattended noise monitoring stations will give real-time feedback regarding compliance with project noise trigger levels.

5.3.1 Real-time noise monitoring

- a. BlackRock will install and operate two permanent noise monitoring stations for the purpose of ongoing unattended real-time monitoring of noise from track-based activities.
- b. The noise monitoring stations consists of a sound level meter, fitted with an outdoor omni-directional microphone kit and



powered by solar panels and battery. A separate weather monitoring station will also be utilised to give wind speed and direction, temperature and rainfall data.

- c. The noise monitoring stations will be located within the site on the boundary adjacent to the nearest neighbouring properties. Locations can be seen in Diagram 2 – Noise Monitoring Station Locations
- d. The noise monitoring station's data is transferred in real-time to BlackRock operations where the track manager will have a live screen to monitor activity of the stations during a track session.
- e. If for any reason there is an exceedance in the maximum sound power level at one or more of monitoring stations, the noise monitoring system will notify the track manager and the cause will immediately be investigated. Once the cause of the exceedance has been established, appropriate action will be taken rectify the issue.
- f. Action to rectify any exceedance, in particular in the event of any adverse or shifting weather conditions, may include the reduction in the number of cars operating concurrently on track, a restriction on the sound power level of cars allowed on track limit or the stoppage or cancellation of a scheduled session.
- g. A note of any exceedance will be taken and added to the operational log. Notes will be made on the level of exceedance, when it occurred, and what steps were taken to rectify the situation.

5.3.2 Attended noise monitoring

- a. In addition to the permanent unattended noise monitoring stations, BlackRock will also conduct a quarterly attended noise monitoring report by an external noise consultant which will include assessment of the real-time noise monitoring stations.
- b. The results of this report will be made available upon request and will also be tabled at the regular reporting to council as set out in the Operational Management Plan.

5.4 Reporting and Complaint handling

- a. Daily reporting of noise and weather conditions will be generated using data from the noise monitoring stations and weather station.



The data will show actual cumulative sound power levels of vehicles on track and sound power levels from the noise monitoring station as well as actual weather conditions such as wind speed, direction and rainfall.

- b. A 1300 number will be established and will be attended during the hours of operation of the track as a direct line of contact with BlackRock management to report any complaint.
- c. In addition, an online feedback form on the BlackRock website to provide a platform to record the date, time and location from which a complaint is arising.
- d. All complaints will be actioned in a timely manner (on the day they are recorded where possible) by BlackRock management and handled in accordance with the Complaint Handling Procedure outlined in the BlackRock Operational Management Plan.
- e. The complaint will be logged in a central complaint register along with details on the nature of the complaint and the BlackRock response.
- f. In order to provide resolution in the event of ongoing acoustic impacts reported by residents, part of the investigation process may include noise monitoring at individual private residences on an as needs basis.
- g. All complaints will be made available to council during the regular review as set out in the BlackRock Operational Management Plan or at any time upon request.



6. Permanent Noise Monitoring Location

BlackRock will install the permanent noise monitoring equipment and a weather station at the locations shown in Diagram 2 below.

The locations of the permanent unattended noise monitoring stations were selected as they are:

- located within the development site to allow for easy accessibility
- NMS1 & NMS2 are located close to the boundary of the nearest properties by distance to the track
- NMS3 is located close to the track so the sound power level close to source can be correlated with the other two stations closer to the boundary



Diagram 2 – Permanent Unattended Noise Monitoring Stations (NMS) & Weather Station(WS) Location

