755 WARRAH RIDGE ROAD

NOISE AND VIBRATION IMPACT ASSESSMENT

REPORT NO. 17343
VERSION 1.0

MARCH 2026

PREPARED FOR

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1. MAAS = Member, Australian Acoustical Society.

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GLOSSARY OF ACOUSTIC TERMS

Most environments are affected by environmental noise which continuously varies. To describe the overall noise environment, a number of noise descriptors have been developed and these involve statistical and other analysis of the varying noise over sampling periods, typically taken as 15 minutes. The most common of these noise descriptors are defined below.

L_{Amax} The maximum noise level over a sample period is the maximum level, measured on fast response, during the sample period.

L_{A1} The L_{A1} level is the noise level which is exceeded for 1% of the sample period. During the sample period, the noise level is below the L_{A1} level for 99% of the time.

L_{A10} The L_{A10} level is the noise level which is exceeded for 10% of the sample period. During the sample period, the noise level is below the L_{A10} level for 90% of the time.

L_{A90} The L_{A90} level is the noise level which is exceeded for 90% of the sample period. During the sample period, the noise level is below the L_{A90} level for 10% of the time. This measure is commonly referred to as the background noise level.

L_{Aeq} The equivalent continuous sound level (L_{Aeq}) is the energy average of the varying noise over the sample period and is equivalent to the level of a constant noise which contains the same energy as the varying noise environment. This descriptor is a common measure of environmental noise.

ABL The Assessment Background Level is the single figure background level representing each assessment period (daytime, evening and night time) for each day.

RBL The Rating Background Level for each period is the median value of the ABL values for the period over all of the days measured. There is therefore an RBL value for each period – daytime, evening and night time.

1 INTRODUCTION

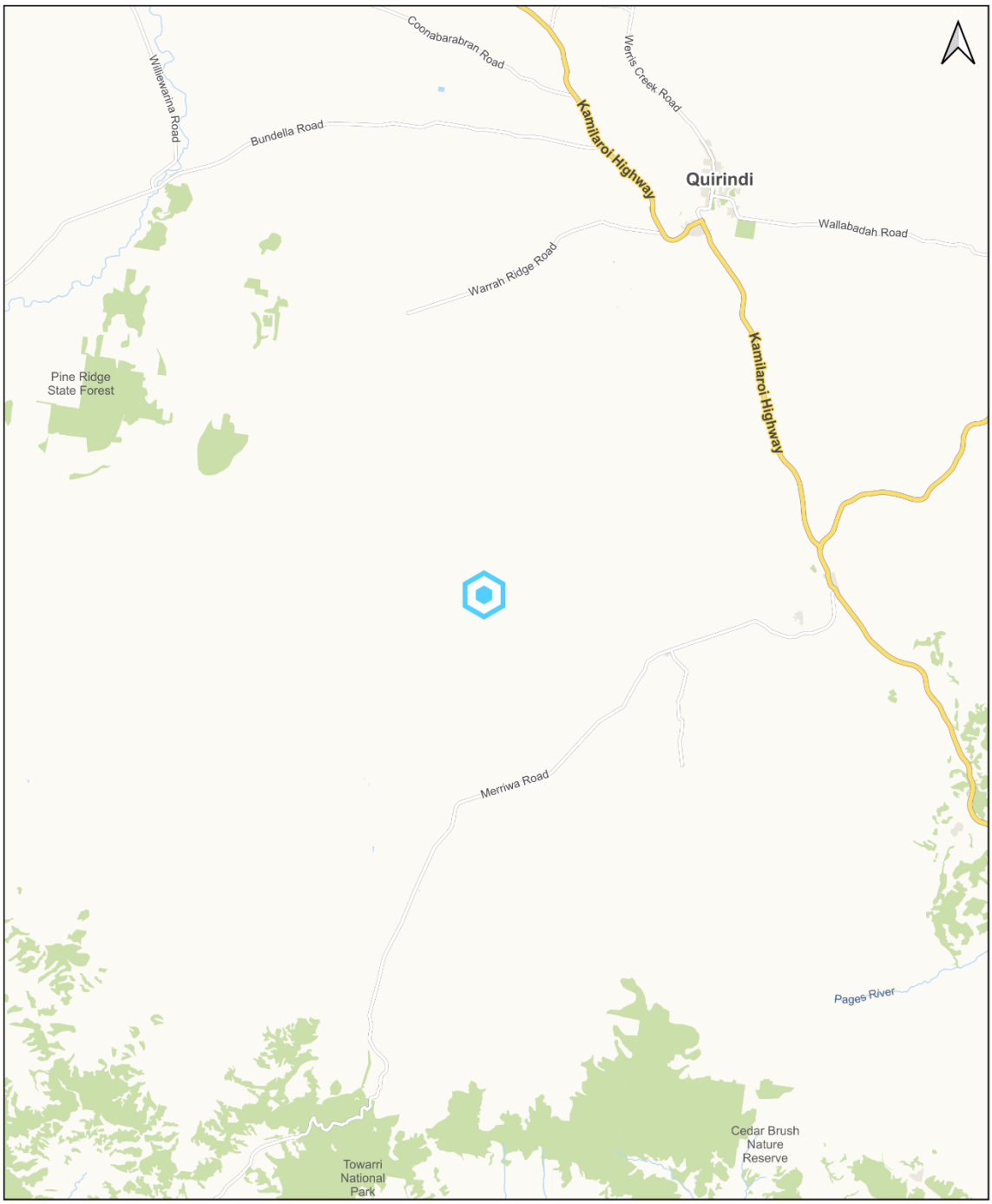
SoundIN Pty Ltd (SoundIN) has been engaged by Agright Griffith Pty Ltd (Agright) to undertake a noise and vibration impact assessment for a proposed poultry (broiler) farm (the Proposal) on land at 755 Warrah Ridge Road, Warrah Ridge (the Site). The locality of the Proposal is shown in **Figure 1-1**.

This report presents an assessment of potential noise and vibration impacts associated with the construction and operation of the Proposal at nearby sensitive receivers. The assessment has been conducted in general accordance with the following NSW Government guidelines and policies:

- Interim Construction Noise Guideline (DECC, 2009)
- Noise Policy for Industry (EPA, 2017)
- NSW Road Noise Policy (DECCW, 2011)

No significant sources of vibration are likely to be associated with the construction or operation of the proposal. Accordingly, a detailed assessment of vibration impacts has not been conducted.

Figure 1-1 Project Locality



Note: Locations of features are indicative only and are shown solely to demonstrate features pertinent to the noise assessment.

2 THE PROPOSAL

2.1 The Site

The proposed poultry farm is located on land at 755 Warrah Ridge Road, Warrah Ridge NSW. The Site has an area of approximately 445 ha and is situated approximately 70 km southwest of Tamworth, NSW. The subject landholding consists of an individual lot. Access to the Site is achieved via an internal vehicular access road from Warrah Ridge Road.

The Site location is shown in **Figure 2-1**.

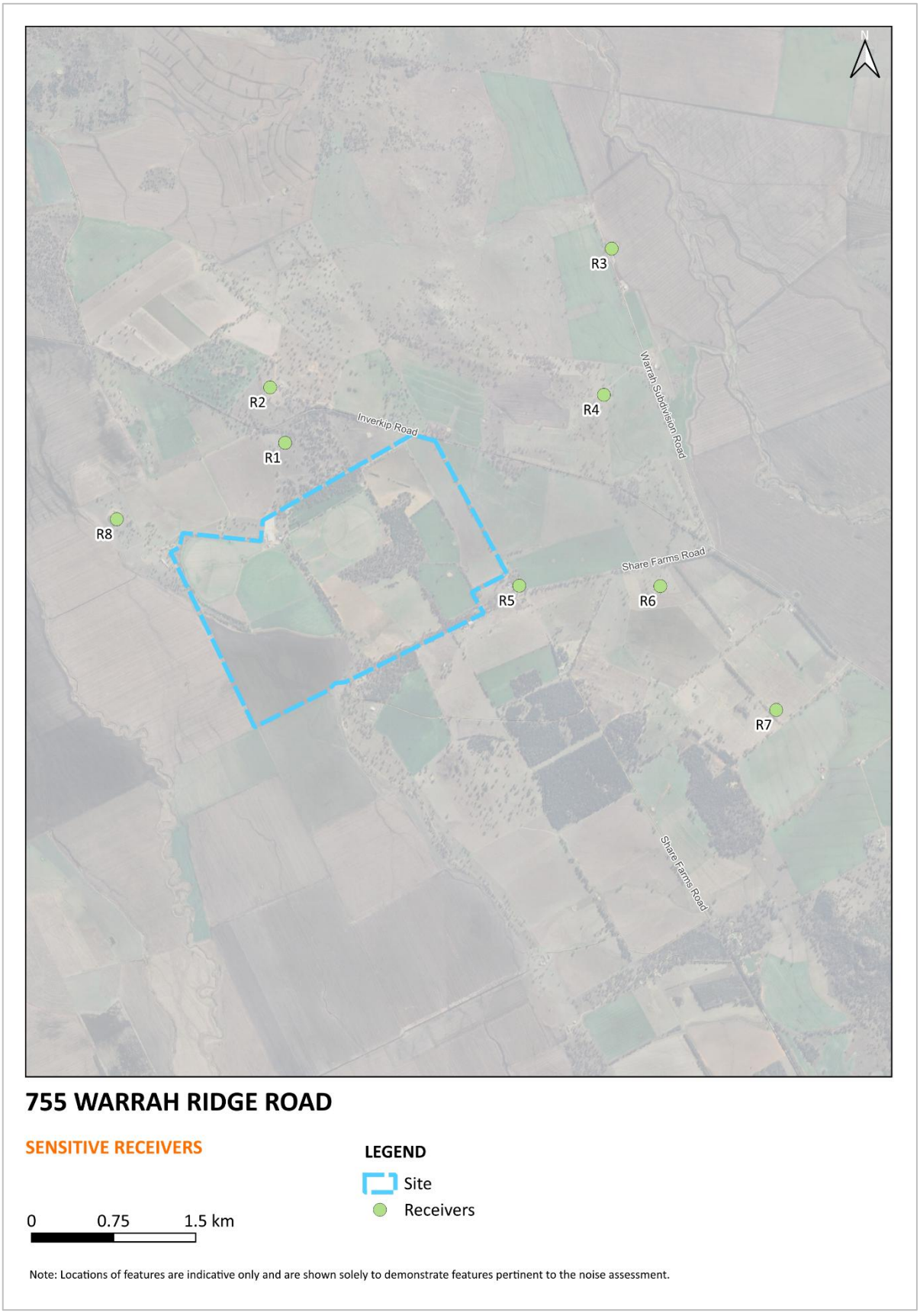
2.2 Surrounding Land Use and Sensitive Receivers

The land use surrounding the Site is rural. The nearest and most potentially affected sensitive receivers are several isolated rural dwellings. Several receivers have been identified for assessment purposes, as identified in **Table 2-1** and shown in **Figure 2-1**.

Table 2-1 Sensitive Receivers

Receiver ID	Lot / DP
R1	Lot 1 / DP1033077
R2	Lot 1 / DP1014571
R3	Lot 111 / DP552470
R4	Lot 431 / DP1202547
R5	Lot 432 / DP1202547
R6	Lot 51 / DP814566
R7	Lot 522 / DP1161270
R8	Lot 12 / DP1033077

Figure 2-1 Proposal Site and Sensitive Receivers



2.3 Proposal Description

2.3.1 Development Overview

Agright is seeking development consent under Part 4 of the *Environment Planning and Assessment Act 1979* to develop a poultry broiler farm. The farm will be comprised of fourteen (14) poultry sheds where free range meat chicken birds (broilers) will be grown for human consumption. Each shed will accommodate a maximum of 57,900 birds giving the farm a maximum capacity of 810,600 birds. Production of broilers occurs in cycles with each production cycle completed over 8-10 weeks. As such, there is an average of 6 production cycles each year.

The proposed 172 m x 18.7 m sheds (3,216.4 m^2) will be constructed in two rows running north-south across the site (refer to **Figure 2-2**). The poultry sheds will be fitted with purpose-built infrastructure associated with poultry production including fans, heaters, water and feed lines and lighting. The proposed free range areas are located adjoining and between the sheds.

The proposed development will also include grain storage silos, staff amenities, access roads, gas storage infrastructure, farm workshop, water pipes, pump shed and water storage tanks along with two new managers houses on site. Other ancillary, supporting infrastructure will include a solar farm and an associated battery energy storage system for electricity production and a stormwater retention dam.

Figure 2-2 Proposed Site Plan

2.3.2 Proposed Operations

Production of broilers occurs in cycles with each production cycle completed over 8 – 10 weeks. As such, there is an average of 6 production cycles. The production cycle generally follows the following steps:

- Placement of day-old chicks within the sheds.
- Growing of the birds over a 6 – 8 week period.
- Staggered collection of live birds and transport to abattoir for processing.
- Clean out of sheds and set up for new batch.

The farm will be overseen by 2 on-site managers and 4 full time staff. Contract staff are also used to assist with placement of day-old chicks, clean out and set up the sheds for at the end of each cycle.

2.3.3 Traffic Generation

Heavy vehicle trips will generally be spread over a 24-hour period and will involve deliveries of bedding material, day-old chicks, poultry feed, and gas to and from the site as well as the collection and transfer of live birds to the processing plant at Tamworth.

Heavy vehicles access the site will include a mix of A-Doubles, B-Doubles, Semi-trailer and rigid trucks. Based on similar sized farms, it is expected that day to day operations at the site will generate an average of approximately 20 heavy vehicles per day (10 incoming / 10 outgoing) however some peak periods will occur associated with bird collections, shed clean out and set up at the end of each cycle.

2.3.4 Construction Hours

The works would be limited to standard construction hours, as follows:

- 7:00am – 6:00pm Monday to Friday
- 8:00am – 1:00pm Saturday
- No work on Sundays or Public Holidays.

3 CONSTRUCTION NOISE ASSESSMENT

3.1 Construction Noise Management Levels

The *Interim Construction Noise Guideline* (ICNG) (DECC, 2009) recommends noise management levels (NML) to reduce the likelihood of noise impacts arising from construction activities. The ICNG NML for residential receivers are presented in **Table 3-1**.

Table 3-1 Construction NML – Residential Receivers

Time of day	Management level – $L_{Aeq,15min}$ (dBA)	How to apply
Recommended standard hours: Monday to Friday 7am to 6pm Saturday 8am to 1pm No work on Sundays or Public Holidays	Noise affected RBL + 10dBA	The noise affected level represents the point above which there may be some community reaction to noise. Where the predicted or measured $L_{Aeq,15min}$ is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to minimise noise. The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.
	Highly noise affected 75dBA	The highly noise affected level represents the point above which there may be strong community reaction to noise. Where noise is above this level, the proponent should consider very carefully if there is any other feasible and reasonable way to reduce noise to below this level. If no quieter work method is feasible and reasonable, and the works proceed, the proponent should communicate with the impacted residents by clearly explaining the duration and noise level of the works, and by describing any respite periods that will be provided.
Outside recommended standard hours	Noise affected RBL + 5 dBA	A strong justification would typically be required for works outside the recommended standard hours. The proponent should apply all feasible and reasonable work practices to meet the noise affected level. Where all feasible and reasonable practices have been applied and noise is more than 5dBA above the noise affected level, the proponent should negotiate with the community. For guidance on negotiating agreements see *ICNG* section 7.2.2.

Noise monitoring has not been undertaken for the purpose of this assessment. Instead, a conservative approach has been taken whereby the minimum daytime RBL value of 35 dBA, as recommended in the *Noise Policy for Industry* (NPfI), has been adopted.

Project-specific construction NML for the most potentially affected receivers near the Site are presented in **Table 3-2**.

Table 3-2 Project-specific Construction NML

Receiver	Acceptable $L_{Aeq,15min}$ noise level (standard daytime hours) (dBA)	Highly affected noise level (dBA)
Nearby residences	45	75

3.2 Noise Modelling Methodology and Assumptions

Construction noise emissions from the Proposal have been modelled using SoundPLAN v9.0. The selected noise calculation method is International Standard ISO 9613-2:1996 *Acoustics – Attenuation of sound during propagation outdoors – Part 2: General Method of Calculation* (ISO 9613-2).

Factors accounted for by ISO 9613-2 are:

- Noise source sound power and locations
- Shielding from ground topography and structures
- Noise attenuation due to geometric spreading
- Ground absorption
- Atmospheric absorption.

ISO 9613-2 is a "downwind" model, which conservatively assumes that each receiver is downwind from all noise sources.

3.3 Construction Plant, Activities and Sound Power Levels

Sound levels of typical construction equipment are listed in **Table 3-3**. Equipment sound levels have been determined from Transport for NSW's *Construction Noise Estimator* and the UK Department of Environment, Food and Rural Affairs' (DEFRA) *Noise Database for Prediction of Noise on Construction and Open Sites*.

The table gives both Sound Power Level (SWL) and Sound Pressure Level (SPL) at seven metres from the equipment. SWL is independent of measurement position. Verification of plant noise is often done by measuring the SPL at seven metres.

Based on the information in **Table 3-3**, activity sound power levels for several key construction phases have been calculated and are presented in **Table 3-4**.

Table 3-4 presents typical worst-case construction source noise levels across a 15-minute period, considering the likely usage of plant during that time, termed the "activity sound power level". The activity sound power is considered to represent the typical worst-case level in a given 15-minute period. It is important to note that this sound power level is unlikely to be sustained at such a level for the duration of the activity. As a result, many 15-minute periods will be at lower levels.

Table 3-3 Typical Construction Plant Sound Levels

Equipment	Sound Power Level, L_{Aeq} (dBA)	Sound Pressure Level at 7m, L_{Aeq} (dBA)
Bulldozer (D9)	116	91
Grader	113	88
Dump truck	108	83
Excavator, Large (~30t)	109	84
Concrete truck	107	82
Concrete pump	112	87
Concrete saw	113	88
Forklift	106	81
Mobile Crane	110	85
Hand-held power tools	109	84
Generator	104	79
Welder	105	80
Bulldozer (D9)	116	91

Table 3-4 Construction Phase Activities and Associated Sound Power Levels

Code	Activity	Typical Equipment Used	Activity Sound Power Level (dBA)
S1	Earthworks	Dozer Grader Dump truck Excavator	119
S2	Concreting	Concrete truck Concrete pump Concrete saw	116
S3	Assembly and fitout	Hand-held power tools Mobile crane Telehandler Generator Welder Truck	114

3.4 Predicted Construction Noise Levels

The predicted $L_{Aeq,15min}$ noise levels at sensitive receivers during the identified activities are presented in **Table 3-5**. The results indicate that construction noise levels are predicted to comply with the NML at all receivers.

Table 3-5 Predicted Construction Noise Levels

Receiver	Predicted Construction $L_{Aeq,15min}$ Noise Levels (dBA)			NML	Exceedance (dBA)
	S1	S2	S3		
R1	42 - 42	39 - 39	36 - 37	45	-
R2	32 - 33	29 - 30	26 - 28	45	-
R3	<20 - 21	<20	<20	45	-
R4	23 - 25	20 - 22	<20 - 20	45	-
R5	32 - 34	28 - 29	25 - 27	45	-
R6	22 - 24	21 - 21	<20	45	-
R7	<20	<20	<20	45	-
R8	32 - 32	26 - 28	23 - 26	45	-

4 OPERATIONAL NOISE ASSESSMENT

4.1 Operational Noise Trigger Levels

The *Noise Policy for Industry* (NPfI) (EPA, 2017) provides a framework for assessing environmental noise impacts from industrial premises and industrial development proposals in New South Wales.

The NPfI recommends the development of project noise trigger levels, which provide a benchmark for assessing a proposal or site. The project noise trigger levels should not be interpreted as mandatory noise criteria but, rather, as noise levels that, if exceeded, would indicate a potential noise impact on the community.

The project noise trigger level is the lower value of the project intrusiveness noise level and the project amenity noise level. The project intrusiveness noise level assesses the likelihood of noise being intrusive above the ambient noise level and is applied to residential receivers only. The project amenity noise level ensures the total industrial noise from all sources in the area does not rise above a maximum acceptable level.

The NPfI stipulates that project noise trigger levels are determined for the daytime (7am – 6pm), evening (6pm – 10pm) and night time (10pm – 7am) periods, as relevant. The determined trigger levels typically apply at the most affected point on or within the receiver property boundary.

4.1.1 Project Intrusiveness Noise Level

The intrusiveness noise level is the noise level 5 dBA above the rating background noise level (RBL) for each time period (daytime, evening or night time) of interest at a residential receiver. The RBL is derived from the measured L_{A90} noise levels.

The NPfI stipulates that project intrusiveness noise levels should not be set below 40 dBA during the daytime and 35 dBA in the evening and night time. Additionally, the NPfI recommends that the project intrusiveness noise level for evening is set at no greater than that for the daytime, and that the project intrusiveness level for night time is set at no greater than that for the evening and daytime.

A conservative approach has been adopted in this assessment whereby the minimum project intrusive noise levels recommended in the NPfI have been adopted. Intrusiveness noise levels for the project are summarised in **Table 4-1**.

Table 4-1 Project Intrusiveness Noise Levels

Receiver	Time of day [1]	RBL (dBA)	Project Intrusiveness noise level – $L_{Aeq,15min}$ (dBA)
R1 – R8	Day	35	40
	Evening	30	35
	Night	30	35

1. Day – 7am – 6pm; Evening = 6pm – 10pm; Night = 10pm – 7am.

4.1.2 Project Amenity Noise Levels

Project amenity noise levels aim to set a limit on continuing increases in noise levels from all industrial noise sources affecting a variety of receiver types; that is, the ambient noise level in an area from all industrial noise sources remains below recommended amenity noise levels.

The amenity assessment is based on noise criteria specific to land use and associated activities. The criteria relate only to industrial-type noise and do not include transportation noise (when on public transport corridors), noise from motor sport, construction noise, community noise, blasting, shooting ranges, occupational workplace noise, wind farms, amplified music/patron noise.

The amenity noise level aims to limit continuing increases in noise levels which may occur if the intrusiveness level alone is applied to successive development within an area.

The recommended amenity noise level represents the objective for total industrial noise at a receiver location. The project amenity noise level represents the objective for noise from a single industrial development at a receiver location.

To prevent increases in industrial noise due to the cumulative effect of several developments, the project amenity noise level for each new source of industrial noise is set at 5dBA below the recommended amenity noise level.

The following exceptions apply to determining the project amenity noise level:

- For high-traffic areas the amenity criterion for industrial noise becomes the $L_{Aeq,period(traffic)}$ minus 15dBA.
- In proposed developments in major industrial clusters.
- If the resulting project amenity noise level is at least 10 dB lower than the existing industrial noise level, the project amenity noise level can be set at 10 dB below existing industrial noise levels if it can be demonstrated that existing industrial noise levels are unlikely to reduce over time.
- Where cumulative industrial noise is not a consideration because no other industries are present in, or likely to be introduced into the area, the relevant amenity noise level is assigned as the project amenity noise level for the development.

Amenity noise levels are not used directly as regulatory limits. They are used in combination with the project intrusiveness noise level to assess the potential impact of noise, assess mitigation options and determine achievable noise requirements.

The project amenity noise levels are calculated from the recommended amenity noise levels presented in **Table 4-2**.

Table 4-2 Recommended Amenity Noise Levels

Receiver	Noise amenity area	Time of day [1]	Recommended amenity noise level – $L_{Aeq,period}$ (dBA)
Residential	Rural	Day	50
		Evening	45
		Night	40
	Urban	Day	55
		Evening	45
		Night	40
	Suburban	Day	60
		Evening	50
		Night	45
Hotels, motels, caretaker's quarters, holiday accommodation, permanent resident caravan parks	See column 4	See column 4	5 dBA above the recommended amenity noise level for a residence for the relevant noise amenity area and time of day.
School classroom (internal)	All	Noisiest 1-hour period when in use	35
Hospital ward:			
Internal	All	Noisiest 1-hour	35
External	All	Noisiest 1-hour	50
Place of worship (internal)	All	When in use	40
Area specifically reserved for passive recreation (e.g., national park)	All	When in use	50

Receiver	Noise amenity area	Time of day [1]	Recommended amenity noise level – $L_{Aeq,period}$ (dBA)
Active recreation area (e.g., school playground, golf course)	All	When in use	55
Commercial premises	All	When in use	65
Industrial premises	All	When in use	70
Industrial interface (applicable only to residential noise amenity areas)	All	All	Add 5 dBA to recommended noise amenity area

1. Day – 7am – 6pm; Evening = 6pm – 10pm; Night = 10pm – 7am.

Recommended amenity noise levels presented in **Table 4-2** represent the objective for total industrial noise at a receiver location. In the case of a single new noise source being proposed, the project amenity noise level represents the objective for noise from a single industrial development at the receiver location. This is typically calculated as the recommended amenity noise level minus 5 dBA.

Due to different averaging periods for the $L_{Aeq,15min}$ and $L_{Aeq,period}$ noise descriptors, the values of project intrusiveness and amenity noise levels cannot be compared directly when identifying noise trigger levels i.e. the most stringent values of each category. To make a comparison between descriptors, the NPfI assumes that the $L_{Aeq,15min}$ equivalent of an $L_{Aeq,period}$ noise level is equal to the $L_{Aeq,15min}$ level plus 3dB.

Residential receivers near the Proposal are classified as being in a “rural” noise amenity area.

The project amenity noise levels for the Proposal are presented in **Table 4-3**.

Table 4-3 Project Amenity Noise Levels

Receiver	Time of day [1]	Recommended amenity noise level – $L_{Aeq,period}$ (dBA)	Project amenity noise level – $L_{Aeq,15min}$ (dBA)
R1 – R8	Day	50	48
	Evening	45	43
	Night	40	38

1. Day – 7am – 6pm; Evening = 6pm – 10pm; Night = 10pm – 7am.

4.1.3 Project Noise Trigger Levels

The project intrusiveness noise levels and project amenity noise levels for sensitive receivers are summarised in **Table 4-4**. The project noise trigger levels (PNTL) – which are the lower values of the project intrusiveness noise levels and the project amenity noise levels – are highlighted in bold.

Table 4-4 Project Noise Trigger Levels

Receiver	Time of day [1]	Project intrusiveness noise level – $L_{Aeq,15min}$ (dBA)	Project amenity noise level – $L_{Aeq,15min}$ (dBA)
R1 – R8	Day	**40**	48
	Evening	**35**	43
	Night	**35**	38

1. Day – 7am – 6pm; Evening = 6pm – 10pm; Night = 10pm – 7am.

4.1.4 Maximum Noise Trigger Levels

Noise sources at night occurring over a short duration have the potential to cause sleep disturbance despite complying with project noise trigger levels. The Site operates on a 24-hour basis. Therefore, maximum noise level events need to be considered for potential sleep disturbance.

The NPfI recommends that, where the night time L_{Amax} receiver noise levels from a development exceeds 52 dBA or the RBL plus 15 dBA, whichever is the greater, then a more detailed assessment of potential sleep disturbance impacts is warranted. **Table 4-5** presents the maximum noise trigger levels for the receivers identified in this assessment.

Table 4-5 Maximum Noise Trigger Levels

Receiver	RBL (dBA)	RBL + 15 (dBA)	Maximum Noise Trigger Level (dBA)
R1 – R8	30	45	52

In accordance with the NPfI, in instances where night time $L_{Aeq,15min}$ noise levels exceed 40 dBA or the prevailing RBL plus 5 dBA, whichever is the greater, then a detailed assessment of potential sleep disturbance impacts is warranted. Since the night time project noise trigger level is less than 40 dBA for all nearby residential receivers, compliance with these noise trigger levels will ensure that no further assessment of night time $L_{Aeq,15min}$ noise levels, with regard to sleep disturbance, would be required.

4.2 Noise Modelling Methodology and Assumptions

Operational noise emissions from the Proposal have been modelled using SoundPLAN v9.0, using the CONCAWE prediction algorithm. The CONCAWE noise propagation model is used around the world and is widely accepted as an appropriate model for predicting noise over significant distances. Factors addressed in the noise modelling are:

- Equipment noise level emissions and locations
- Shielding from structures
- Noise attenuation due to geometric spreading
- Meteorological conditions
- Ground absorption
- Atmospheric absorption.

4.2.1 Meteorological Effects

At relatively large distances from a source, the resultant noise levels at receivers can be influenced by meteorological conditions, particularly temperature inversions and gradient winds. Where these factors are a feature of an area, their effect on resultant noise levels should be taken into account.

In accordance with the NPfI, the following default conditions have been modelled to account for potential noise-enhancing meteorology:

- Stability category D with 3.0 m/s source-to-receiver winds during the daytime and evening.
- Stability category F with 2. 0 m/s source-to-receiver winds during the night time.

The SoundPLAN noise modelling software includes a feature that allows the model to be run with the “worst-case wind direction”. This option produces the highest noise level for each receiver due to noise-enhancing winds and has been used in the modelling.

Predicted noise levels associated with both standard meteorological conditions (“calm”) and noise enhancing (“NE”) meteorological conditions are presented in this assessment.

4.3 Operational Noise Sources and Assessment Scenarios

4.3.1 Continuous Noise Sources

Significant continuous noise sources associated with the operation of the Proposal are as follows:

- Ventilation fans
- Trucks
- Forklifts
- Feed silo refill auger.

Up to 18 fans on each shed, located at the outer ends of the two rows of sheds, would operate to provide adequate ventilation and control temperatures within the sheds. Operation of all 18 fans would only be warranted in extreme (i.e. hot) weather conditions, late in the production cycle, and such conditions would occur during the day period only. During the cooler evening and night periods, a reduced number of fans would be required.

Feed deliveries would occur during the daytime via truck and would also involve the use of an auger to fill the feed silo.

Bird delivery and collection would occur at night, for bird welfare reasons, and would involve trucks and forklifts.

Sound power levels (SWL) for the noise sources identified above have been adopted from manufacturer data, information from the client and previous measurements conducted by SoundIN. SWL for significant noise sources associated with the operation of the Proposal a summarised in **Table 4-6**.

Table 4-6 Operational Noise Sources and Sound Power Levels

Item	Continuous SWL (dBA)
Ventilation fan (Euromme EM-50)	88
Truck	103
Forklift	95
Feed silo refill auger	105

Two scenarios have been developed to represent typical worst-case operational noise emissions from the Proposal during daytime and evening/night time and are summarised in **Table 4-7**.

Table 4-7 Noise Assessment Scenarios

Period [a]	Source	Comments
Day	Ventilation fans	18 fans operating for each shed
	Trucks	4 truck movements (two-way) per 15 minute period, 30 km/h average speed.
	Feed silo auger	Continuous operation
Evening & Night	Ventilation fans	8 fans operating for each shed
	Trucks	4 truck movements (two-way) per 15 minute period, 30 km/h average speed.
	Forklifts	4 forklifts operating continuously between the sheds.

4.3.2 Maximum Noise Level Sources

Pneumatic brakes on trucks are the most likely source of maximum (L_{Amax}) noise levels at sensitive receivers. The L_{Amax} sound power level of a semi-trailer parking brake can be up to 122 dBA.

4.4 Predicted Noise Levels

4.4.1 Predicted $L_{Aeq,15min}$ Noise Levels

The predicted $L_{Aeq,15min}$ noise levels at nearby residential receivers associated with the scenarios outlined above are presented in **Table 4-8**.

Table 4-8 Predicted $L_{Aeq,15min}$ Noise Levels

Receiver	Predicted $L_{Aeq,15min}$ noise level (dBA)						Project noise trigger level (dBA)			Complies?
	Day		Evening		Night		Day	Evening	Night	
	Calm	NE	Calm	NE	Calm	NE				
R1	34	38	30	35	31	35	40	35	35	Yes
R2	28	33	24	29	24	29	40	35	35	Yes
R3	<20	<20	<20	<20	<20	<20	40	35	35	Yes
R4	<20	<20	<20	<20	<20	<20	40	35	35	Yes
R5	26	31	22	28	23	28	40	35	35	Yes
R6	<20	22	<20	<20	<20	<20	40	35	35	Yes
R7	<20	<20	<20	<20	<20	<20	40	35	35	Yes
R8	22	28	<20	24	<20	24	40	35	35	Yes

The results in **Table 4-8** indicate that predicted noise levels at all nearby receivers comply with the noise trigger levels at all times.

Contour plots of the predicted $L_{Aeq,15min}$ noise levels during noise-enhancing meteorological conditions are presented in **Figure 4-1** and **Figure 4-2**.

4.4.2 Predicted L_{Amax} Noise Levels / Sleep Disturbance Assessment

The predicted night time L_{Amax} noise levels at nearby residential receivers due to the operation of the Proposal are presented in **Table 4-9**.

Table 4-9 Predicted L_{Amax} Noise Levels

Receiver ID	Predicted L_{Amax} Noise Level (dBA)		Maximum Noise Trigger Level (dBA)	Complies?
	Calm	NE		
R1	46	51	52	Y
R2	40	45	52	Y
R3	10	15	52	Y
R4	26	31	52	Y
R5	36	41	52	Y
R6	27	32	52	Y
R7	18	24	52	Y
R8	33	38	52	Y

The results in **Table 4-9** indicate that predicted L_{Amax} noise levels at all nearby receivers comply with the maximum noise trigger levels.

Figure 4-1 Operational Noise Contour Plot – Daytime, Noise-enhancing Meteorology

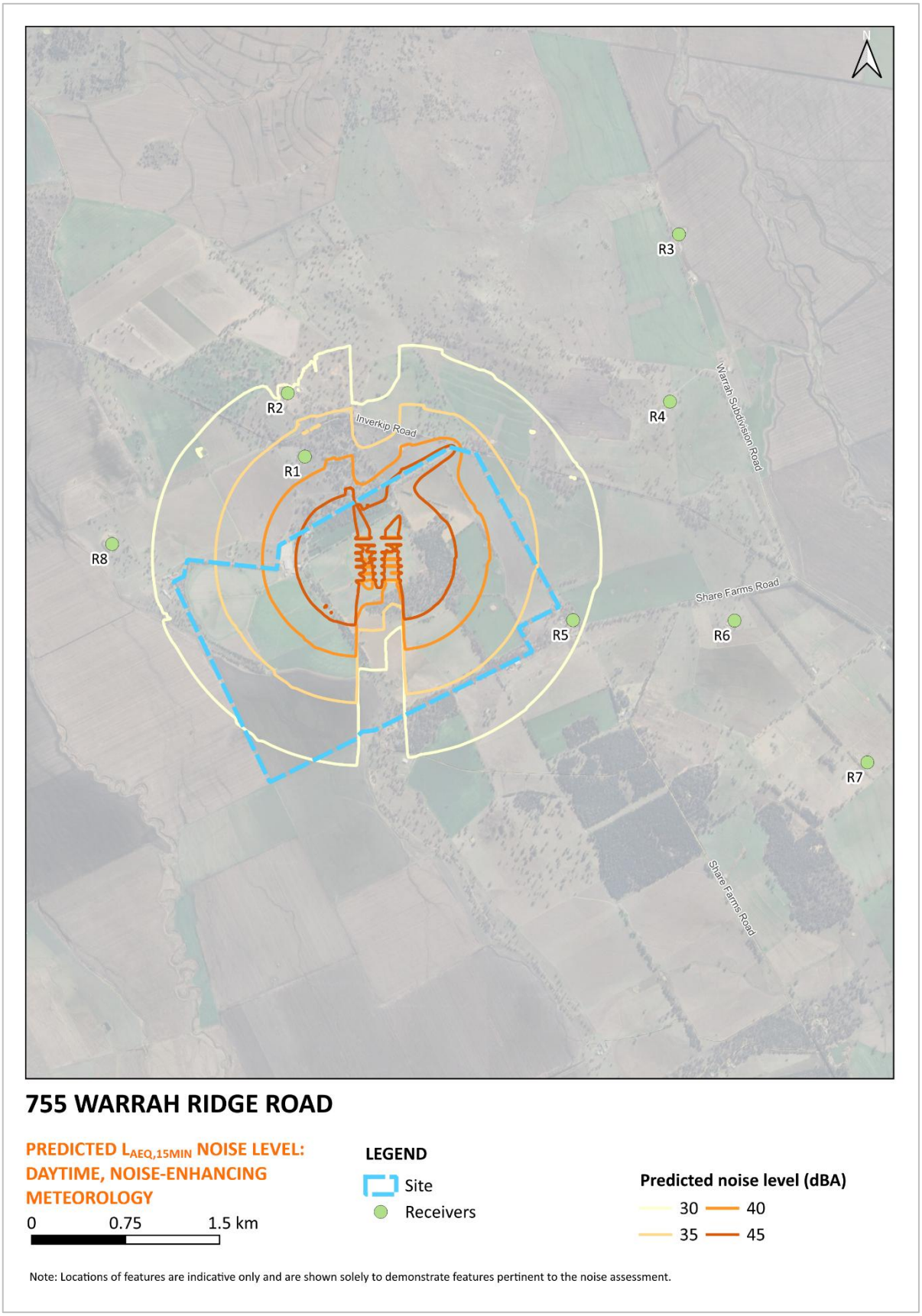
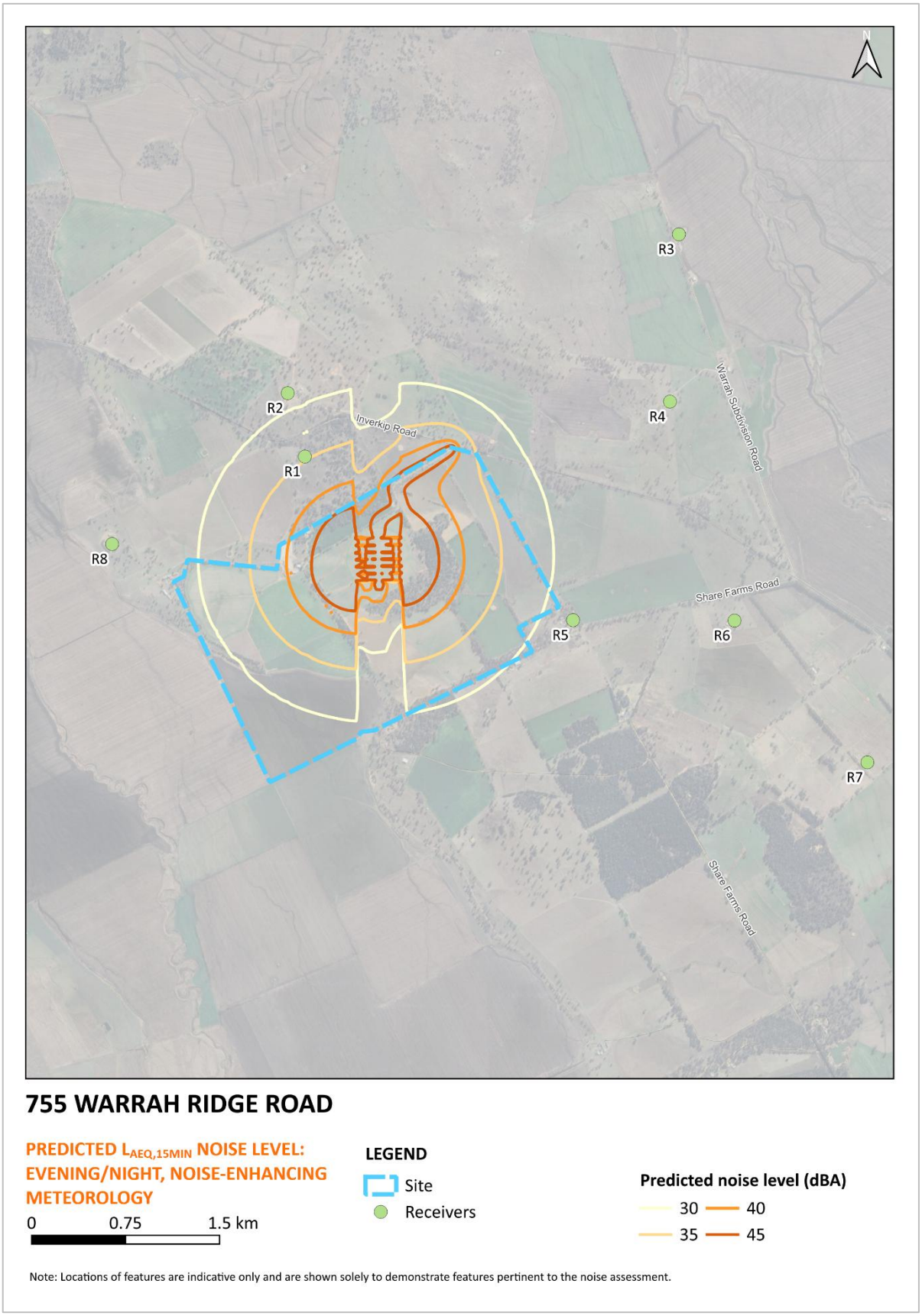


Figure 4-2 Operational Noise Contour Plot – Evening/Night, Noise-enhancing Meteorology



5 ROAD NOISE ASSESSMENT

The following Section assesses potential road noise impacts on sensitive receivers due to traffic generated by the Proposal.

There are no receivers within approximately 500 metres of the section of Warrah Ridge Road between the Site entrance and Merriwa Road. Therefore, sensitive receivers most potentially affected by noise from traffic generated by the Proposal are residences in Warrah, along Merriwa Road, north of the intersection with Warrah Ridge Road.

5.1 Road Noise Criteria

The *NSW Road Noise Policy* (RNP) (DECCW, 2011) sets out criteria for assessment of noise from traffic on public roads. The RNP sets out noise assessment criteria for "freeways", "arterial", "sub-arterial" and "local roads".

In accordance with the RNP, Merriwa Road is considered a sub-arterial road. The RNP impact assessment criteria for residential land uses affected by additional traffic on sub-arterial roads are presented in **Table 5-1**.

Table 5-1 RNP Impact Assessment Criteria

Road	Category	Assessment criteria (dBA)	
		Day	Night
Merriwa Road	Sub-arterial	$L_{Aeq,15\ hour}$ 60 (external)	$L_{Aeq,9\ hour}$ 55 (external)

Note: Day = 7am – 10pm; Night = 10pm – 7am

5.2 Road Noise Modelling

Road noise levels at the most potentially affected receivers along have been predicted using the Calculation of Road Traffic Noise (CoRTN) algorithm, and are based upon the following assumptions:

- Vehicle speeds of traffic (trucks) generated by the Proposal are approximately 60 km/h along Merriwa Road, near the residences in Warrah. The posted speed on this section of road is 100 km/h; however, vehicles travelling to/from the Site must slow down to safely negotiate the turn at Warrah Ridge Road.
- The facades of the nearest receivers to Merriwa Road are set back approximately 20 metres from the road.
- The existing traffic flows, and the associated road noise levels, for Merriwa Road are assumed

to be small compared to the traffic generated by the Proposal, particularly during peak traffic generation during bird collections.

5.3 Traffic Generated by the Proposal

As outlined in Section 2.3.3, the Proposal would generate approximately 20 heavy vehicle movements during a typical day. Additionally, the Proposal would generate up to 38 heavy vehicle movements at night during bird collections.

Table 5-2 summarises the future ("build") traffic volumes and percent heavy vehicles ("mix") along Merriwa Road.

Table 5-2 Traffic Volumes – No-Build and Build

Road	Time [a]	Future (build)	
		Volume	% Heavy
Merriwa Road	Day	20	100%
	Night	38	100%

a. Day = 7am – 10pm; Night = 10pm – 7am.

5.4 Predicted Road Noise Levels

Using the traffic data in **Table 5-2**, road noise levels at the most potentially affected sensitive receivers along Merriwa Road have been predicted and are shown in **Table 5-3**.

Table 5-3 Predicted $L_{Aeq,period}$ Road Noise Levels

Road	Build		RNP Criteria		Complies?	
	Day [a]	Night [a]	Day [a]	Night [a]	Day [a]	Night [a]
Merriwa Road	45	50	60	55	Yes	Yes

a. Day = 7am – 10pm; Night = 10pm – 7am.

Review of **Table 5-3** indicates that the predicted road noise levels at the facades of the most potentially affected receivers along Merriwa Road comply with the RNP assessment criteria.

6 CONCLUSION

SoundIN has been engaged by Agright to undertake a noise and vibration impact assessment for a proposed poultry farm on land at 755 Warrah Ridge Road, Warrah Ridge.

Noise impacts associated with the construction of the Proposal have been assessed in general accordance with the *Interim Construction Noise Guideline*.

Construction NML have been established for nearby residential receivers and recreation areas.

A computer noise model has been developed to predict noise levels associated with construction activities at nearby sensitive receivers.

The modelling results indicate that construction noise levels are predicted to comply with the NML at all receivers.

Noise impacts associated with the operation of the Proposal have been assessed in general accordance with the NPfI. A computer noise model has been developed to predict operational noise levels at sensitive receivers. Noise modelling indicates that operational noise levels comply with the established noise trigger levels at all receivers.

Road noise impacts associated with the Proposal have been assessed in accordance with the RNP. Predicted road noise levels associated with traffic generated by the Proposal comply with the RNP impact assessment criteria.