1. DEVELOPMENT APPROVALS

Author	Director Community and Economic Development
Responsible Officer	Director Community and Economic Development
Link to Strategic Plans	Narromine Local Environmental Plan 2011 Narromine Development Control Plan 2011

Executive Summary

This report provides information to Council on the approved Development Applications for July 2023.

Report

The approvals for the month of July 2023 brings the total approved Development Applications for the financial year to 1, with a total value of $41,000. At this time last year there were 6 applications approved with a value of $1,428,215.

DA No.	Location	LOT/DP	Description	Value	Assessment Time/Days
2022.31	Tantitha Rd, Narromine	142//1083899	Extractive Industry	$41,000	29

MODIFICATIONS

The modification approvals for the month of July 2023.

DA No.	Location	LOT/DP	Description	Value	Assessment Time/Days
2023/21.2	Newhaven Rd, Narromine	8//755099	Telecommunications Tower & facility	$243,000	1
2023/22.2	Narwonah Rd, Narromine	32//883546	Telecommunications Tower & facility	$243,000	1

There are currently 10 applications under assessment.

1. DEVELOPMENT APPROVALS (Cont'd)

Legal and Regulatory Compliance

Environmental Planning and Assessment Act 1979
Environmental Planning and Assessment Regulation 2021

Risk Management Issues

Nil

Internal/ external Consultation

Nil

Attachments

Nil

RECOMMENDATION

That the information be noted.

2. LEASE OF PART LOT 1 DP 109556 FOR NBN FIXED WIRELESS TOWER

Author	Director Community and Economic Development
Responsible Officer	Director Community and Economic Development
Link to Strategic Plans	CSP – 3.3.3 – Advocate for reliable and affordable internet and communications technology. CSP – 2.3.1 – Support the growth and development of new and existing businesses and industry.

Executive Summary

NBN Co are seeking to build a new communications tower in Narromine to develop a new fixed wireless facility, enabling high speed fixed wireless. NBN Co seek to lease a site at 132 Dandaloo Street (near existing animal shelter) to enable the development of the site.

Report

Over the past six months Council staff have been liaising with consultants to NBN Co to seek out a site for a new fixed wireless facility. NBN Co are aiming to bring a new high speed fixed wireless broadband capability to Narromine and the immediate surrounds to again enhance local connectivity.

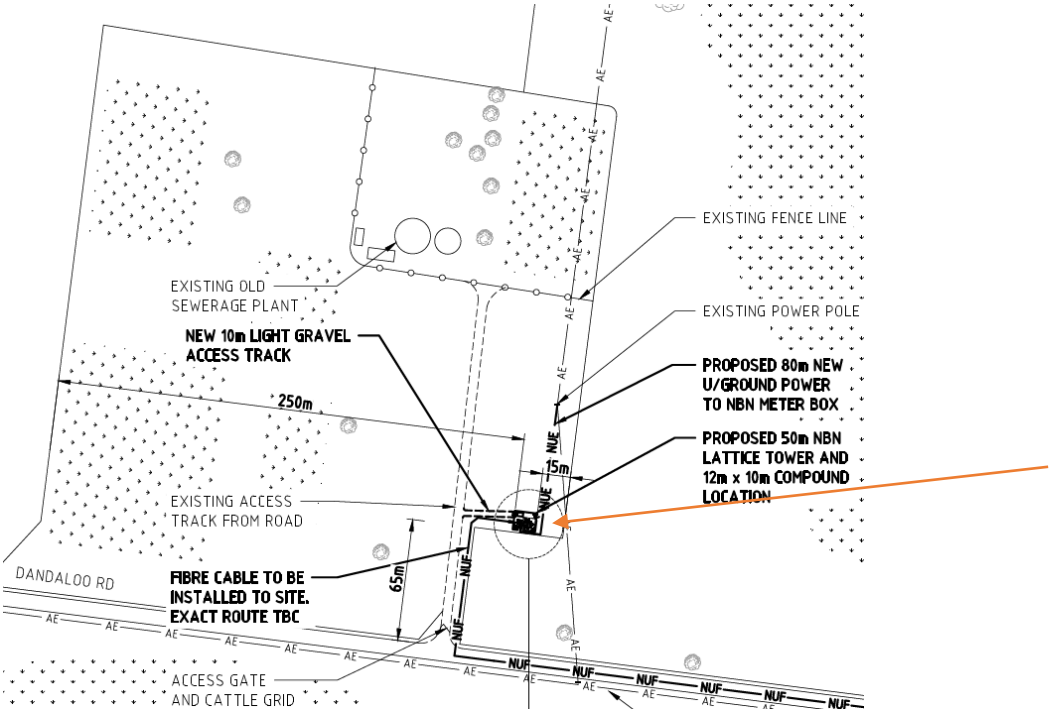
The Council owned lot which houses the animal shelter at 132 Dandaloo Street is seen as an ideal site for what will be a 50m high communications tower. For context this is the same height as the existing tower 500m to the east of this site which has limited capacity for additional services towards the top of the tower.

2. LEASE OF PART LOT 1 DP 109556 FOR NBN FIXED WIRELESS TOWER (Cont'd)

NBN Co seek to lease an area of approximately 10m by 12m (120m2) from Council to enable the construction of the tower. The total property size is 9.2HA approx.

NBN C or their representatives will be responsible for all necessary approvals, construction costs and ongoing outgoings regarding rates, repairs and any other fees.

The area under consideration for lease is seen below.



2. LEASE OF PART LOT 1 DP 109556 FOR NBN FIXED WIRELESS TOWER (Cont'd)

An initial lease fee of $10,000 (GST EX) is recommended if Council agrees to the leasing of the site. NBN Co seek a lease term of 20 years (which may require additional approvals). A rental increase of CPI per annum is recommended.

Alternative use of the site

At present the site makes up part of the lot that at one time housed the sewerage treatment plant and now houses the animal shelter. There is some remediation to occur on the western side of the allotment which is ongoing which does not appear to affect the area under consideration for the tower.

No greater use of the allotment has been considered by Council staff other than continuing to be the site of the animal shelter.

Legal and Regulatory Compliance

Environmental Planning and Assessment Act 1979
Environmental Planning and Assessment Regulation 2021

Risk Management Issues

NBN Co will be responsible for all approvals and costs associated with the development.

The development is considered to enable improved communication which is a long held strategic goal of Narromine Shire.

Internal/ external Consultation

Executive Leadership team
NBN Co representatives

Attachments

Nil

RECOMMENDATION

1. That Council lease approximately 120m2 of part lot 1 DP 109556 to NBN Co or its representative for the purposes of a communication tower for a 20 year period.
2. That NBN Co or its representative pay all development costs and outgoings.
3. That the commencement lease fee be $10,000 (ex GST) per annum.
4. That the lease fee be increased by CPI annually.
5. That the General Manager be delegated to complete all lease documents associated with the leasing of part Lot 1 DP 109556.

3. DEVELOPMENT OF AERODROME AVIATION BUSINESS PARK

Author	Director Community and Economic Development
Responsible Officer	Director Community and Economic Development
Link to Strategic Plans	CSP – 2.3.1 – Support the growth and development of new and existing businesses and industry.

Executive Summary

A local business is seeking to develop a new pilot training school at the Narromine Aerodrome. To enable this development the owner of the business is seeking to fix a lease and purchase price for 20 Powell Place (Lot 19 DP 1278134).

Report

The development of the Narromine Aviation Business Park has been ongoing since 2019 while planning and construction were underway. The Business Park consists of 22 lots that range in size from 2250m2 to 5040m2.

The price for each allotment was considered by Council in March 2020 and in December 2022 the following resolution confirmed the pricing for the improved lots which have now had hangars developed by Council on them.

1. That Lot 3 DP 1278134, Hayden Court be offered for sale at $530,000 (GST INCL).
2. That Lot 19 DP 1278134, Powell Place be offered for sale at $530,000 (GST INCL).
3. That Lot 3 DP 1278134, Hayden Court be offered for lease at $20,500 (GST INCL). per year, with annual CPI increments to be applied thereafter.
4. That Lot 19 DP 1278134, Powell Place be offered for lease at $20,500 (GST INCL) per year, with annual CPI increments to be applied thereafter.
5. That the General Manager be delegated to negotiate the terms of each lease and sale.
6. That the Common Seal be affixed to any sale documentation as required.

Council is soon to sign a lease with the owner of a Pilot Training School for Lot 19 Powell Place who is seeking to develop an option for a two year lease with a view to purchase the property if the development of the training school is successful.

Pilot training is one of the target uses for the Aviation Business Park and would be a very positive development for the aerodrome and Narromine generally.

3. DEVELOPMENT OF AERODROME AVIATION PARK (Cont'd)

The owner has also confirmed their wish to proceed to contract for the purchase of the vacant land at Lot 20 (price previously confirmed by resolution). In order to facilitate the development, the developer would like Council to be able to confirm the second year lease price of Lot 19 and also confirm the sale price if a purchase was made in the second year of the lease. Recommended price increases are outlined below. The lease is expected to be signed in August 2023. The General Manager has previously been delegated authority to negotiate the terms of each lease and sale (other than price).

Use	12 month period. Year 1	12 month period. Year 2
Lease of Hangar at Lot 19 DP 1278134 Powell Place	$20,500 (INCL GST) Previously resolved	$21,115 (INCL GST) 3% increase
Purchase of Hangar at Lot 19 DP 1278134 Powell Place	$530,000 (INCL GST)	$530,000 (INCL GST)

Alternative use of the site

The use of Lots 19 and 20 as the location of a pilot training facility is consistent with zoning of the precinct and is also one of the target businesses for the area. There are a range of other blocks adjacent for further development.

Legal and Regulatory Compliance

Environmental Planning and Assessment Act 1979
Environmental Planning and Assessment Regulation 2021

Risk Management Issues

Any risk that the business does not proceed beyond the initial lease period is mitigated by Council's continued ownership of the property.

The lease and sale fees are consistent with Council's previous resolution which was considered once costs and grant income were known.

The usage as a Pilot Training School is consistent with zone permissibility.

Internal/ external Consultation

Executive Leadership Team
Potential developer
Real Estate Agent

Attachments

Nil

3. DEVELOPMENT OF AERODROME AVIATION PARK (Cont'd)

RECOMMENDATION

That Council confirm the following pricing for the lease and/or sale of Lot 19 DP 1278134, Powell Place:

- Year 1 of lease, Lot 19 DP 1278134 $20,500 (Incl GST)
- Year 2 of lease, Lot 19 DP 1278134 $21,115 (Incl GST)
- Purchase price of Lot 19 DP 1278134 if purchase contracted during year 1 or 2 of lease period $530,000 (Incl GST).

4. DEVELOPMENT APPLICATION 2022/58 PROPOSED RECREATION FACILITY (OUTDOOR) – MOTORBIKE TRACK AT 151 OLD BACKWATER ROAD, NARROMINE

Author	David Crofts, Strategy Hunter Consultants
Responsible Officer	Director Community and Economic Development
Link to Strategic Plans	Narromine Local Environmental Plan 2011; Narromine Development Control Plan 2011; Narromine Shire Residential and Large Lot Residential (Land Use) Strategy (Reviewed 2021).

Executive Summary

The development is for a proposed motorbike track for private use only. It is located adjacent to Old Backwater Road. A previous development application for a similar development was refused by Council on 14 July 2021.

This development assessment has been undertaken for Council by an independent planner.

The applicant engaged a specialist acoustic consultant to undertake an acoustic assessment. In response a peer review was undertaken of this assessment by a Council engaged acoustic consultant.

The application and acoustic assessment were placed on public exhibition, and nearby properties notified, consistent with Council Policy and statutory requirements.

18 submissions were received.

Following a detailed assessment, it is considered that the application should be refused.

The main reasons for refusal relate to inconsistency with Council land use policy, inconsistency with the land use zone objectives, acoustic impact, inconsistency with DCP provisions, and erosion and sediment control. The acoustic impact of the proposal has been evaluated in the assessment in terms of not only the existing nearby development, but also Council's policy decision to intensify residential development in the area by rezoning adjacent and nearby land to R5 for large lot residential development. A positive Gateway determination was issued in July 2022, before the subject development application was received, and the rezoning occurred in June 2023.

4. DEVELOPMENT APPLICATION 2022/58 PROPOSED RECREATION FACILITY (OUTDOOR) – MOTORBIKE TRACK AT 151 OLD BACKWATER ROAD, NARROMINE (Cont'd)

Report

1. INTRODUCTION

1.1 Background

A chronology of the development application is outlined below including the key stages of correspondence between the applicant and Council with regard to the application:

Table 1: Chronology of the DA

Date	Event
10 November 2023	Prelodgement meeting with the applicant
23 December 2022	Application lodged with supporting plans, acoustic report, civil engineering plan, Statement of environmental effects, stormwater drainage plan.
25 January 2023	Amended applicant's acoustic assessment
7 February 2023	Further information sought from applicant
13 February 2023	Site inspection with the applicant, applicant's consultant planner, Council officer and the Council's independent planner
10 March 2023	Further information sought from applicant regarding issues raised by Council's independent planner regarding matters associated with the applicant's acoustic assessment
March 2023	Council's Peer Review of the Applicant's Noise Assessment
13 April 2023	Further information sought from applicant in response to Council's peer review of the applicant's acoustic assessment
28 April 2023	Response letter from applicant regarding land use, site analysis, acoustic impact, dust, contamination, water quality, stormwater, landscape, and strategic context/ zone objectives
10 May 2023	Commencement of public exhibition
9 June 2023	Completion of public exhibition

4. DEVELOPMENT APPLICATION 2022/58 PROPOSED RECREATION FACILITY (OUTDOOR) – MOTORBIKE TRACK AT 151 OLD BACKWATER ROAD, NARROMINE (Cont'd)

2. THE SITE AND LOCALITY

2.1 The Site

The motorcycle track proposal is located at Lot 6 DP251750, otherwise known as 151 Old Backwater Road Narromine. It is located approximately 1.8 km direct distance from Narromine town centre.

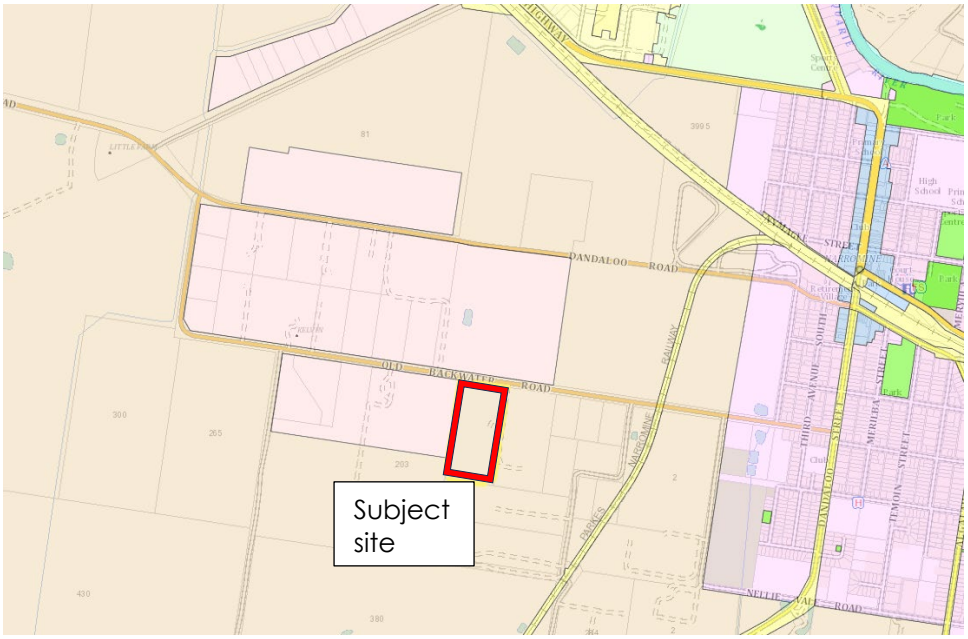
The land is zoned RU1 Primary Production with active farming occurring on several nearby properties, although this does not appear to be the predominant current or future land use. This is because an area of R5 Large Lot zoned land is located adjacent to the west, and to the north across Old Backwater Road.

The Site is relatively flat and has been shaped to form a motorcycle "circuit" with falls and rises, and a lower area within the track to catch any rainwater.

The development site is largely devoid of vegetation. On inspection, much of the site was bare soil with limited grass coverage. The road reserve of Old Backwater Road contains a mature stand of large native trees, typical of the area, however the tree cover does not extend beyond the property boundary.

Lot 6 contains a dwelling and associated outbuildings, located to the southeast of the proposed motorcycle track. The dwelling at Lot 7 is located approximately 340m from the centre of the proposal; other dwellings are located 400m from the proposal, and beyond. The houses 400m and more to the west/northwest are typical large lot residential dwellings on lots of 2-4 ha.

Figure 1: Site Location



4. DEVELOPMENT APPLICATION 2022/58 PROPOSED RECREATION FACILITY (OUTDOOR) – MOTORBIKE TRACK AT 151 OLD BACKWATER ROAD, NARROMINE (Cont'd)

Figure 2: Aerial view of site context

4. DEVELOPMENT APPLICATION 2022/58 PROPOSED RECREATION FACILITY (OUTDOOR) – MOTORBIKE TRACK AT 151 OLD BACKWATER ROAD, NARROMINE (Cont'd)

Figure 3: Aerial close view of site showing earthworks

3. THE PROPOSAL

The proposal is for the use of an already constructed (but unapproved) dirt surface motorcycle track to be ridden for recreation and training purposes only, by the residents of Lot 6, their family and friends. It is not proposed to be open to the general public (no spectators), for commercial use or financial gain. It will not be used for organised events (including non profit).

The track was constructed by a professional track builder, and any earthworks used reshaped soil from the site. Unfortunately, development consent was not sought for the track prior to its construction. This application seeks to obtain consent for the use of the earthworks as a motorcycle track.

4. DEVELOPMENT APPLICATION 2022/58 PROPOSED RECREATION FACILITY (OUTDOOR) – MOTORBIKE TRACK AT 151 OLD BACKWATER ROAD, NARROMINE (Cont'd)

The previous proposal was considered by Council on 14 July 2021. Council refused the application. In response, the applicant has lodged a new application with a new statement of environmental effects, acoustic study and other supporting information.

The track is proposed to be used as follows:

During the during the daytime period (7am – 6pm), generally between:

- 3pm to 6pm Monday to Friday; and
- 10am to 5pm Saturday and Sunday.
- Three (3) to four (4) sessions per week up to a maximum of approximately two (2) hours per session.
- For up to a maximum cumulative total of approximately six (6) hours per week.

The SEE refers to the track being "typically only be ridden by up to four children and two adults."

However, the maximum number of motorcycles on the track at any one time is not specified.

The track is constructed as a contiguous circuit with a variety of rises, falls and turns to provide a training and practice environment for the riders.

It is visible from Old Backwater Road, with a small setback. It occupies almost the full width of the lot. The trees within the road reserve provide minimal screening because of clear trunks with a high crown.

It is proposed to encourage the growth of grass on the nontrack surfaces, and to plant trees along the northern (road) and western sides (adjacent property) of the track. There is little revegetation to date.

4. DEVELOPMENT APPLICATION 2022/58 PROPOSED RECREATION FACILITY (OUTDOOR) – MOTORBIKE TRACK AT 151 OLD BACKWATER ROAD, NARROMINE (Cont'd)

Table 2: Development Data

Control	Proposal
Site area	The unsealed track is approx. 144m x 100m (14,400m^2) (outside edge).
Landscaped area	Undefined – trees proposed to northern and western property boundaries.
Car Parking spaces	Nil.
Setbacks	Northern boundary – Old Backwater Road – approx. 5m. Western Boundary – approx. 1m Eastern boundary – approx. 15m Southern boundary – 294m.
Hours of operation proposed	7am to 6pm Monday to Saturday. 8am to 6pm Sundays and public holidays. Up to a maximum cumulative total of 6 hours per week.

4. STATUTORY CONSIDERATIONS

Section 4.15(1) of the *Environmental Planning and Assessment Act 1979* ('EP&A Act') outlines the matters which the consent authority must take into consideration in determining a development application. These matters are of relevance to the development application and include the following:

(a) the provisions of any environmental planning instrument, proposed instrument, development control plan, planning agreement and the regulations
(b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality,
(c) the suitability of the site for the development,
(d) any submissions made in accordance with this Act or the regulations,
(e) the public interest.

These matters are further considered below. It is noted that the proposal is **not** considered to be:

- Integrated Development (s4.46)
- Designated Development (s4.10)
- Requiring concurrence/referral (s4.13) or
- Crown DA (s4.32).

4. DEVELOPMENT APPLICATION 2022/58 PROPOSED RECREATION FACILITY (OUTDOOR) – MOTORBIKE TRACK AT 151 OLD BACKWATER ROAD, NARROMINE (Cont'd)

4.1 Section 4.15(1)(a)(i) - Provisions of Environmental Planning Instruments

State Environmental Planning Policies (SEPP)

The following SEPPs potentially apply to the land:

State Environmental Planning Policy (Biodiversity and Conservation) 2021: Not relevant. No vegetation is proposed for removal.

State Environmental Planning Policy (Building Sustainability Index: BASIX): Not relevant. - no buildings are proposed

State Environmental Planning Policy (Exempt and Complying Development Codes) 2008: Not relevant. The proposal is not exempt or complying development.

State Environmental Planning Policy (Housing) 2021: Not relevant. The proposal does not involve or affect the housing matters in the SEPP.

State Environmental Planning Policy (Industry and Employment) 2021: Not relevant. The proposal does not impact on matters relevant to the SEPP.

State Environmental Planning Policy (Planning Systems) 2021: Not relevant. The proposal does not involve matters relevant to the SEPP.

State Environmental Planning Policy (Primary Production) 2021: Not relevant. The proposal does not impact on matters relevant to the SEPP.

State Environmental Planning Policy (Resilience and Hazards) 2021: Relevant- see below

State Environmental Planning Policy (Resources and Energy) 2021: Not relevant. The proposal does not impact on matters relevant to the SEPP. ·

State Environmental Planning Policy (Transport and Infrastructure) 2021: Not relevant. The proposal does not impact on matters relevant to the SEPP.

State Environmental Planning Policy No 65—Design Quality of Residential Apartment Development: Not relevant. The proposal does not impact on matters relevant to the SEPP.

State Environmental Planning Policy (Resilience and Hazards) 2021

4. DEVELOPMENT APPLICATION 2022/58 PROPOSED RECREATION FACILITY (OUTDOOR) – MOTORBIKE TRACK AT 151 OLD BACKWATER ROAD, NARROMINE (Cont'd)

Clause 4.6 of the SEPP requires a consent authority to consider the contamination status of the land when a development application is being assessed. The land is not on Narromine Shire Council's contaminated land register or affected by issues raised in relation to environmental protection licence. The land has been used for rural purposes for some time, and no soil has been imported onto the site for the track. A site inspection did not reveal any matter indicative of land contamination risk. The proposed land use (motorcycle track) is not a sensitive land use.

As a result, land contamination is not an issue in relation to the proposed development.

Narromine Local Environmental Plan 2011

The Narromine Local Environmental Plan 2011 (LEP) applies to the land.

The land is zoned RU1 Primary Production. It is also adjacent to the R5 residential large lot zone.

Pursuant to the LEP, the proposed development is defined as a recreation facility (outdoor). Within the RU1 zone land use table, a recreation facility (outdoor) is a permissible use with consent.

The RU1 Zone has the following objectives

- *To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.*
- *To encourage diversity in primary industry enterprises and systems appropriate for the area.*
- *To minimise the fragmentation and alienation of resource lands.*
- *To minimise conflict between land uses within this zone and land uses within adjoining zones.*

The proposal may cause land use conflict because of acoustic impacts and stormwater management impacts. Acoustic impact will be discussed later. The adjacent R5 zoned land has the same objective to avoid land use conflict. The potential for land use conflict will increase as development intensifies on the R5 zoned land as a result of additional dwellings on the R5 zoned land, and this must be considered.

General Controls and Development Standards (Part 2, 4, 5 and 6)

4. DEVELOPMENT APPLICATION 2022/58 PROPOSED RECREATION FACILITY (OUTDOOR) – MOTORBIKE TRACK AT 151 OLD BACKWATER ROAD, NARROMINE (Cont'd)

The LEP also contains controls relating to development standards, miscellaneous provisions and local provisions. The controls relevant to the proposal are considered in **Table 3** below.

Table 3: Consideration of the LEP Controls

Control	Requirement	Proposal	Comply
Minimum subdivision Lot size (Cl 4.1)	400ha	No subdivision proposed	N/A
Rural Subdivision (Cl 4.2)		No subdivision proposed	N/A
Height of Buildings (Cl 4.3)		No building proposed	
Exceptions to Development Standards (Cl 4.6)		None proposed	
Land acquisition (Cl 5.1)	Owner-initiated acquisition provisions.	N/A	Yes
Development near zone boundaries (Cl 5.3)	Flexibility in permissible land use near zone boundaries	None proposed	
Heritage (Cl 5.10)	Consent authority to consider matters.	No heritage items, aboriginal objects or heritage conservation areas affected.	Yes
Flood planning (Cl 5.21)	Applies to the flood planning area. (Applicable – consider further).	The SEE states that any increased flood risk as a result of the proposal is unlikely. It states it is	N/A

Control	Requirement	Proposal	Comply
		not likely that the track will adversely affect flood behaviour, increase the current or future flood potential, or be detrimental to any other surrounding property. However, no engineering information has been provided to substantiate this claim regarding flooding.	
Earthworks (Cl 6.1)	All earthworks are ancillary to the 'recreation facility (outdoor)' (cl.6.1(2)(b)).	The motorbike track required substantial earthworks. These earthworks have already been carried out, and the matters for consideration require formal assessment- see below.	N/A Note: the application seeks approval for the use of the earthworks, not approval for the existing earthworks per se.
Stormwater Management (Cl 6.3)	This clause applies to all land in residential, business and industrial zones.	Does not apply in rural zones.	N/A
Terrestrial biodiversity (Cl 6.4)	Applies to land identified as "Sensitive Area" on the Terrestrial Biodiversity Map.	The land is not shown as a sensitive area on the map.	N/A
Riparian Land and watercourses Cl 6.5)	Applies to land identified as "Sensitive Area" on the Watercourse Map	The land is not shown as a sensitive area on the map, or within 40m of such an area.	N/A
Groundwater Vulnerability (Cl 6.6)	Applies to mapped 'vulnerable land'. Whole of site mapped.	Other than narrative in the SEE there is no expert statement of any adverse effect on	Yes

Control	Requirement	Proposal	Comply
		groundwater. However, is unlikely that the ponding of water on site will have a significant effect on groundwater. The applicant states that they will use a licenced bore for water supply if necessary, and that they are using well below their licence allocation.	
Essential services (Cl 6.8)	Adequate arrangements are required for: (a) the supply of water, (b) the supply of electricity, (c) the disposal and management of sewage, (d) stormwater drainage or on-site conservation, (e) suitable road access.	The development proposal adequately addresses the requirement for essential services, excluding (d) stormwater. Engineers' details show that the track as built would discharge at the low point on the western boundary. The results of calculations have been provided by the applicant. Duncan Priestley Engineering have provided the results of modelling of a 5% AEP event only, not other events such as the 1% AEP. However, it is not clear what model has been used for the information provided and consequently Council's engineering section would not have checked the validity of calculations.	No. Conditions would be required to address stormwater management.

Control	Requirement	Proposal	Comply
Airspace operations (Cl 6.9)	Consideration of the potential to penetrate the Limitation or Operations Surface and consultation required with relevant Commonwealth body.	The development will not penetrate the OLS.	Yes

The development may be contrary to one of the RU1 zone objectives and is neutral in relation to others; it is assessed that overall proposal is generally consistent with the LEP local provisions.

4.2 Section 4.15 (1)(a)(ii) - Provisions of any Proposed Instruments

Nil

4.3 Section 4.15(1)(a)(iii) - Provisions of any Development Control Plan

The following Development Control Plan is relevant to this application:

- *Narromine Development Control Plan 2011* ('the DCP').

Table 4: Consideration of the DCP Controls – Chapter 5C Rural Development

Control	Proposal	Comply
Setbacks (all structures) (50 metres from any local road; 40 metres from any side or rear property boundary).	Northern boundary – Old Backwater Road – approx. 5m min at the northwestern corner. – 90% variation proposed. Western Boundary – approx. 5-6 m – 85-90% variation proposed. Eastern boundary – approx. 20m – 50% variation proposed. While the proposal it is not a building per se, it is reasonable to regard the objectives of the setbacks as ensuring a buffer to surrounding uses, and importantly to protect visual amenity from the public realm (front setback). In this case, the significant "buffer" issue with surrounding development is acoustic impact, and the setback distances would have little impact. In terms of visual impact, effective screening vegetation along the front boundary and any other boundaries where the development is visible would achieve the assumed objectives of the setbacks if sufficient landscaping can be accommodated.	No (if a structure). However, one of the objectives of this control is to protect visual amenity and provide acoustic buffers. Landscaping would be required to protect visual amenity, while acoustic amenity is dependent on the outcome of acoustic assessment

Control	Proposal	Comply
Buffers Buffers between rural activities and dwellings (including dwellings on the same site) are important to ensure adverse impacts on the amenity of the dwelling are protected.	The nearest dwellings outside Lot 6, are separated by approx. 200-300m. (No suggested separation distance is provided for specifically motorbike tracks/recreation areas in the DCP). The stated objective in this case is for buffers to protect dwellings from adverse amenity impacts. In this case, the significant "buffer" issue with surrounding development is acoustic impact.	Protection of acoustic amenity- dependent on the outcome of the acoustic assessment (see below)
Building Heights	No buildings are proposed.	N/A
Access (All development applications are required to clearly identify the means of vehicular access, access points and the standard of access provided (all weather access). Vehicular access will be required to comply with relevant engineering standards).	No new access is proposed for the development. The existing access is adequate given that the proposal is for the use of residents, family, and friends only, with no spectators and a limitation on rider numbers.	Yes, capable of compliance subject to conditions.
Water Supply All water supplies for fire fighting purposes must meet the provisions of the NSW Rural Fire Service Planning for bushfire protection, in particular, the tanks are to be constructed of fire retardant materials such as concrete or metal or similar material.	There is water storage on site.	Yes, able to comply subject to conditions.

Control	Proposal	Comply
Effluent Disposal	Only low numbers of users are proposed. Users will use facilities at the existing house.	Yes
Contamination	The land is unlikely to be contaminated- see earlier narrative.	Yes
Bushfire See Planning for Bushfire Protection for additional controls that may be applicable to the development.	Not bushfire prone	N/A
Flooding Certain land in the Narromine Shire is identified as flood prone (according to the Narromine Local Environmental Plan 2011).	The land is within the flood planning area. See earlier, and narrative below.	No
Biosensitivity	The site is not mapped as sensitive from a biodiversity perspective. It has no vegetation. Aerial photography indicates the land was previously cleared of all but a few trees, prior to track construction earthworks.	Yes
Watercourses	The nearest mapped hydroline is at least 500m distant. No adverse impact is likely.	Yes
Rural Subdivision Provisions	Not applicable – no subdivision proposed.	N/A

Narromine Shire Council Section 7.12 Development Contributions Plan 2019.

The stated value of the use of the earthworks as a motorcycle track is nil. Therefore, no contributions fee applies. It is noted that the unapproved works may have attracted a development contribution, if approval had been sought prior to their development and the value was greater than $100,000.

4. DEVELOPMENT APPLICATION 2022/58 PROPOSED RECREATION FACILITY (OUTDOOR) – MOTORBIKE TRACK AT 151 OLD BACKWATER ROAD, NARROMINE (Cont'd)

4.4 Section 4.15(1)(a)(iiia) – Planning agreements under Section 7.4 of the EP&A Act

There have been no planning agreements entered into and there are no draft planning agreements being proposed for the site.

4.5 Section 4.15(1)(a)(iv) - Provisions of Regulations

Clause 62 of the Regulation contains matters that must be taken into consideration by a consent authority in determining a development application, comprising the following:

- If demolition of a building proposed - provisions of AS 2601; - (N/A)
- If on land subject to subdivision order under Schedule 7, provisions of that order and any development plan; - (N/A)
- Dark Sky Planning Guideline if applicable; - (N/A)
- *Low Rise Housing Diversity Design Guide for Development Applications* (July 2020) if for manor house or multi dwelling housing (terraces); - (N/A).

These provisions have been considered (where necessary).

4.6 Section 4.15(1)(b) - Likely Impacts of Development

The likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality must be considered. In this regard, potential impacts related to the proposal have been considered in response to SEPPs, LEP and DCP controls outlined above and the Key Issues section below.

The consideration of impacts on the natural and built environments includes the following:

- Context and setting – The proposed motorcycle track is potentially not compatible with the existing and desired future character of the locality. The Council has shown a clear policy intent for residential development in the area to intensify in the form of R5 large lot residential development. While the visual external impacts of the track can potentially be managed by vegetative screening, the acoustic impacts are more problematic as discussed below. The subject land - Lot 6 - and neighbouring Lot 7 are identified to be rezoned to R5 in the Narromine Shire Residential and Large Lot Residential (Land Use) Strategy 2018.

4. DEVELOPMENT APPLICATION 2022/58 PROPOSED RECREATION FACILITY (OUTDOOR) – MOTORBIKE TRACK AT 151 OLD BACKWATER ROAD, NARROMINE (Cont'd)

Lots 6 and 7 were excluded in the LEP amendment 11 due to owner objection to the proposed rezoning. Council did not progress LEP amendment for land where the owners objected to the change. However, a significant area of adjacent and other land has now been rezoned to R5.

- Access and traffic – Because the proposed motorcycle track is for the use of residents, their family and friends, with no spectators and a limit on the number of riders, there is likely to be minimal increase in the number of vehicles accessing the site.

- Public Domain – The proposed development is private, and not part of the public domain. The impacts on the public domain (essentially Old Backwater Rd) are visual, and these can be managed by vegetative screening.

- Utilities – Water supply for dust control is to be drawn from onsite water supply and reuse of collected stormwater. There is to be minimal increase in demand on public utilities.

- Heritage –The proposal does not involve or is near a heritage item or place identified in the LEP. An AHIMS search completed in July 2023 has identified no Aboriginal places or sites within 200m of the proposal. The location is on flat land, not near watercourses or vantage points, and the extensive disturbance of the land has occurred due to rural activities over an extended period, and more recently construction of the track. Consequently, it is considered the likelihood of occurrence of aboriginal archaeological items is very low.

- Other land resources – the land can no longer be used for agricultural uses due to construction of the motorcycle track. As a result, there has been a minor decrease in available agricultural land.

- Water/air/soils impacts – Erosion of the track area was visible during the site inspection. Over time this will lead to sedimentation of the ponds located within the track area, and consequently this sediment would require removal on a regular basis. A stormwater management plan has been submitted by the applicant, which outlines erosion and sediment control measures. These measures need to be supplemented in a number of areas, including the removal of sediment (to maintain the function of the ponds), and the northern boundary sediment control measure modified to recognise the vegetative buffer to be planted along the northern boundary (not only grass). Further, the reliance on grass for erosion and sediment control will require the grass to receive artificial watering if sufficient cover is to be achieved. Measures taken to date on site have been inadequate to manage erosion, sedimentation and site revegetation.

4. DEVELOPMENT APPLICATION 2022/58 PROPOSED RECREATION FACILITY (OUTDOOR) – MOTORBIKE TRACK AT 151 OLD BACKWATER ROAD, NARROMINE (Cont'd)

- Flora and fauna impacts – The proposal does not involve any removal of vegetation, and the land has been cleared in the past and highly disturbed by agricultural activity. The land is not located in an area of biodiversity significance, or in a native fauna or flora corridor. Fauna and flora impacts are likely to be minimal.

- Natural environment – The proposal proposes no additional changes to the topography, because the track has already been constructed as an unapproved development. The natural environment in the area has been highly disturbed and changed as a result of agricultural activity. Remnant vegetation occurs along the Old Backwater Road frontage and scattered trees elsewhere. Any landscape screening should seek to complement the values of the remnant vegetation.

- Noise and vibration – The operational noise from the track has been subject to an acoustic assessment for the applicant by Muller Acoustic Consulting (MAC). This assessment has been peer reviewed by Spectrum Acoustics, and the applicant given the opportunity to respond. This matter is discussed further below.

- Natural hazards – The proposal is in the LEP flood planning area. However, given the nature of the proposed activity, and the nature of the flood events in the area, it is unlikely that flood risk to people or built structures is increased. Advice from Council's engineer supports this conclusion.

- Safety, security and crime prevention. No specific community safety, security or crime prevention measures are proposed. The property is secured by a gate and rural fencing. The proposal will operate involving only residents, family and friends, and with limited numbers. It is considered that no additional crime prevention measures are required.

- Social impact – The proposal will have a positive impact on the residents, who have a common interest in motorcycle riding. Operation of the track may have a negative social impact on the local community should adverse acoustic impacts be experienced.

- Economic impact – The proposal is for use of earthworks as a motorcycle track by residents, family and friends. It will have a minimal economic impact.

- Site design and internal design – The earthworks forming the track are not compliant with a number of dimensional and other requirements in the DCP. These include setbacks. It may be possible to achieve the intent of most of controls and requirements through conditions of development consent, however the solutions to these may result in a different outcome.

4. DEVELOPMENT APPLICATION 2022/58 PROPOSED RECREATION FACILITY (OUTDOOR) – MOTORBIKE TRACK AT 151 OLD BACKWATER ROAD, NARROMINE (Cont'd)

In particular, erosion control, stormwater discharge (spread rather than point discharge), and visual amenity/landscaping aspects of the development need to be addressed, which may have implications for the location of the track adjacent to the northern (road) and western (adjacent property) boundaries.

- Construction. Modifications to the earthworks may be required to resolve stormwater discharge and adequate landscape screening issues, which could necessitate redesign of the track to address identified issues.

- Broader impacts – Acoustic impacts of the development may adversely affect the success of Council's strategy to intensify development in the recently expanded R5 Large Lot Residential zoned area located adjacent and nearby due to land use conflict. These impacts may mean that some nearby housing could require acoustic measures to ensure a satisfactory level of noise (acoustic) amenity inside the dwellings.

4.7 Section 4.15(1)(c) - Suitability of the site

The suitability of the site for the proposed use is highly dependent on its acoustic impact. This is a critical issue because of the zone objectives to minimise land use conflict, and Council's actions to provide the conditions for the intensification of development in the expanded R5 land use zone. An adverse acoustic assessment would render the site unsuitable for the proposed use (see discussion of the acoustic assessment below).

4.8 Section 4.15(1)(d) - Public Submissions

These submissions are considered in Section 5 of this report.

4.9 Section 4.15(1)(e) - Public interest

The proposal provides minimal social, economic and environmental benefits to the wider community. It is a private facility primarily for the use of the residents of the site. Many of the adverse impacts of the proposal may potentially be addressed with changes to the design and other ancillary works. However, should the development have an unacceptable acoustic impact, it would not be in the public interest to proceed (see discussion of the acoustic assessment below).

4. DEVELOPMENT APPLICATION 2022/58 PROPOSED RECREATION FACILITY (OUTDOOR) – MOTORBIKE TRACK AT 151 OLD BACKWATER ROAD, NARROMINE (Cont'd)

5. REFERRALS AND SUBMISSIONS

5.1 Agency Referrals and Concurrence

The development application has not been required to be referred to external agencies for comment/concurrence as required by the EP&A Act.

5.2 Council referrals (internal)

The development application has been referred to various Council officers for technical review as outlined **Table 5.**

Table 5: Consideration of Council Referrals

Officer	Comments
Engineering staff	Local flood issues, based on changes to the site and existing site conditions, have not been considered in the reports. Council's current levee study shows the town cowal is located within close vicinity of the bike track lot. Any flooding to occur through the town cowal will not be impacted by the bike track due to the size, capacity and catchment of the town cowal relating to the ratio of the track. The earth cut and track are acting as a detention basin, and as per the reports, the existing lawful point of discharge, stormwater catchment, site capacity and no changes to the existing outflow point of the property and the existing direction of flow have not been modified.

The outstanding issues raised by Council officers are considered in the Key Issues section of this report.

4. DEVELOPMENT APPLICATION 2022/58 PROPOSED RECREATION FACILITY (OUTDOOR) – MOTORBIKE TRACK AT 151 OLD BACKWATER ROAD, NARROMINE (Cont'd)

5.3 Community Consultation

The proposal was notified in accordance with statutory requirements and Council policy from 10/05/2023 until 09/06/2023. The notification included the following:

- Notification letters sent to adjoining and adjacent properties
- Notification on the Council's website and social media

The Council received a total of **18** unique submissions. The issues raised in these submissions are considered in **Table 6**.

Table 6: Community Submissions

Issue	Detail of Issue Raised	Assessment Comment
Training facility for children	The track will provide an excellent training facility for the applicant's children and there are no alternatives nearby	The value of the proposal to the family is noted. The application will be assessed on planning considerations.
Positive development of children	Sporting activities such as motorcycle riding encourage positive children's development and a diversion from screen time and less desirable and/or antisocial activities	The value of the proposal to the development of the applicant's children is noted. The application will be assessed on planning considerations.
Character References	Contribution to community of the proponent and family.	Not a valid planning consideration.
Uncertainty regarding development compliance	How will the community be assured that the applicant will comply with the conditions of development consent (particularly noise and dust impacts)?	The applicant is bound to comply with any development consent that might be issued. Enforcement relies on Council awareness on noncompliance, such as the receipt of resident complaints.

Issue	Detail of Issue Raised	Assessment Comment
Noise	Track based motorcycle noise over extended periods is not compatible with the area. Noise of this type is disturbing and can cause anxiety and health impacts. Some submissions stated they experienced minimal or no acoustic impact from the applicant's children's use of motorcycles.	See discussion on the acoustic impact below
Stormwater, erosion and Flooding	Stormwater is not proposed to be well managed and will adversely affect adjacent properties. Erosion will occur. The earthworks will exacerbate flooding. A submission stated that they experienced no adverse stormwater impacts as a result of the proposal.	The proposal will not generate additional stormwater. However, the point of discharge towards neighbouring properties is concentrated, and needs to be more dispersed. Further work is required on stormwater and erosion control strategies and works. The drainage from the proposal is in a westerly direction, whereas the property stating no stormwater impacts is located to the east.
Dust	The proposal will increase dust levels. What are the triggers for dust suppression actions (e.g., watering the track). Some submissions stated that agricultural activities already created noise and dust, and that the proposal would not have a significant impact as a result.	The locality has raised dust levels from time to time due to weather conditions and agricultural activities. However, the proposal is a potential additional dust source that can and should be managed. Should the application be approved a defined dust management plan is required. On inspection, revegetation of the exposed earthworks does not appear to have been extensively undertaken, or successful, notwithstanding recent relatively wet seasons.

Issue	Detail of Issue Raised	Assessment Comment
Flooding	The earthworks will exacerbate flooding by altering flood water flow paths.	No engineering assessment of the impact of the earthworks on flooding of nearby properties and infrastructure was provided with the application, although qualitative narrative is contained in the SEE. Notwithstanding this, Council engineers have not raised concerns regarding additional flood hazard.
Landscaping	The proposed landscaping is inadequate to provide visual screening and dust suppression.	There is a need for a revised landscape plan which provides adequate visual buffering, and dust suppression. The small setbacks of the track to the northern and western boundaries limit the ability for adequate landscaping. Landscaping should aim to provide screening, revegetate exposed soil, assist in stormwater and erosion control, and complement the biodiversity values of the remnant vegetation along Old Backwater Road. In addition, the landscaping plan should specify actions within the establishment phase of the plants.
Impact on rural land and agriculture	Sensitive stock may be disturbed by extended motorcycle noise and dust. The land occupied by the track is no longer available for agricultural production. The avoidance of land use conflicts and maintenance of the natural resource base for agriculture are objectives of the RU1 zone.	In some circumstances, sensitive stock may be disturbed by motorcycle noise, however, given the widespread use of agricultural machinery to which stock have become accustomed it is considered this has a low likelihood. The land occupied by the track is a small proportion of the agricultural land is the locality and can be restored to agriculture at a later date.

Issue	Detail of Issue Raised	Assessment Comment
Impact on rural land and agriculture (Cont'd)		Accordingly, this is not considered a significant concern. The proposal is potentially contrary to the avoidance of land use conflict objective of the RU1 zone and adjoining R5 zone depending on the acoustic assessment (see below), and the ability to manage other external impacts, such as dust and stormwater.
Social /health issues	The proposal has created unfortunate division and anxiety in the community. Increased anxiety and health concerns may be caused by the acoustic impact. Some may suffer adverse health impacts as a result of elevated noise and dust levels.	The assessment of the proposal will consider acoustic impacts and dust suppression relative to accepted practice and standards.
Visual Amenity loss	The earthworks have an adverse visual impact. Trees were removed during the earthworks.	Landscaping should aim to provide screening, revegetate exposed soil, assist in stormwater and erosion control, and complement the biodiversity values of the remnant vegetation along Old Backwater Road. It is not known what species of plant were removed (it is difficult to determine this from the aerial photographs), and whether they were removed in conjunction with the construction of the track. However, if these were native trees and grasses, offset planting should be undertaken as part of the site landscaping.
Biodiversity	Removal of trees and native grass during construction Impact of noise and dust on flora and fauna	It is not known what species of plant were removed (it is difficult to determine this from the aerial photographs), and whether they were removed in conjunction with the construction of the track.

Issue	Detail of Issue Raised	Assessment Comment
Biodiversity (Cont'd)		However, if these were native trees and grasses, offset planting should be undertaken as part of the site landscaping. There is significant agricultural activity in the area, and no areas of biodiversity sensitivity per se. The impact of noise and dust on native flora and fauna is noted, but is not likely to be significant.
Loss of rural residential character	Lots of land for sale and future subdivision potential negatively impacted due to land use conflict that would be evident.	Potential impact to land value has not been considered, however land use conflict is a valid issue.
Property value negatively impacted	Conflict in setting likely to hinder land sales and property values.	Not a valid planning consideration.
Impact on the existing and recently rezoned R5 Large Lot Residential land	The proposal is contrary to the intent of the R5 zone, which aims to achieve more intensive rural residential development. The proposal will deter further development of this type due to noise and dust impacts.	Valid strategic consideration.
Illegally constructed	Concern Council will set a precedence to accept applications for illegal works. Also concern that the track will be used for commercial purposes.	The proposal is for use of the earthworks as a motorcycle track, not for the earthworks of the track itself. It is not possible to provide retrospective development approval. Council will need to satisfy itself that the earthworks meet appropriate standards. The applicant has stated the track will not be used for commercial purposes or for organised events.

4. DEVELOPMENT APPLICATION 2022/58 PROPOSED RECREATION FACILITY (OUTDOOR) – MOTORBIKE TRACK AT 151 OLD BACKWATER ROAD, NARROMINE (Cont'd)

6. KEY ISSUES

The following key issues are relevant to the assessment of this application consistent with the requirements of the Environmental Planning and Assessment Act, Council policies and plans, and recognised planning considerations.

6.1 ACOUSTIC AMENITY

Issue:
Acoustic amenity (noise) is one of the most significant issues associated with this development.

In response to the significance of this issue, the applicant engaged an acoustic consultant (Muller Acoustic Consulting (MAC)) to undertake a noise assessment, and in turn Council engaged an acoustic consultant (Spectrum Acoustics (SA)) to peer review the applicant's consultant's report. The applicant was then given an opportunity to respond to the outcome of the peer review.

This material was made publicly available during the public exhibition, to best inform the community about the issue and the technical assessments.

The acoustic assessment is based on desktop modelling. The modelling was assisted by measurement on site, which was used to help calibrate the model. It is important to understand that the assessment is not based on the onsite measurements- the onsite measurements were undertaken to assist in setting the parameters of the desktop model.

The outcome of the acoustic assessment is complicated by the need to use certain noise level standards and policies that are not directly applicable to motorsport.

As a result, the EPA Noise standard for Industry (NPI) is used to provide noise criteria, complemented by the EPA Noise Guide for Local Government (NGLG).

In the view of the applicant's consultant

"*Whilst the NGLG or the NPI does not specifically provide method to assess potential noise emissions from a private motocross track, considering that the NGLG is underpinned by the principles contained in the NPI, use of these principles and parameters would be considered appropriate to provide a transparent impact assessment methodology*."

4. DEVELOPMENT APPLICATION 2022/58 PROPOSED RECREATION FACILITY (OUTDOOR) – MOTORBIKE TRACK AT 151 OLD BACKWATER ROAD, NARROMINE (Cont'd)

The MAC report outlines the 2 criteria applicable as per the NPI.

There are two criteria to consider when establishing noise assessment criteria/goals which the NPI defines as Project Noise Trigger Levels (PNTLs). These criteria are:

The MAC report assesses two categories of amenity noise levels:

- the intrusiveness noise level (INL), which aims to protect against significant changes in noise levels and seeks to limit the degree of change a new noise source introduces to an existing environment; and

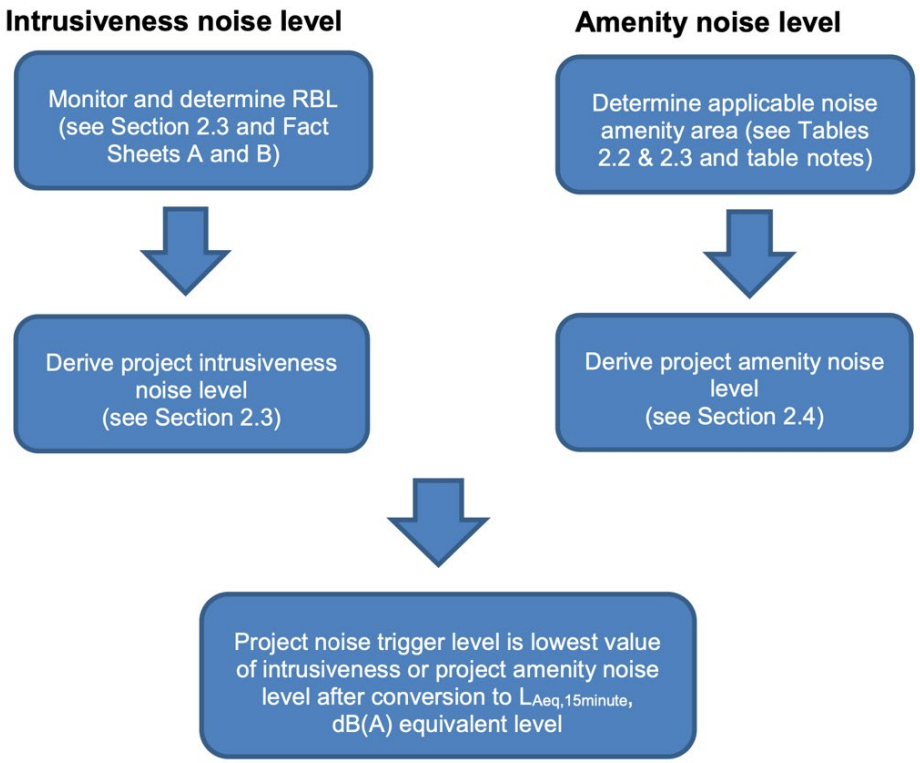
- the amenity noise level (ANL) seeks to protect against cumulative noise impacts from industry and maintain amenity for particular land uses.

The application of these noise measures to an acoustic assessment determines the project noise trigger level.

The NPI describes the project trigger level as "*a level that, if exceeded, would indicate a potential noise impact on the community, and so 'trigger' a management response; for example, further investigation of mitigation measures.*

The project noise trigger level, feasible and reasonable mitigation, and consideration of residual noise impacts are used together to assess noise impact and manage the noise from a proposal or site."

The appropriate project trigger level is determined as in the flowing flow chart:



4. DEVELOPMENT APPLICATION 2022/58 PROPOSED RECREATION FACILITY (OUTDOOR) – MOTORBIKE TRACK AT 151 OLD BACKWATER ROAD, NARROMINE (Cont'd)

NPI states that: "*typically the intrusiveness level will inform the project noise trigger level in areas with little industry (and/or ambient noise levels), whereas the amenity level will inform the project noise trigger level in areas with higher existing background noise levels.*"

MAC adopted a Project Amenity Noise Level (PANL) of 50dB LAeq(period) or 53dB LAeq(15min) for residential receivers as appropriate in protecting amenity for receivers in proximity to the track. This is the NPI recommended amenity noise level for rural dwellings.

The intrusiveness noise level (INL) (LAeq(15min)) is the background noise level (RBL) + 5dB. An intrusiveness noise level aims to manage the extent of change a new noise source introduces to an existing environment. Hence, when assessing intrusiveness, background noise levels need to be measured.

According to MAC, when background levels are not measured the minimum applicable RBL of 35dBA for the daytime period can be adopted. This results in an INL of 40dB LAeq(15min) for this site. These are the assumed minimum levels used in the NPI.

MAC modelled noise from the track for 3 motorcycles circulating, for a 1 hour period and an 11 hour daytime period.

They found:

"*Predicted noise levels from typical use of the track (three motorcycles circulating), range up to 46dB LAeq(1hr), are expected to satisfy the daytime Amenity Noise Level of 50dB LAeq(period) at all identified residential receivers*."

"*However, if intrusiveness were to be assessed in accordance with the NPI, adopting the rating minimum background level of 35dBA, resulting in an INL of 40dB LAeq(15min), noise levels from typical use of the track are expected to exceed the INL by:*

- *up to 1dB at three receivers;*
- *up to 2dB at one receiver;*
- *up to 3dB at one receiver; and*
- *up to 6dB at two receivers*."

4. DEVELOPMENT APPLICATION 2022/58 PROPOSED RECREATION FACILITY (OUTDOOR) – MOTORBIKE TRACK AT 151 OLD BACKWATER ROAD, NARROMINE (Cont'd)

According to the NPI level of significance of exceedance of the INL is as follows:

If the predicted noise level minus the project noise trigger level is:	And the total cumulative industrial noise level is:	Then the significance of residual noise level is:
≥ 3 but ≤ 5 dB(A)	< recommended amenity noise level or > recommended amenity noise level, but the increase in total cumulative industrial noise level resulting from the development is less than or equal to 1dB	Marginal
≥ 3 but ≤ 5 dB(A)	> recommended amenity noise level and the increase in total cumulative industrial noise level resulting from the development is more than 1 dB	Moderate
> 5 dB(A)	≤ recommended amenity noise level	Moderate
> 5 dB(A)	> recommended amenity noise level	Significant

To provide an indication of the meaning of marginal and moderate, the NPI provides details of potential treatments to mitigate the noise impact at increasing levels of significance, as shown in the following table:

Significance of residual noise level	Example of potential treatment
Negligible	The exceedances would not be discernible by the average listener and therefore would not warrant receiver-based treatments or controls.
Marginal	Provide mechanical ventilation/comfort condition systems to enable windows to be closed without compromising internal air quality/amenity.
Moderate	As for 'marginal', but also upgraded façade elements, such as windows, doors or roof insulation, to further increase the ability of the building façade to reduce noise levels.
Significant	May include suitable commercial agreements where considered feasible and reasonable.

In this case, the intrusiveness noise impact is moderate at up to three residential receivers, and marginal at another four receivers.

4. DEVELOPMENT APPLICATION 2022/58 PROPOSED RECREATION FACILITY (OUTDOOR) – MOTORBIKE TRACK AT 151 OLD BACKWATER ROAD, NARROMINE (Cont'd)

More intensive residential development if subdivision of the adjacent R5 large lot residential zoned land occurred, would result in a greater number of dwellings being affected.

The peer review undertaken by Spectrum is critical of MAC's criteria and state "*MAC has used the wrong noise criterion to determine potential noise impacts and that this has understated the residual noise impacts at many residential receivers*."

Page 6 of Spectrums Peer Review states "*it is assumed that the results of the noise modelling are based on the measured noise levels ("calibrated model") with three generic motorbikes on the track. It is also assumed that the sound power level has been modelled as a "representative" location somewhere near the centre of the track. That is, the resultant noise contours approximate to concentric circles.*

Changes to the operation of the site that lead to increases in the number of motorbikes using the track at the same time, would, most likely, result in increases in received noise. It is reasonable to assume that increasing the number of motorbikes from three to five could increase the noise levels by a factor of 10xlog 5/3, or plus 2dB(A).

Based on the results presented in Table 1, this would mean that the applicable noise criterion could be exceeded by between 1 and 11 dB(A) Leq (15 min) at up to 16 receivers."

Notwithstanding this, in later correspondence with Council (seeking to clarify Spectrum's conclusions), they state "*I believe that it is highly likely that the criterion will be exceeded each time the track is in use (under the assessed/modelled conditions). The full interpretation of the results is somewhat more objective, however, as the proponent has indicated that the track will only be used for up to 6 hours per week. So, the noise will not be constant, and there will be plenty of times of respite from it. So, from a technical point of view, the noise criterion may be exceeded for up to 24 x 15 minute periods over 4 days each week. How significantly this impacts on the acoustic amenity of the residents is open to objective interpretation*."

MAC state that "*considering that the noise emission is not constant over a whole day, as there are periods where the track is not operating, this would provide respite*", i.e., the moderate significance of intrusive noise would be limited in time and therefore potentially more tolerable by the receivers.

Council comment:

The acoustic consultants have different views on the validity of the modelling used. However there appears to be agreement on the number of dwellings moderately and marginally affected by noise, although the Spectrum peer review states the impact may be understated in the MAC report for many residential receivers. The NPI table showing mitigation measures indicates that even at a marginally affected level, mechanical ventilation systems with closed windows may be necessary to mitigate the impact.

4. DEVELOPMENT APPLICATION 2022/58 PROPOSED RECREATION FACILITY (OUTDOOR) – MOTORBIKE TRACK AT 151 OLD BACKWATER ROAD, NARROMINE (Cont'd)

On the other hand, both consultants acknowledge that it is highly unlikely the track would be used for continuous periods without a break, and that there would be "plenty" of periods of respite from any noise impact.

An important issue is Council's policy intent for the area. The recent rezoning of a significant area of adjacent land from RU1 to R5 large lot residential demonstrates Council's desire to intensify the development of the area to "lifestyle" lots.

The impact of this rezoning (for which the applicant declined to include the subject land) is that any noise impact will be experienced by a greater number of houses, and that a number of these dwellings will be located closer to the noise source than most of the existing receivers. The impact of this rezoning, and subsequent development of the land will also be to reduce rural/agricultural activity in the area and reduce its role as a generator of noise and dust.

On balance, it is considered that noise amenity issues have not been satisfactorily resolved. This is because of:

- concerns about inadequacies of MAC's methodology by the peer reviewer,
- the peer reviewer's concern that the impact on and number of affected dwellings may be greater than that identified by Spectrum
- outcome of MAC's modelling (number of affected receivers) and the nature of the mitigation measures typically required
- the future intensification of residential development as a result of the rezoning of a significant area of land to R5 will increase the number of adversely affected dwellings.

6.2 STORMWATER ONTO NEIGHBOURING LAND, and EROSION CONTROL GENERALLY

Notwithstanding a stormwater management plan has been produced as a supporting document to the application, stormwater management has not been satisfactorily resolved.

The engineering plans do not show drainage paths, and the calculations are for a 5% AEP event, but no examination of a 1% AEP event. The impact of a 1% AEP event is important because climate change is considered to bring more frequent significant events. Calculations are not provided for verification, only the outcome of these calculations.

The erosion control strategy is deficient for the reasons outlined earlier, with erosion and sedimentation of the ponds evident on inspection, and limited scope for sediment control measures between the track and the western property boundary in particular.

Addressing the above issues requires further engineering investigation and documentation, and may involve changes to the track layout.

4. DEVELOPMENT APPLICATION 2022/58 PROPOSED RECREATION FACILITY (OUTDOOR) – MOTORBIKE TRACK AT 151 OLD BACKWATER ROAD, NARROMINE (Cont'd)

6.3 LANDSCAPING AND VISUAL IMPACT

The existing landscaping is deficient, and a professionally developed landscape plan is required to address visual screening, dust control and sedimentation matters. This landscaping should be designed to complement the biodiversity values of the adjacent remnant vegetation on Old Backwater Road. There also needs to be a plan for the establishment phase, as well as ongoing maintenance of the landscaping, because of the climatic conditions of the Narromine area.

6.4 Planning Policy

The Council has a clear policy framework for the development of rural residential development- Narromine Shire Residential and Large Lot Residential (Land Use) Strategy, which was reviewed in 2021. As a result of the Review, the rezoning of a significant area of land adjacent to the subject site has occurred- from RU1 to R5 Large Lot Residential.

This rezoning occurred in response to "*the supply of R5 Large Lot Residential land remaining close to fully developed or subdivision potential has been constrained by costs, landownership or the proposed Inland Rail alignment*".

The acoustic impact of the proposed motorcycle track is highly likely to have a negative impact on the desirability of this land for subdivision development, and any development will increase the number of noise affected dwellings. Accordingly, it is considered the Proposal is not consistent with Council's land use planning strategy and desired future character for the locality.

7. CONCLUSION

The Proposal has been assessed consistent with Council's statutory responsibilities under the Environmental Planning Assessment Act, and related policies and plans, as well as accepted planning considerations.

It is considered Development Application 2022/58 Proposed Recreation Facility (Outdoor) – Motorbike Track at 151 Old Backwater Road, Narromine should be refused consent because of its acoustic impact, impact on stormwater drainage, noncompliance with the LEP zone objectives in relation to land use conflict, inconsistency with Council's land use strategy for the locality, noncompliance with the DCP, and a number of unresolved issues relating to such matters as landscape, stormwater management, erosion control, dust suppression.

4. DEVELOPMENT APPLICATION 2022/58 PROPOSED RECREATION FACILITY (OUTDOOR) – MOTORBIKE TRACK AT 151 OLD BACKWATER ROAD, NARROMINE (Cont'd)

Legal and Regulatory Compliance

This development assessment has been undertaken consistent with Council's obligations under the Environmental Planning and Assessment Act, 1979, as amended.

Division 8.2 of the *Environmental Planning and Assessment Act* gives the applicant the ability to seek a review of the determination. An applicant may request the Council to review any determination within six (6) months after the date the applicant received notice. The prescribed fee must be paid with the request for a review. Once the review is completed the Council may confirm or change the determination.

If there is an appeal, the period of time within which Council may undertake a review is extended up to the time the Court hands down its decision.

An applicant can appeal against this decision in the Land and Environment Court within six (6) months of the date of a notice of determination (section 8.7 of the *Environmental Planning and Assessment Act, 1979)*.

Risk Management Issues

Council will be the relevant authority to address any noncompliance with conditions of development consent, and to enforce any adopted management measures should Council wish to approve the development.

Internal/ External Consultation

Community and statutory consultation have been undertaken in accordance with Environmental Planning and Assessment Act and Regulation.

Attachments

The following attachments are provided:

- Attachment A: Noise Assessment prepared by MAC
- Attachment B: Peer Review - Noise Assessment prepared by Spectrum Acoustics.
- Attachment C: Engineering Plans

As this is a planning decision made in the exercise of a function of a Council under the Environmental Planning and Assessment Act 1979, including a decision relating to a development application under that Act, a division is required to be called.

4. DEVELOPMENT APPLICATION 2022/58 PROPOSED RECREATION FACILITY (OUTDOOR) – MOTORBIKE TRACK AT 151 OLD BACKWATER ROAD, NARROMINE (Cont'd)

RECOMMENDATION

That Council resolve:

That the Development Application 2022/58 Proposed Recreation Facility (Outdoor) – Motorbike Track at 151 Old Backwater Road, Narromine be REFUSED pursuant to Section 4.16(1)(b) of the *Environmental Planning and Assessment Act 1979*.

Reasons for this recommendation include:

1. The development is not consistent with the zone objectives for the RU1 Primary Production zone.
2. Inconsistency with Council's land use strategy and policy intent for the locality, including the Narromine Shire Residential and Large Lot Residential (Land Use) Strategy and the outcome of its 2021 review.
3. Noncompliance with the development standards and/or explicit or implied objectives of the Narromine Development Control Plan including:
    - Chapter 2 Plan Objectives-
        - To manage development such that it encourages planned and sustainable growth, whilst having regard to the local character, amenity, agricultural productivity and environmental values associated with the local government area;
        - To provide the basis for future development; and
        - To provide confidence to the community about the quality of development within the LGA
    - Chapter 3 Submitting a Development Application (particularly Statement of Environmental effect requirements) and considerations
    - Chapter 5(c) Rural Development including such matters as setbacks, landscape, stormwater management, erosion control, and dust suppression.
4. The application has not demonstrated a suitable stormwater management solution for the site.
5. The application has not demonstrated a suitable landscape solution for the site.
6. The application has not demonstrated that acoustic impacts can be satisfactorily managed.
7. The application has not demonstrated the proposed use can satisfactorily operate on the site
8. Approval of this development would be contrary to the public interest.

Phil Johnston
Director Community and Economic Development

Noise Assessment

Motocross Track
Old Backwater Road
Narromine, NSW

Prepared for: Mr Luke Harding
January 2023
MAC211352-03RP1V1

Muller Acoustic Consulting

Document Information

Noise Assessment

Motocross Track

Old Backwater Road

Narromine, NSW

Prepared for: Mr Luke Harding

151 Old Backwater Road

Narromine, NSW 2821

Prepared by: Muller Acoustic Consulting Pty Ltd

PO Box 678, Kotara NSW 2289

ABN: 36 602 225 132

P: +61 2 4920 1833

www.mulleracoustic.com

DOCUMENT ID	DATE	PREPARED	SIGNED	REVIEWED	SIGNED
MAC211352-03RP1V1	25 January 2023	Rod Linnett		Oliver Muller	

CONTENTS

This page has been intentionally left blank

1 Introduction

Muller Acoustic Consulting Pty Ltd (MAC) has been commissioned by Mr Luke Harding to prepare a Noise Assessment (NA) to quantify emissions from the private motocross track (the 'project') at 151 Old Backwater Road, Narromine NSW.

MAC has previously prepared a noise assessment (MAC211352-01RP1, dated 12 May 2021 – the 'historic' report) of the proposed motocross track based on a noise modelling assessment, which on review by Narromine Council, sought additional information regarding the potential for noise emission.

Additional measurements of motorcycles using the track were completed to best simulate its future use. Measurements at locations some distance from the track were also taken to 'calibrate' the noise model, allowing for a high confidence level in the calculation of noise levels at receiver locations.

The assessment has been undertaken in accordance with the following documents:

- NSW Environment Protection Authority (EPA), Noise Guide for Local Government (NGLG), 2013;
- NSW Environment Protection Authority (EPA), Noise Policy for Industry (NPI) 2017;
- NSW Environment Protection Authority (EPA's), Approved methods for the measurement and analysis of environmental noise in NSW, 2022;
- Australian Standard AS 1055:2018 - Acoustics - Description and measurement of environmental noise - General Procedures;
- International Organisation for Standardisation (ISO) 9613-1:1993 (ISO9613:1) - Acoustics - Attenuation of Sound During Propagation Outdoors - Part 1: Calculation of the Absorption of Sound by the Atmosphere; and
- International Organisation for Standardisation (ISO) 9613-2:1996 (ISO9613:2) - Acoustics - Attenuation of Sound during Propagation Outdoors - Part 2: General Method of Calculation.

A glossary of terms, definitions and abbreviations used in this report is provided in **Appendix A**.

This page has been intentionally left blank

2 Proposed Activities and Operating Hours

The motocross track is privately owned and will not be available for public use or hire. Generally, the track will be used for training and practice purposes for junior motocross riders as follows:

- three (3) to four (4) sessions per week up to approximately two (2) hours per session;
- a maximum cumulative total of approximately six (6) hours per week; and
- during the during the daytime period (7am – 6pm) generally between 3pm to 6pm Monday to Friday and between 10am to 5pm Saturday and Sunday.

2.1 Receiver Review

A review of residential receivers in proximity to the project has been completed and are summarised in **Table 1. Figure 1** provides a locality plan showing the position of these receivers in relation to the project.

Table 1 Receiver Locations

Receiver	Description	Receiver Type	Coordinates (GDA94/MGA55)	
			Easting	Northing
R01	76 Wingfield Road	Rural Residential	615109	6432011
R02	96 Wingfield Road	Rural Residential	615004	6431839
R03	75 Wingfield Road	Rural Residential	615489	6431911
R04	57 Wingfield Road	Rural Residential	615510	6432087
R05	54 Wingfield Road	Rural Residential	615400	6432234
R06	44 Wingfield Road	Rural Residential	615590	6432204
R07	37 Wingfield Road	Rural Residential	615648	6432118
R08	16 Wingfield Road	Rural Residential	615599	6432379
R09	127 Old Backwater Road	Rural Residential	615528	6432436
R10	127 Old Backwater Road	Rural Residential	615574	6432430
R11	87 Old Backwater Road	Rural Residential	615791	6432417
R12	203 Old Backwater Road	Rural Residential	614619	6432572
R13	182 Old Backwater Road	Rural Residential	614863	6432768
R14	190 Old Backwater Road	Rural Residential	614794	6432736
R15	200 Old Backwater Road	Rural Residential	614638	6432795
R16	212 Old Backwater Road	Rural Residential	614527	6432757
R17	244 Old Backwater Road	Rural Residential	614211	6432805
R18	283 Old Backwater Road	Rural Residential	614330	6432950
R19	265 Old Backwater Road	Rural Residential	614005	6432640
PR01[1]	151 Old Backwater Road	Rural Residential	615108	6432389
PR02[1]	149 Old Backwater Road	Rural Residential	615161	6432210

Note 1: Project related receiver.

FIGURE 1

PROJECT LAYOUT

MAC211352

Narromine Motocross Track

KEY

- Receivers
- Measurement Locations
- Track

3 Relevant Guidance

There is no specific guidance in NSW for the assessment of motorsport on a privately owned facility. The most relevant guidance available are the NSW EPA's Noise Guide for Local Government (NGLG) and Noise Policy for Industry (NPI).

3.1 EPA Noise Guide for Local Government

The aim of the NGLG is to help councils assess, manage and regulate noise issues. Part 2 of the NGLG outlines the noise assessment process, being an examination of the nature and characteristics of a noise and can involve verifying aural factors such as:

- the location of the noise source;
- its audibility at certain locations;
- the time the noise is made and its duration;
- its characteristics; and
- the reported effect it has on people.

This part of the NGLG discusses how an authorised person can judge whether a noise is audible, excessively long in duration, or offensive, as defined by the legislation[1] and outlines techniques for measuring noise.

3.2 EPA Noise Policy for Industry

The EPA released the Noise Policy for Industry (NPI) in October 2017 which provides a process for establishing noise criteria for consents and licenses enabling the EPA to regulate noise emissions from scheduled premises under the Protection of the Environment Operations Act 1997 (POEO Act).

The objectives of the NPI are to:

- provide noise criteria that is used to assess the change in both short term and long-term noise levels;
- provide a clear and consistent framework for assessing environmental noise impacts from industrial premises and industrial development proposals;
- promote the use of best-practice noise mitigation measures that are feasible and reasonable where potential impacts have been identified; and

[1] Protection of the Environment Operations Act 1997, POEO Act and the Protection of the Environment Operations (Noise Control) Regulation 2008

- support a process to guide the determination of achievable noise limits for planning approvals and/or licences, considering the matters that must be considered under the relevant legislation (such as the economic and social benefits and impacts of industrial development).

The purpose of the NPI is to ensure noise impacts associated with particular industrial developments are evaluated and managed in a consistent and transparent manner. It provides noise levels for assessing the potential impact of noise from industry and includes a framework for considering feasible and reasonable noise mitigation measures. The Environmental Planning and Assessment Act 1979 (EP&A Act) and the POEO Act require that authorities examine and consider matters affecting the environment when making decisions about development and activities. The policy also provides a procedure for the development of appropriate and achievable statutory noise limits and operational requirements for development consents and environment protection licences.

In general, the policy applies to industrial development projects such as industrial premises, extractive industry, commercial operations, warehousing premises, maintenance and repair facility premises, intensive agricultural and livestock operations and utility generation/reticulation service premises.

Section 1.5 of the NPI specifically states that noise from sporting facilities, including motor sport facilities are excluded from the policy.

3.3 Selection of Appropriate Noise Impact Assessment Criteria

In summary, the NGLG focusses on the assessment of noise issues and compliance with the POEO Act, whereas the primary intent of the NPI is to provide a method for assessing noise emissions from industrial noise sources with emphasis around the planning, design, approval, development and management of industrial premises.

Whilst the NGLG or the NPI does not specifically provide method to assess potential noise emissions from a private motocross track, considering that the NGLG is underpinned by the principles contained in the NPI, use of these principles and parameters would be considered appropriate to provide a transparent impact assessment methodology.

In determining an overall noise level to indicate potential noise impacts, the NPI considers two factors:

- the **intrusiveness noise level**, which aims to protect against significant changes in noise levels and seeks to limit the degree of change a new noise source introduces to an existing environment; and

- the **amenity noise level** seeks to protect against cumulative noise impacts from industry and maintain amenity for particular land uses

Generally, for a commercial or industrial project being assessed in accordance with the methods and guidelines in the NPI, the determination of Project Noise Trigger Levels[2] (PNTL) would be undertaken. However, considering the setting, application of the NPI and NGLG, adopting the (NPI) recommended amenity noise levels as noise goals for the track would be considered appropriate as it aims to protect the acoustic amenity of surrounding receivers over the course of a typical day.

[2] The project noise trigger level is the lower (that is, the more stringent) value of the intrusiveness noise level and amenity noise level determined in Sections 2.3 and 2.4 of the NPI.

This page has been intentionally left blank

4 Assessment Criteria

4.1 Amenity Noise Levels (ANL)

The ANL is relevant to a specific land use or locality. To limit continuing increases in intrusiveness levels, the ambient noise level within an area from all combined industrial sources should remain below the (relevant) recommended amenity noise levels specified in Table 2.2 (of the NPI), reproduced in **Table 2**. The NPI defines two categories of amenity noise levels:

- **Amenity Noise Levels (ANL)** – are determined considering all current and future industrial noise within a receiver area; and
- **Project Amenity Noise Level (PANL)** – is the recommended level for a receiver area, specifically focusing on the project being assessed.

Table 2 Amenity Noise Levels

Receiver Type	Noise Amenity Area	Time of day	Recommended amenity noise level dB LAeq(period)
Residential	**Rural**	**Day**	**50**
		Evening	45
		Night	40
	Suburban	Day	55
		Evening	45
		Night	40
	Urban	Day	60
		Evening	50
		Night	45
Hotels, motels, caretakers' quarters, holiday accommodation, permanent resident caravan parks.	See column 4	See column 4	5dB above the recommended amenity noise level for a residence for the relevant noise amenity area and time of day
Passive Recreation	All	When in use	50
Active Recreation	All	When in use	55
Commercial premises	All	When in use	65
Industrial	All	When in use	70

Notes: The recommended amenity noise levels refer only to noise from industrial noise sources. However, they refer to noise from all such sources at the receiver location, and not only noise due to a specific project under consideration. The levels represent outdoor levels except where otherwise stated.

Types of receivers are defined as rural residential; suburban residential; urban residential; industrial interface; commercial; industrial – see Table 2.3 and Section 2.7 of the NPI.

Note 1: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

Additionally, Section 2.4 of the NPI states: "to ensure that industrial noise levels (existing plus new) remain within the recommended amenity noise levels for an area, a project amenity noise level applies for each new source of industrial noise as follows":

PANL for new industrial developments = recommended **ANL** minus 5dBA.

However, the NPI states "where cumulative industrial noise is not a necessary consideration because no other industries are present in the area, or likely to be introduced into the area in the future. In such cases the relevant amenity noise level is assigned as the project amenity noise level for the development".

Therefore, adoption of a PANL of 50dB $LA_{eq(period)}$ or 53dB $LA_{eq(15min)}$ for residential receivers would be considered appropriate in protecting amenity for receivers in proximity to the track. The derivation of the PANL is presented in **Table 3.**

Table 3 Amenity Noise Levels and Project Amenity Noise Levels

Receiver Type	Noise Amenity Area	Assessment Period[1]	NPI Recommended ANL dB $LA_{eq(period)}$	ANL dB $LA_{eq(period)}$[2]	PANL dB $LA_{eq(15min)}$[3]
Residential	Rural	Day	50	50	53

Note 1: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

Note 2: Project Amenity Noise Level equals the Amenity Noise Level as there is no other industry in the area.

Note 3: Includes a +3dB adjustment to the amenity period level to convert to a 15-minute assessment period as per Section 2.2 of the NPI.

4.2 Intrusiveness Noise Levels (INL)

The INL ($LA_{eq(15min)}$) is the RBL + 5dB and seeks to limit the degree of change a new noise source introduces to an existing environment. Hence, when assessing intrusiveness, background noise levels need to be measured. Where background levels are not measured the minimum applicable RBL of 35dBA for the daytime period can be adopted. This results in an INL of 40dB $LA_{eq(15min)}$.

5 Modelling Methodology

A computer model was developed to quantify noise emissions from use of the track to neighbouring receivers using DGMR (iNoise, Version 2023) noise modelling software. iNoise is an intuitive and quality assured software for industrial noise calculations in the environment. 3D noise modelling is considered industry best practice for assessing noise emissions from projects.

The model incorporated a three-dimensional digital terrain map giving all relevant topographic information used in the modelling process. Additionally, the model uses relevant noise source data, ground type, attenuation from barrier or buildings and atmospheric information to predict noise levels at the nearest potentially affected receivers. Where relevant, modifying factors in accordance with Fact Sheet C of the NPI have been applied to calculations.

The model calculation method used to predict noise levels was in accordance with ISO 9613:1 and ISO 9613:2 including corrections for meteorological conditions using CONCAWE[3]. The ISO 9613 standards are the most used noise prediction method worldwide. Many countries refer to ISO 9613 in their noise legislation. However, the ISO 9613 standard does not contain guidelines for quality assured software implementation, which leads to differences between applications in calculated results. In 2015 this changed with the release of ISO/TR 17534-3. This quality standard gives clear recommendations for interpreting the ISO 9613 method. iNoise fully supports these recommendations. The models and results for the 19 test cases are included in the software.

5.1 Source Emission Values

MAC completed measurements on 21 November 2022 of three motorcycles circulating on the track to calculate motorcycle noise emissions, to facilitate the calibration of the noise model. **Table 4** presents the measured sound pressure level (SPL) at locations in proximity to the track, the estimated contribution from the project and the calculated Sound Power Level (Lw) of the source from each measurement.

[3] Report no. 4/18, "the propagation of noise from petroleum and petrochemical complexes to neighbouring communities", Prepared by C.J. Manning, M.Sc., M.I.O.A. Acoustic Technology Limited (Ref.AT 931), CONCAWE, Den Haag May 1981

Table 4 Operator Attended Measurements				
Location	Overall[1] SPL dB LAeq,t	Project Contribution SPL dB LAeq,t	Distance from Centre of Track	Sound Power Level[2] dB LAeq(15min)
M25 (North East)	64.0	64	110m	112.8
M28 (South)	64.4	64	80m	110.5
M27	47.0	45	350m	--
Average (logarithmic)	--		--	111.3

Note 1: SPL dBA re 20 x 10^{-6} Pa.

Note 2: SWL dBA re 10^{-12} Watts.

Note 3: Meteorological conditions – westerly wind from 2m/s to 3ms with gusts above 4m/s; 19 degrees C.

5.2 Model Calibration

In addition to the two (2) measurements in **Table 4**, an additional operator attended measurement (M27) was completed further to the east of the project to provide an additional calibration point at a further distance. Results of the measured project contributions and calculated contribution are presented in **Table 5**. The model calibration is within 0.6dB and is considered acceptable.

Table 5 Model Calibration			
Location	Measured/Project Contribution SPL dB LAeq,t	Calculated Project Contribution SPL dB LAeq,t	Difference
M25 (North East)	62	61.8	0.2
M28 (South)	62	62.6	0.6
M27 (East)	45	44.8	0.2

6 Noise Assessment Results

6.1 Operational Noise Assessment

Calculated noise levels from the project using the calibrated noise model for a 1 hour period (dB $LA_{eq(1hr)}$) and the 11 hour daytime period (dB $LA_{eq(Day)}$) at surrounding residential receivers are presented in **Table 6** and as noise contours in **Figure 2** and **Figure 3**.

Table 6 Predicted Noise Level v Amenity Noise Level $LA_{eq(Day)}$[1]

Receiver ID	Predicted Noise Level dB LAeq(Day)[1]		PANL dB LAeq(Day)
	dB LAeq(1hr)	dB LAeq(Day)[1]	
R01	41	33	50
R02	37	30	50
R03	36	<30	50
R04	38	30	50
R05	42	35	50
R06	38	31	50
R07	36	<30	50
R08	39	32	50
R09	41	34	50
R10	40	33	50
R11	36	<30	50
R12	43	35	50
R13	46	39	50
R14	46	39	50
R15	41	34	50
R16	39	32	50
R17	34	<30	50
R18	34	<30	50
R19	31	<30	50

Note 1: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

Predicted noise levels from typical use of the track (three motorcycles circulating), range up to 46dB $LA_{eq(1hr)}$, are expected to satisfy the daytime Amenity Noise Level of 50dB $LA_{eq(period)}$ at all identified residential receivers.

However, if intrusiveness were to be assessed in accordance with the NPI, adopting the rating minimum background level of 35dBA, resulting in an INL of 40dB $LA_{eq(15min)}$, noise levels from typical use of the track are expected to exceed the INL by:

- up to 1dB at three receivers;
- up to 2dB at one receiver;
- up to 3dB at one receiver; and
- up to 6dB at two receivers.

Exceedances of up to 2dB are usually considered negligible as this does not present a perceptible difference by a receiver.

Exceedances of 3dB or more would be perceptible, however considering that the noise emission is not constant over a whole day, as there are periods where the track is not operating, this would provide respite.

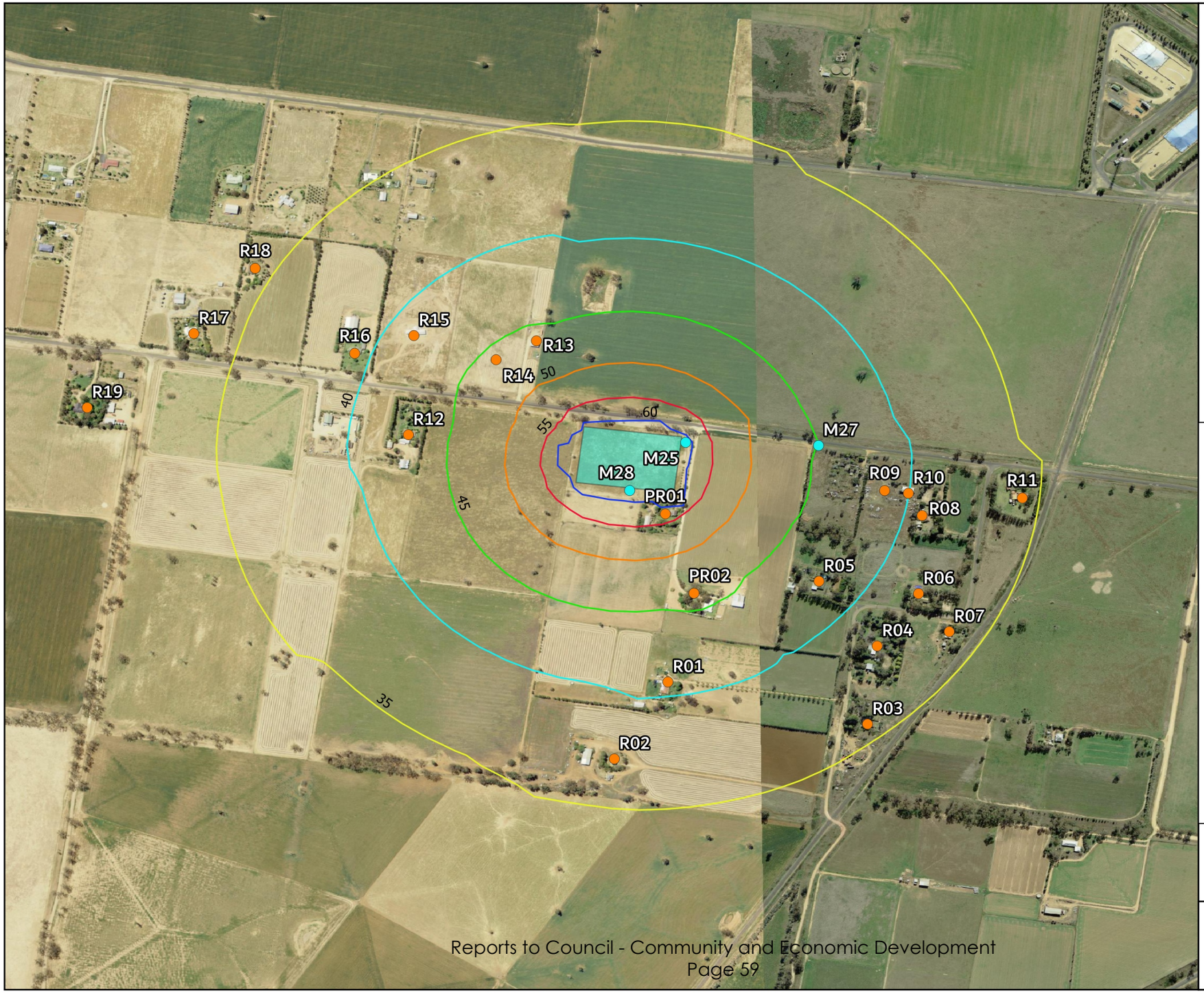


FIGURE 2

Predicted Noise Levels

Typical Operations

MAC211352

Narromine Motocross Track

KEY

- Receivers
- Track
- Measurement Locations

Noise Level dB LAeq(1hr)

- 35
- 40
- 45
- 50
- 55

0 100 200 300 400 m

N

MAC
Muller Acoustic Consulting

FIGURE 3

Predicted Noise Levels

Daytime Period

Typical Operations

MAC211352

Narromine Motocross Track

KEY

- Receivers
- Track
- Measurement Locations

Noise Level dB LAeq(Day)

- 35
- 40
- 45
- 50
- 55

0 100 200 300 400 m

N

MAC Muller Acoustic Consulting

7 Discussion and Conclusion

Muller Acoustic Consulting Pty Ltd (MAC) has completed a Noise Assessment to quantify emissions from the private motocross track (the 'track') at 151 Old Backwater Road, Narromine NSW.

Using direct measurement of the motorcycles proposed to be used on the track, sound power levels were calculated, and a calibrated noise model was developed and noise emissions at the nearest receiver locations were predicted using a three dimensional noise model.

The results of the Noise Assessment show that typical noise emissions would satisfy the recommended amenity noise level over the course of a whole daytime period.

Typical noise emissions would exceed (up to 6dB) the most stringent intrusiveness noise criteria that can be applied to an industrial development which may operate continuously. However, as the project is within private ownership and operates within the restrictions outlined in this report, the application of the most stringent noise criteria may not be applicable as noise levels satisfy the recommended amenity levels over the course of a whole daytime period.

This page has been intentionally left blank

Appendix A – Glossary of Terms

A number of technical terms have been used in this report and are explained in **Table A1**.

Table A1 Glossary of Acoustical Terms

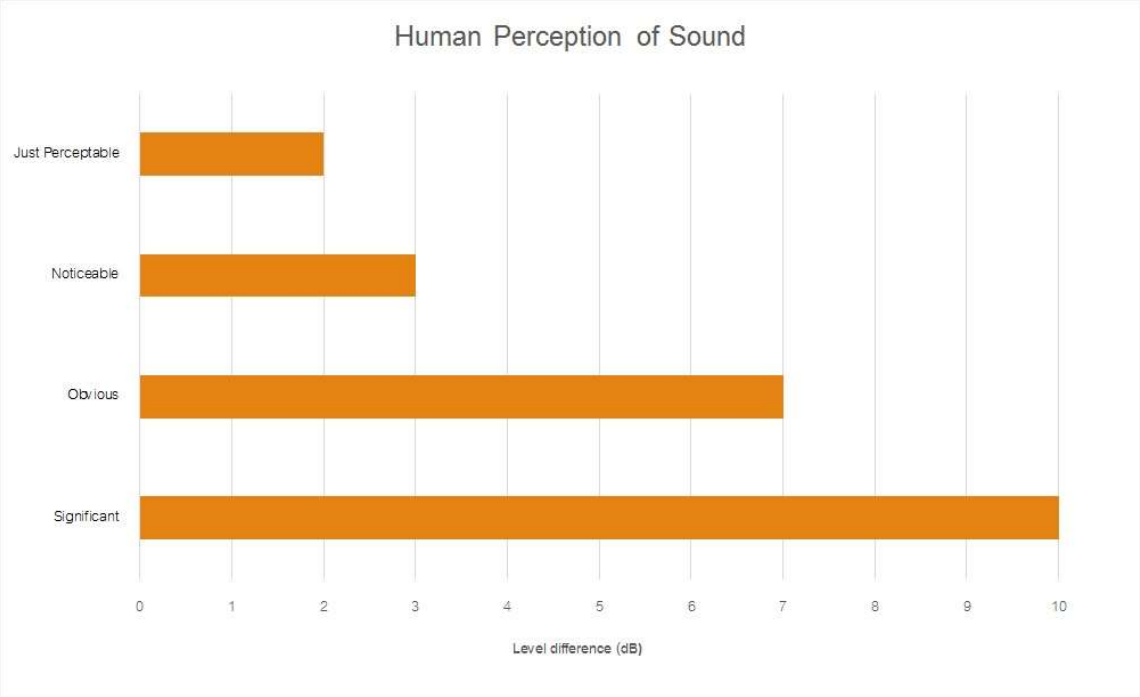
Term	Description
1/3 Octave	Single octave bands divided into three parts
Octave	A division of the frequency range into bands, the upper frequency limit of each band being twice the lower frequency limit.
ABL	Assessment Background Level (ABL) is defined in the NPI as a single figure background level for each assessment period (day, evening and night). It is the tenth percentile of the measured L90 statistical noise levels.
Ambient Noise	The total noise associated with a given environment. Typically, a composite of sounds from all sources located both near and far where no particular sound is dominant.
A Weighting	A standard weighting of the audible frequencies designed to reflect the response of the human ear to sound.
Background Noise	The underlying level of noise present in the ambient noise, excluding the noise source under investigation, when extraneous noise is removed. This is usually represented by the LA90 descriptor
dBA	Noise is measured in units called decibels (dB). There are several scales for describing noise, the most common being the 'A-weighted' scale. This attempts to closely approximate the frequency response of the human ear.
dB(Z), dB(L)	Decibels Z-weighted or decibels Linear (unweighted).
Extraneous Noise	Sound resulting from activities that are not typical of the area.
Hertz (Hz)	The measure of frequency of sound wave oscillations per second - 1 oscillation per second equals 1 hertz.
LA10	A sound level which is exceeded 10% of the time.
LA90	Commonly referred to as the background noise, this is the level exceeded 90% of the time.
LAeq	Represents the average noise energy or equivalent sound pressure level over a given period.
LAmax	The maximum sound pressure level received at the microphone during a measuring interval.
Masking	The phenomenon of one sound interfering with the perception of another sound. For example, the interference of traffic noise with use of a public telephone on a busy street.
RBL	The Rating Background Level (RBL) as defined in the NPI, is an overall single figure representing the background level for each assessment period over the whole monitoring period. The RBL, as defined is the median of ABL values over the whole monitoring period.
Sound power level (Lw or SWL)	This is a measure of the total power radiated by a source in the form of sound and is given by 10.log10 (W/Wo). Where W is the sound power in watts to the reference level of 10^{-12} watts.
Sound pressure level (Lp or SPL)	the level of sound pressure; as measured at a distance by a standard sound level meter. This differs from Lw in that it is the sound level at a receiver position as opposed to the sound 'intensity' of the source.

Table A2 provides a list of common noise sources and their typical sound level.

Table A2 Common Noise Sources and Their Typical Sound Pressure Levels (SPL), dBA

Source	Typical Sound Pressure Level
Threshold of pain	140
Jet engine	130
Hydraulic hammer	120
Chainsaw	110
Industrial workshop	100
Lawn-mower (operator position)	90
Heavy traffic (footpath)	80
Elevated speech	70
Typical conversation	60
Ambient suburban environment	40
Ambient rural environment	30
Bedroom (night with windows closed)	20
Threshold of hearing	0

Figure A1 – Human Perception of Sound



Back to Report

Muller Acoustic Consulting Pty Ltd
PO Box 678, Kotara NSW 2289
ABN: 36 602 225 132
Ph: +61 2 4920 1833
www.mulleracoustic.com

Project No: 212105R

Peer Review of Noise Assessment
Proposed Motocross Track
151 Old Blackwater Road,
Narromine, NSW

Prepared for:

Narromine Shire Council
P.O. Box 115
Narromine NSW 2821

Author:

Ross Hodge
B.Sc.(Hons) M.A.A.S.
Principal / Director

March 2023

CONTENTS

1.0 – INTRODUCTION

Spectrum Acoustics Pty Ltd (Spectrum) has been commissioned by Narromine Shire Council (NSC) to conduct a peer review of the revised Noise Assessment (NA) prepared for the proposed motocross track at 151 Old Blackwater Road, Narromine, NSW.

Broadly the objectives of the review were to;

- Review the methodology, techniques and results of the NA,
- Provide opinions and recommendations as to the adequacy of the NA, and
- Comment on the predicted noise levels any potent adverse impacts of residual noise.

In addition to the above NSC specifically highlighted the following;

- The SEE states “the track will typically only be ridden by up to four children and two adults”. The Noise Assessment was undertaken using 3 motorcycles. Details of how the “typical” usage of 5 motorcycles might impact on the results is not provided. In addition, details of the motorcycles used for the trials and their measured exhaust noise output is not provided.
- The Statement of Environment Effects needs to be reviewed and amended to address implications for surrounding residents (existing and future) of the conclusion of the applicant's amended acoustic report which identify “Typical noise emissions would exceed (up to 6dB(A) over the most stringent intrusiveness noise criteria that can be applied to an industrial development which may operate continuously (page 21). There are a number of places in the SEE where amendment and further narrative is required, because of the changed conclusion of the Noise Assessment.
- In addition, the LEP RU1 land use zone objective "To minimise conflict between land uses within this zone and land uses within adjoining zones" should be addressed in the context of the amended acoustic report, and the Planning Proposal referred below. It is noted that R5 zone also has this LEP zone objective.

Some of the points raised above by NSC are considered applicable to a further revision of MAC2 but are not required to be addressed in this review.

The report has been prepared with reference to the document *"Noise Assessment Motocross Track Old Blackwater Road, Narromine NSW"*, by Muller Acoustic Consulting dated January 2023, report reference is MAC211352-03RP1V1 which will herein be referred to as (MAC2).

That is, this review is of a revised acoustic assessment for the project which has been undertaken by MAC in response to queries arising from a review of a previous assessment for the project (that being MAC211352-01RP1, dated May 2021 (MAC1)).

2.0 – REVIEW OF MAC

2.1 Setting of Noise Goals

As per the previous report it is Spectrum's opinion that MAC2 has, again, detailed the incorrect noise criterion for the operation of the project (in Section 4 of MAC2). The previous review of this approach is included here for completeness.

"*MAC applied procedures in the Noise Policy for Industry (NPfI) to determine project noise trigger levels (PNTLs) for the operation of the track.*

Due to the nature of the proposed operations at the site and, in the absence of any specific noise impact procedures relating to motocross tracks, the NPfI is considered to provide the most appropriate procedure for the assessment of the proposal.

The NPfI requires that both Amenity and Intrusiveness criteria be considered in setting PNTLs for a project. This is as detailed in MAC, as shown, below, in extract from that document.

3.1.1 Noise Goals for Planning

The NGLG is underpinned by the NSW Noise Policy for Industry (NPI, 2017). There are two criteria to consider when establishing noise assessment criteria/goals which the NPI defines as Project Noise Trigger Levels (PNTLs). These criteria are:

- the project intrusiveness noise level, which is based on the background noise level plus 5dB and seeks to limit the degree of change a new noise source introduces to an existing environment; and
- the project amenity noise level, is relevant to a specific land use or locality to limit continuing increases in intrusiveness levels. The ambient noise level within an area from all combined industrial sources should remain below the recommended amenity noise levels specified in Table 2.2 (of the NPI).

Section 2.1 of the NPfI details the procedure for setting the PNTL for a project as shown in the flow chart, Figure 1 in extract below. The following note is made in the text before the chart;

"Typically, the intrusiveness level will inform the project noise trigger level in areas with little industry (and/or ambient noise levels), whereas the amenity level will inform the project noise trigger level in areas with higher existing background noise levels."

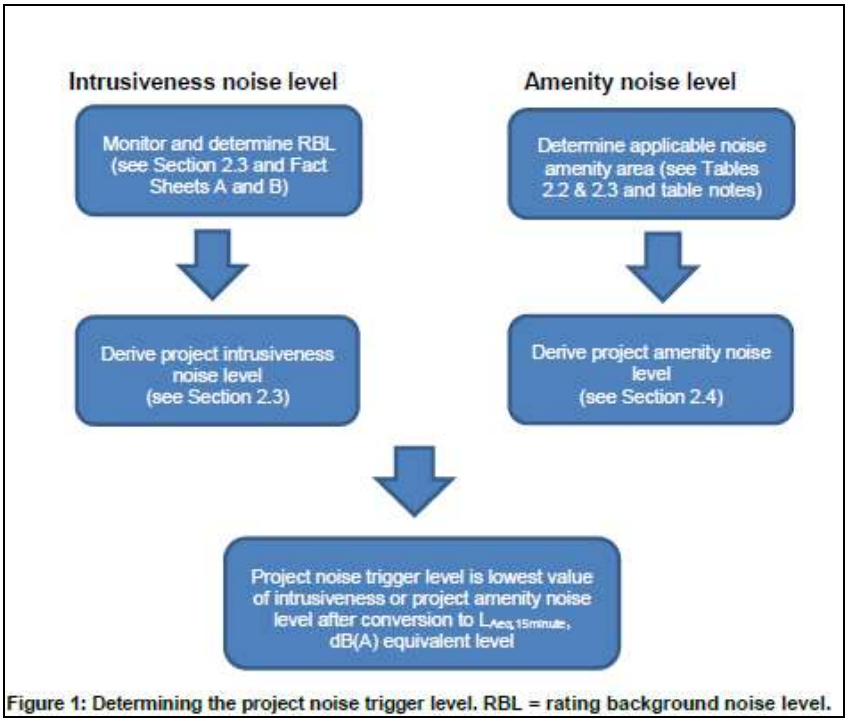


Figure 1: Determining the project noise trigger level. RBL = rating background noise level.

The flow chart shows that the PNTL is the lower of the Intrusiveness or Amenity Criteria for the assessment period (i.e. day, evening or night).

*Table 6 in MAC does show the correct PNTL based on the Intrusiveness Criterion as being **40 dB(A) Leq (15 min)**. MAC, however, then goes on to do the assessment of potential noise impacts against the much less stringent Amenity Criterion.*

It is Spectrum's opinion that this is in error and that all noise emissions from the motocross track should be assessed against the Intrusiveness Criterion.

MAC2 does later reference the "correct" NPfI Intrusiveness criterion (on Page 21) when discussing potential noise impacts, however, it incorrectly considers an Leq (**1 hour**), rather than the applicable PNTL (noise criterion) of 40 dB(A) Leq (**15 min**). This, effectively underestimates the resultant noise exceedances.

MAC2 details that the track may be used during the day time period, between 7am and 6pm, for training and practice purposes.

MAC2 also details that the track may be used for up to four sessions of up to two hours per session, with a maximum cumulative total of six hours usage per week.

This detailed usage is lower than that detailed previously. There is no supplied detail as to how many bikes may be using the track in each session.

It is apparent that the proposed usage will allow the receivers significant periods of respite from the noise.

2.2 Methodology

The approach outlined in MAC was to model noise emissions from the proposed track using DGMR noise modelling software. This approach is consistent with standard procedures for such an assessment.

The critical inputs in any noise model, however, are the level and spectrum of the noise source(s), the location of the sources (height above ground, position relative to barriers etc.), ground type, topography and atmospheric conditions.

MAC2 has calculated a sound power level for the track based on site noise measurements that were made of three motorcycles circulating the track. There is no detail provided on what types of motorbikes were on the track for the measurements.

There is no discussion on the location and number of noise sources modelled, specifically how these relate to the modelled sound power level. That is, was the model based on a single point noise source at 111 dB(A) or was it based on several sources, each present at its relevant location (as a form of noise snapshot) for a stated period of time.

This sound power level is the same as that for the two scenarios that were modelled in the original MAC report (that is 111 dB(A)).

Table 1 shows a summary of the noise modelling results, comparing MAC1 and MAC2 Leq (1hr) noise levels as presented in the two reports.

There is no discussion to explain the differences in the modelled received noise from MAC1 to MAC2 with some of the predicted received levels being 1dB lower in MAC2's model, despite having the same sound power level. This may be due to variations in the noise frequency spectrum for the noise source, but there is no detail provided to allow for any valid comparison.

MAC2 does not present the results of the noise modelling for Leq (15 min) to compare these to the NPfI criterion. The Leq (15 min) noise level shown in Table 1 for MAC2 is, therefore, a direct extrapolation from the Leq (1hr) levels.

Where the MAC2 Leq (15 min) noise level exceeds the NPfI criterion it is shown in bold in the table.

TABLE 1
COMPARISON OF NOISE MODELLING RESULTS

Receiver ID	MAC1 (1 hr)	MAC2 (1hr)	MAC1 (15min)	MAC2[1] (15 min)
R01	41	41	44	**44**
R02	38	37	41	40
R03	36	36	39	39
R04	38	38	41	**41**
R05	43	42	46	**45**
R06	38	38	41	**41**
R07	36	36	39	39
R08	39	39	42	**42**
R09	41	41	44	**44**
R10	40	40	43	**43**
R11	36	36	39	39
R12	44	43	47	**46**
R13	47	46	50	**49**
R14	47	46	50	**49**
R15	42	41	45	**44**
R16	40	39	43	**42**
R17	34	34	37	37
R18	35	34	38	37
R19	32	31	35	34

1 see text re derivation of Leq (15 min) for MAC2

The results in Table 1 show that the predicted Leq (15 min) noise levels may exceed the applicable criterion by between 2 and 9 dB(A) at up to 12 receivers.

As stated previously;

it is unclear from MAC as to the locations of the noise sources, the heights of the sources above ground level and the atmospheric conditions used for the modelling.

Topographical information for the surrounding areas has been obtained from maps of the site, which is considered valid.

The NPfI stipulates that noise modelling must be carried out for prevailing atmospheric conditions. This includes winds up to 3m/s that occur for over 30% of the time from any direction. To determine the

occurrence of prevailing winds a vector analysis of winds should be carried out for the time of operation of the proposed facility (nominally day time).

MAC does not present any results or details of such an analysis, nor is there adequate justification for this. Under such circumstances, in the absence of an analysis of winds, Fact Sheet D of the NPfI allows for "a conservative approach that considers source-to-receiver wind vectors for all receivers."

Source to receiver winds are noise enhancing and, therefore, as the noise levels are predicted to exceed the PNTL at 13 receivers under neutral atmospheric conditions, the addition of such a wind into the noise model would increase the received noise, and the increase could be significant.

Although not stated, it is assumed that the results of the noise modelling are based on the measured noise levels ("calibrated model") with three generic motorbikes on the track. It is also assumed that the sound power level has been modelled as a "representative" location somewhere near the centre of the track. That is, the resultant noise contours approximate to concentric circles.

Changes to the operation of the site that lead to increases in the number of motorbikes using the track at the same time, would, most likely, result in increases in received noise. It is reasonable to assume that increasing the number of motorbikes from three to five could increase the noise levels by a factor of 10xlog 5/3, or plus 2dB(A).

Based on the results presented in Table 1, this would mean that the applicable noise criterion could be exceeded by between 1 and 11 dB(A) Leq (15 min) at up to 16 receivers.

The potential impacts of residual noise impacts such as this is discussed in Section 4 of the NPfI and the relevant sections of Table 4.1 of the NPfI are shown below:

Table 4.1: Significance of residual noise impacts.

If the predicted noise level minus the project noise trigger level is:	And the total cumulative industrial noise level is:	Then the significance of residual noise level is:
≤ 2 dB(A)	Not applicable	Negligible
≥ 3 but ≤ 5 dB(A)	< recommended amenity noise level or > recommended amenity noise level, but the increase in total cumulative industrial noise level resulting from the development is less than or equal to 1dB	Marginal
≥ 3 but ≤ 5 dB(A)	> recommended amenity noise level and the increase in total cumulative industrial noise level resulting from the development is more than 1 dB	Moderate
> 5 dB(A)	≤ recommended amenity noise level	Moderate

Interpreting this table on the basis of the results presented in Table 1 there are Receivers;

- R04, R06, R08 and R16 where the significance of the residual noise (as modelled) would be considered “Negligible”,
- R01, R05, R09, R10, and R15 where the significance of the residual noise (as modelled) would be considered “Marginal”, and
- R12, R13, and R14 where the significance of the residual noise (as modelled) would be considered “Moderate”.

The NPfI details examples of noise mitigation at a residence that **may** be required by planning authorities to mitigate residual noise impacts as shown, below, in the relevant sections from Table 4.2.

Table 4.2: Examples of receiver-based treatments to mitigate residual noise impacts.

Significance of residual noise level	Example of potential treatment
Negligible	The exceedances would not be discernible by the average listener and therefore would not warrant receiver-based treatments or controls.
Marginal	Provide mechanical ventilation/comfort condition systems to enable windows to be closed without compromising internal air quality/amenity.
Moderate	As for ‘marginal’, but also upgraded façade elements, such as windows, doors or roof insulation, to further increase the ability of the building façade to reduce noise levels.

On the basis of the information presented in MAC2 it is not possible to verify the results of the modelling. In particular the number, location and height of noise source(s) in relation to the topography of the track are not identified and there is no consideration of winds.

3.0 – DISCUSSION

The results presented in each of the MAC reports show that the applicable Leq (15 min) noise criterion will be exceeded during those times when the motocross track is in use.

Spectrum agrees with the comment in MAC 2 that the proposed usage of the track will be for relatively brief periods and only for several times throughout seven days. It is also agreed that this will afford a degree of respite for the receivers in the vicinity of the track.

It is considered that the discussion on this should be expanded to detail any benefits of the respite periods and any potential lessening of the adverse impacts on acoustic amenity.

MAC2 refers to various noise criteria but doesn't provide any justification as their applicability. It is Spectrum's opinion that there would need to be a valid justification of why the Leq (1hr) criterion was adopted for MAC2. Similarly, there would have to be a valid justification provided as to why the day time Amenity Criterion should be considered applicable.

The NPfI details that any discussion of the residual effects of noise that exceeds the relevant criterion should include discussion on the reasonable and feasible application of noise control at the noise source and in the propagation pathway. This has not been provided in MAC2.

4.0 – SUMMARY AND CONCLUSION

In summary, it is the opinion of Spectrum that MAC2 has arrived at the same point as MAC1 as noted previously

MAC2 has used the wrong noise criterion to determine potential noise impacts and that this has understated the residual noise impacts at many residential receivers.

Spectrum also considers that there are other points in relation to the assessment of potential noise impacts that require either clarification or additional calculation/modelling. These relate to;

- *The number of noise sources used in the modelling, the sound power level for each noise source and the location/height used for each noise source relative to the topography of the track at that location,*

- *The methodology used for the determination of the relative sound power level. This includes consideration of the speed the motorbikes are moving any variations in noise level due to location of the noise source on the track (e.g. on straight sections, corners or jumps),*

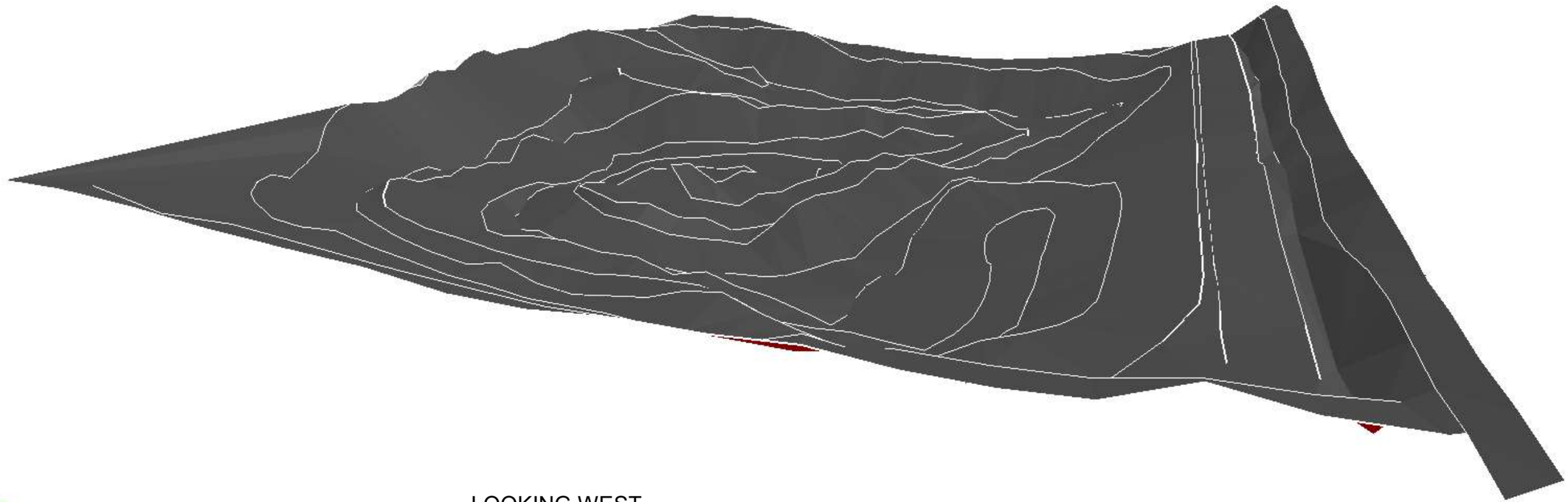
- *A requirement to assess the effect of winds in the modelling or justify why this is not necessary,*

- *An appraisal of possible noise controls or noise management techniques or options that may be employed to minimise the potential noise impacts.*

In conclusion, this review has shown that MAC assessed predicted received noise levels against the incorrect noise criterion and, therefore, failed to identify the potential residual noise impacts that would be considered negligible to moderate.

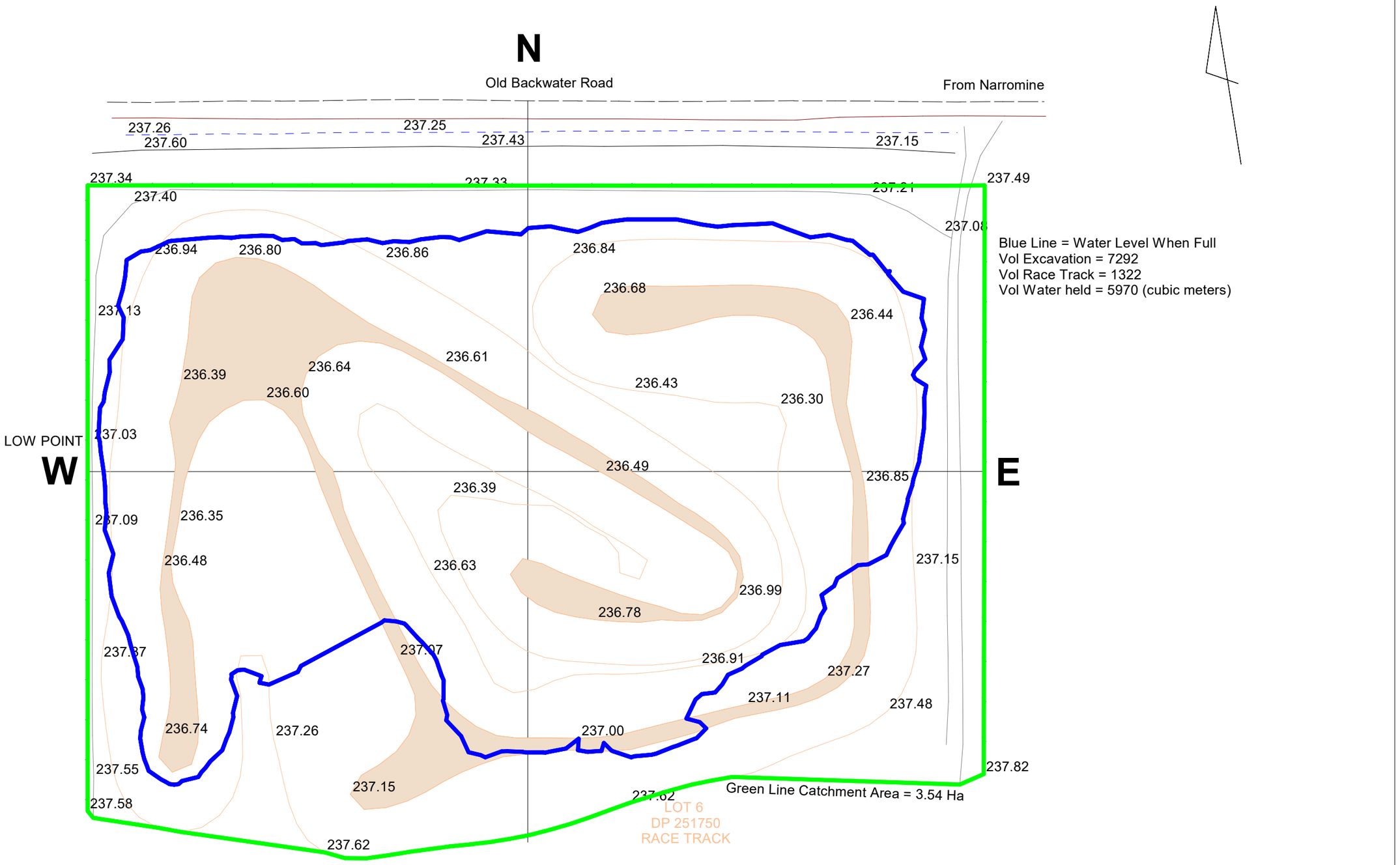
There is insufficient information provided in MAC to afford a valid evaluation of the accuracy of the noise modelling results that were presented.

Back to Report



LOOKING WEST
Note: Shows excavated areas only. Area of race track omited.

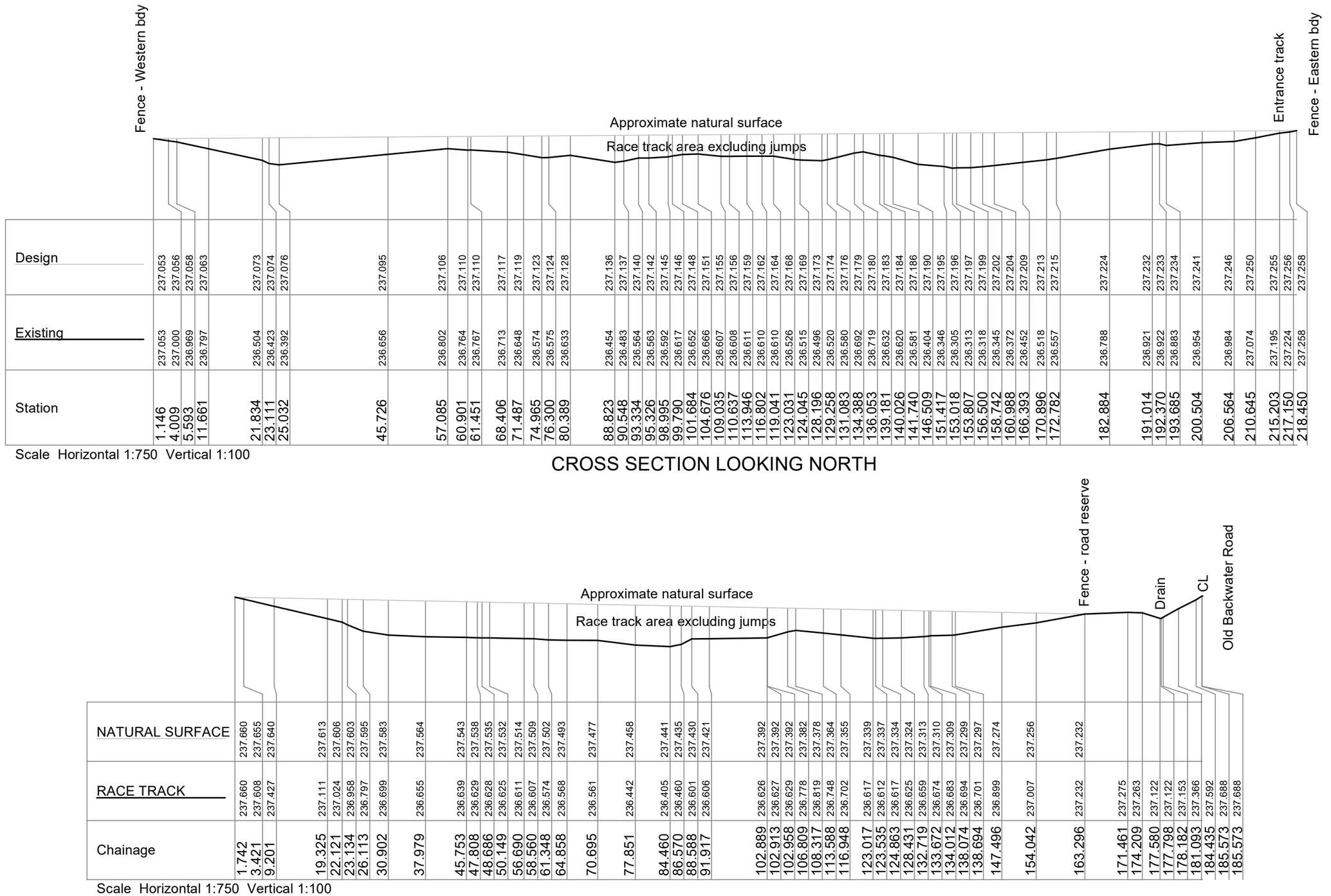
ISSUE STATUS	COORD SYSTEM	SURVEY	DESIGN	**DUNCAN PRIESTLEY CIVIL ENGINEERING**	DRAWING	Total Sheets: 4
	MGA Zone 55	DUNCAN PRIESTLEY CIVIL ENGINEERING	DUNCAN PRIESTLEY CIVIL ENGINEERING	**LUKE HARDING**	L HARDING RACE TRACK V1 - MP	
15/05/2021	HEIGHT DATUM			**RACE TRACK**	PLAN NUMBER	Sheet Number: 1
	AHD	SURVEYED: D Priestley	DESIGNED: D Priestley	**L0T 6 OLD ACKWATER ROAD NARROMINE**		



PLAN.

Note: No levels were taken on top of jumps and race track area.
Botom outline of this area is shown in brown shading.

ISSUE STATUS	COORD SYSTEM	SURVEY	DESIGN	DUNCAN PRIESTLEY CIVIL ENGINEERING	DRAWING	Total Sheets: 4
	MGA Zone 55	DUNCAN PRIESTLEY CIVIL ENGINEERING	DUNCAN PRIESTLEY CIVIL ENGINEERING	LUKE HARDING	L HARDING RACE TRACK V1 - MP	
15/05/2021	HEIGHT DATUM			**RACE TRACK**	PLAN NUMBER	Sheet Number: 2
	AHD	SURVEYED: D Priestley	DESIGNED: D Priestley	**L0T 6 OLD ACKWATER ROAD NARROMINE**		



Station	Existing	Design
1.146	237.053	237.053
4.009	237.000	237.056
5.593	236.969	237.058
11.661	236.797	237.063
21.834	236.504	237.073
23.111	236.423	237.074
25.032	236.392	237.076
45.726	236.656	237.095
57.085	236.802	237.106
60.901	236.764	237.110
61.451	236.767	237.110
68.406	236.713	237.117
71.487	236.648	237.119
74.965	236.574	237.123
76.300	236.575	237.124
80.389	236.633	237.128
88.823	236.454	237.136
90.548	236.483	237.137
93.334	236.564	237.140
95.326	236.563	237.142
98.995	236.592	237.145
99.790	236.617	237.146
101.684	236.652	237.148
104.676	236.666	237.151
109.035	236.607	237.155
110.637	236.608	237.156
113.946	236.611	237.159
116.802	236.610	237.162
119.041	236.610	237.164
123.031	236.526	237.168
124.045	236.515	237.169
128.196	236.496	237.173
129.258	236.520	237.174
131.083	236.580	237.176
134.388	236.692	237.179
136.053	236.719	237.180
139.181	236.632	237.183
140.026	236.620	237.184
141.740	236.581	237.186
146.509	236.404	237.190
151.417	236.346	237.195
153.018	236.305	237.196
153.807	236.313	237.197
156.500	236.318	237.199
158.742	236.345	237.202
160.988	236.372	237.204
166.393	236.452	237.209
170.896	236.518	237.213
172.782	236.557	237.215
182.884	236.788	237.224
191.014	236.921	237.232
192.370	236.922	237.233
193.685	236.883	237.234
200.504	236.954	237.241
206.564	236.984	237.246
210.645	237.074	237.250
215.203	237.195	237.255
217.150	237.224	237.256
218.450	237.258	237.258

Scale Horizontal 1:750 Vertical 1:100

CROSS SECTION LOOKING NORTH

Chainage	RACE TRACK	NATURAL SURFACE
1.742	237.660	237.660
3.421	237.608	237.655
9.201	237.427	237.640
19.325	237.111	237.613
22.121	237.024	237.606
23.134	236.958	237.603
26.113	236.797	237.595
30.902	236.699	237.583
37.979	236.655	237.564
45.753	236.639	237.543
47.808	236.629	237.538
48.686	236.628	237.535
50.149	236.625	237.532
56.690	236.611	237.514
58.560	236.607	237.509
61.348	236.574	237.502
64.858	236.568	237.493
70.695	236.561	237.477
77.851	236.442	237.458
84.460	236.405	237.441
86.570	236.460	237.435
88.588	236.601	237.430
91.917	236.606	237.421
102.889	236.626	237.392
102.913	236.627	237.392
102.958	236.629	237.392
106.809	236.778	237.382
108.317	236.819	237.378
113.588	236.748	237.364
116.948	236.702	237.355
123.017	236.617	237.339
123.535	236.612	237.337
124.863	236.617	237.334
128.431	236.625	237.324
132.719	236.659	237.313
133.672	236.674	237.310
134.012	236.683	237.309
138.074	236.694	237.299
138.694	236.701	237.297
147.496	236.899	237.274
154.042	237.007	237.256
163.296	237.232	237.232
171.461	237.275	
174.209	237.263	
177.580	237.122	
177.798	237.122	
178.182	237.153	
181.093	237.366	
184.435	237.592	
185.573	237.688	
185.573	237.688	

Scale Horizontal 1:750 Vertical 1:100

CROSS SECTION LOOKING WEST

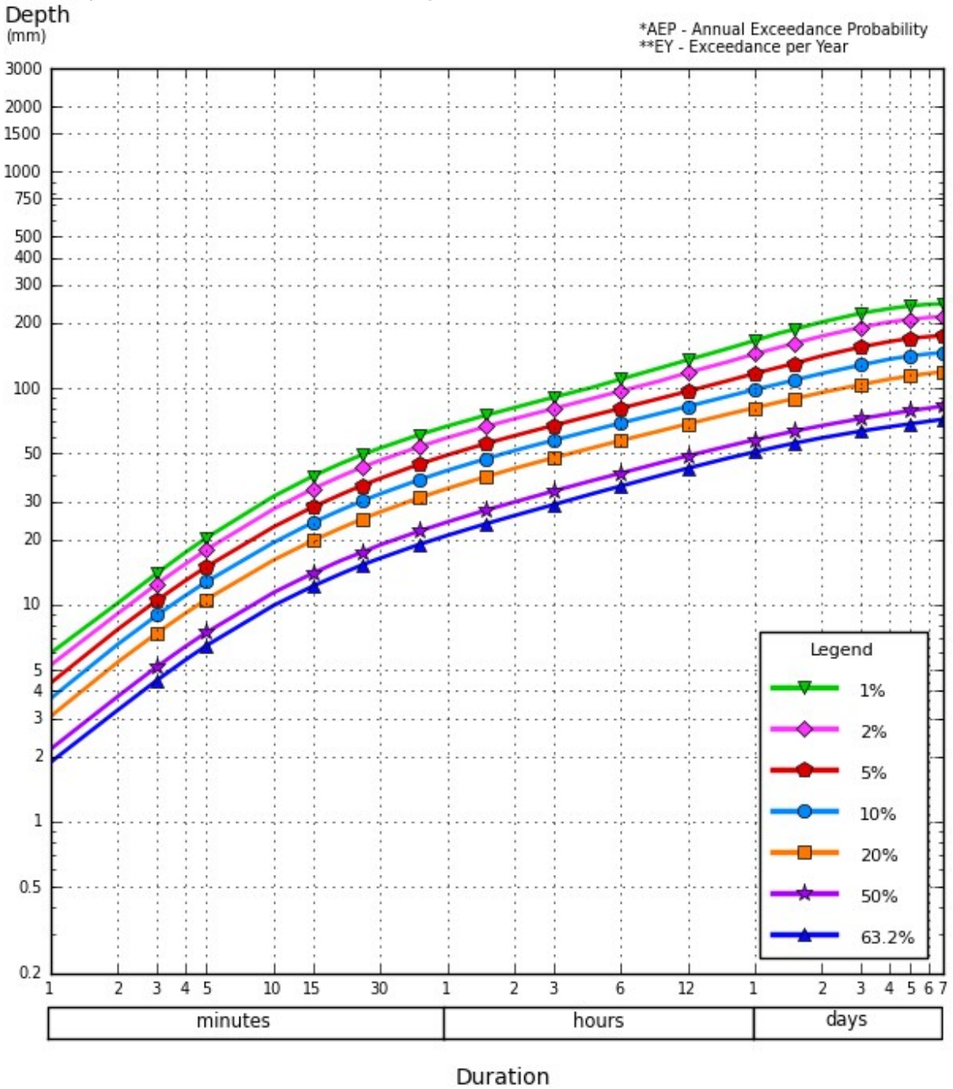
ISSUE STATUS	COORD SYSTEM	SURVEY	DESIGN	DUNCAN PRIESTLEY CIVIL ENGINEERING	DRAWING	Total Sheets: 4
	MGA Zone 55	DUNCAN PRIESTLEY CIVIL ENGINEERING	DUNCAN PRIESTLEY CIVIL ENGINEERING	LUKE HARDING	L HARDING RACE TRACK V1 - MP	
15/05/2021	HEIGHT DATUM			RACE TRACK	PLAN NUMBER	Sheet Number: 3
	AHD	SURVEYED: D Priestley	DESIGNED: D Priestley	L0T 6 OLD ACKWATER ROAD NARROMINE		

Nearest grid cell Latitude: 32.0375 (S) Longitude: 147.9625 (E)

IFD Design Rainfall Depth (mm)

Issued: 15 May 2021

Rainfall depth in millimetres for Durations, Exceedance per Year (EY), and Annual Exceedance Probabilities (AEP).



Hydrology.
These calculations assume the following:
1. The catchment area is limited to:
   The north by Old Backwater Road and its drain.
   To the east by the owners and his neighbours access track.
   To the south and west by the fall of the land.
2. 5% AEP
3. 24 HOUR
4. 100% RUNOFF
5. Survey dosent include the race track jumps but a reasonable alowance has been made for this volume.
6. Survey only covers area shown.

CATCHMENT	3.54ha
DEPTH	117mm
VOLUME WATER	4.14megs
VOLUME RACE TRACK	5.97megs

Conclusion: Provided the catchment area assumed above is correct the rainfal event wouldn't fill the dam. If the catchment area or the rainfall increases and causes the race track dam to overtop then based on the survey information available it would discharge at the low point on the Western fence shown on the plan in the same way it would have prior to the construction of the race track.

ISSUE STATUS	COORD SYSTEM	SURVEY	DESIGN	**DUNCAN PRIESTLEY CIVIL ENGINEERING**	DRAWING	Total Sheets: 4
	MGA Zone 55	DUNCAN PRIESTLEY CIVIL ENGINEERING	DUNCAN PRIESTLEY CIVIL ENGINEERING	**LUKE HARDING**	L HARDING RACE TRACK V1 - MP	
15/05/2021	HEIGHT DATUM			**RACE TRACK**	PLAN NUMBER	Sheet Number: 4
	AHD	SURVEYED: D Priestley	DESIGNED: D Priestley	**L0T 6 OLD ACKWATER ROAD NARROMINE**		