



MARSHALL DAY
Acoustics



COBBITTY SUB-PRECINCT 5
NOISE AND VIBRATION IMPACT ASSESSMENT

Rp 001 r03 20210764 | 13 January 2026

Project: **COBBITTY SUB-PRECINCT 5**

Prepared for: **JJ Cobbitty Development Pty Ltd**
Level 6, 5 Martin Place
Sydney NSW 2000

Attention: **Paul Hourigan**

Report No.: **Rp 001 r03 20210764**

Disclaimer

Reports produced by Marshall Day Acoustics (Australia) Pty Ltd are based on a specific scope, conditions and limitations, as agreed between Marshall Day Acoustics and the Client. Information and/or report(s) prepared by Marshall Day Acoustics may not be suitable for uses other than the specific project. No parties other than the Client should use any information and/or report(s) without first conferring with Marshall Day Acoustics.

The advice given herein is for acoustic purposes only. Relevant authorities and experts should be consulted with regard to compliance with regulations or requirements governing areas other than acoustics.

Copyright

The concepts and information contained in this document are the property of Marshall Day Acoustics (Australia) Pty Ltd. Use or copying of this document in whole or in part without the written permission of Marshall Day Acoustics constitutes an infringement of copyright. Information shall not be assigned to a third party without prior consent.

Document Control

Status:	Rev:	Comments	Date:	Author:	Reviewer:
Superseded	-	Superseded	11 Feb 2022	A Ahmadi	A Stoker
Superseded	01	To reflect minor reference updates	31 May 2022	A Ahmadi A Stoker	A Stoker
Superseded	02	Minor wording in introduction and update Appendix B to clarify extent of precinct	16 June 2022	A Stoker	M Ottley
Complete	03	Updated to reflect July 2025 ILP, changes to adjacent sites and updated traffic data	13 Jan 2026	A Stoker O Chahoud	M Ottley

EXECUTIVE SUMMARY

Modelling of noise propagation over the site has identified potential traffic noise impacts affecting a number of lots within Cobbitty Sub-Precinct 5.

This assessment has evaluated these impacts and provide conceptual noise control recommendations to allow the affected lots to comply with the relevant noise criteria detailed in this report.

Noise control recommendations include:

- The provision of physical noise controls in the form of acoustic wall/ fencing
- Arrangement of individual lots within superlots to maximise shielding effects
- Provision of architectural treatments to dwellings including alternative ventilation and upgraded glazing.

The conceptual content of this assessment is sufficient to assist in the finalisation of the development masterplan, however, detailed development of noise control recommendations specific to individual lots is expected to be conducted later as part of future development stages of the site.

In addition to traffic noise, noise from the proposed Western Sydney Airport and the proposed Sydney Metro Western Sydney Rail Corridor have been considered. This report has established that these sources are unlikely to give rise to adverse impacts on Cobbitty Sub-Precinct 5.

With the implementation of the recommendations of this report, all lots can comply with the noise and vibration criteria applicable to the site.

If the information used as part of this assessment, including traffic data, site topography, lot layouts, or dwelling properties (dimensions and positioning) changes significantly, the findings of this report will require revising and any advice provided may be obsolete.

Note for lot owners:

This report has not been prepared in relation to the Indicative Layout Plan for the proposed subdivision and does not address the requirements for individual lots. MDA cannot respond to requests for information relating to individual lots. Any such questions must be directed at the client who this report has been prepared for, listed on the previous page.

TABLE OF CONTENTS

1.0	INTRODUCTION	5
2.0	SITE DESCRIPTION.....	6
3.0	AIRCRAFT NOISE AND VIBRATION ASSESSMENT	7
4.0	RAIL NOISE AND VIBRATION ASSESSMENT	8
5.0	ROAD TRAFFIC NOISE AND VIBRATION ASSESSMENT	9
5.1	Traffic noise criteria – Camden ENP 2018.....	9
5.2	Noise modelling procedures and assumptions	10
5.2.1	3D noise modelling.....	10
5.2.2	Traffic volumes	11
5.2.3	Lot layouts and building locations.....	12
5.2.4	Building construction	12
5.2.5	Receiver heights	12
5.3	Noise model calibration	13
5.4	Noise control recommendations.....	13
5.4.1	Principle private open spaces.....	14
5.4.2	Internal noise levels	17
5.5	Noise modelling results and discussion	18
5.5.1	Principle private open space assessment.....	18
5.5.2	Internal noise level assessment	18

APPENDIX A GLOSSARY OF TERMINOLOGY

APPENDIX B INDICATIVE LAYOUT PLAN (REVISION F)

APPENDIX C TRAFFIC VOLUME AND MAP

APPENDIX D NOISE MONITORING LOCATIONS

APPENDIX E PRINCIPLE PRIVATE OPEN SPACE ASSESSMENT – 2041 TRAFFIC NOISE CONTOURS

APPENDIX F INTERNAL NOISE LEVEL ASSESSMENT – 2041 TRAFFIC NOISE CONTOURS

1.0 INTRODUCTION

This noise and vibration impact assessment (NVIA) has been prepared by Marshall Day Acoustics (Australia) Pty Ltd (MDA) on behalf of JJ Cobbitty Development Pty Ltd, (the proponent), in support of a Planning Proposal for the site located on The Northern Road, forming part of Cobbitty Sub-Precinct 5 in the South Creek West Land Release Area (SCWLA). The site is referred to as 'Precinct 5'.

The Planning Proposal is seeking to amend the *State Environmental Planning Policy (Precincts – Western Parkland City) 2021* (Parkland City SEPP) and rezone 172.68ha of land that forms 57% of Precinct 5. The remainder of Precinct 5 (130.41ha, 43%) is owned by a separate landowner.

The NVIA has been iteratively updated as revised indicative layout plans (ILP) have been issued. This revision of the NVIA reflects the latest ILP issued to MDA. Since the preparation of the previous version of this report the residential subdivision to the immediate south of the site has been constructed and these dwellings have now been incorporated into our noise model.

MDA has been engaged to consider the following general noise sources:

- Noise and vibration from operation of Western Sydney Airport
- Noise and vibration from rail activities
- Noise and vibration from traffic on The Northern Road.

Conclusions in this report are based on calculations, measurements and inspections carried out by MDA, in addition to:

- *AWCCO-2b-001-2 Indicative Layout Plan_Rev F* prepared by Design and Planning, dated 1 July 2025
- Traffic data as provided by SCT Consulting via email dated 16 December 2025.

If the information provided in the above drawings/documents change or no longer apply to the project, then the outcomes of this report may need to be revised.

A glossary of acoustic terminology used within this report is provided in Appendix A.

2.0 SITE DESCRIPTION

Precinct 5 is located within the south-west portion of the SCWLA in the suburb of Cobbitty, Camden. The precinct adjoins the Lowes Creek Maryland precinct to the north, the Pondicherry precinct to the east and the growing town centre and suburbs of Oran Park to the south.

The ILP considered in this NVIA is shown in Appendix B. The ILP comprises superlots of different proposed densities only with no individual lots detailed. The most sensitive lots are expected to be residential lots with a direct line of sight to The Northern Road.

The local topography does not offer significant natural shielding between Precinct 5 and The Northern Road.

Design ground elevations associated with the ILP have not been provided to MDA and noise modelling has included existing terrain data acquired from online sources.¹

¹ <https://maps.six.nsw.gov.au>

3.0 AIRCRAFT NOISE AND VIBRATION ASSESSMENT

Consideration has been given to potential noise and vibration impacts arising from operation of the future Western Sydney Airport (WSA), which is located approximately 11 km from Precinct 5.

Australian Standard AS 2021 provides guidance on the location and construction of new buildings exposed to aircraft noise and includes guidelines for the assessment of potential aircraft noise exposure at a given site based on the Australian Noise Exposure Forecast (ANEF) contour system.²

ANEF contour maps show the forecast of noise exposure levels and allow for future changes and expansion of the operation of an airport. AS 2021 uses the ANEF system to determine the suitability or otherwise of a site depending on its proposed use. Residential buildings located in an ANEF-20 or less, are classified as being “Acceptable”.

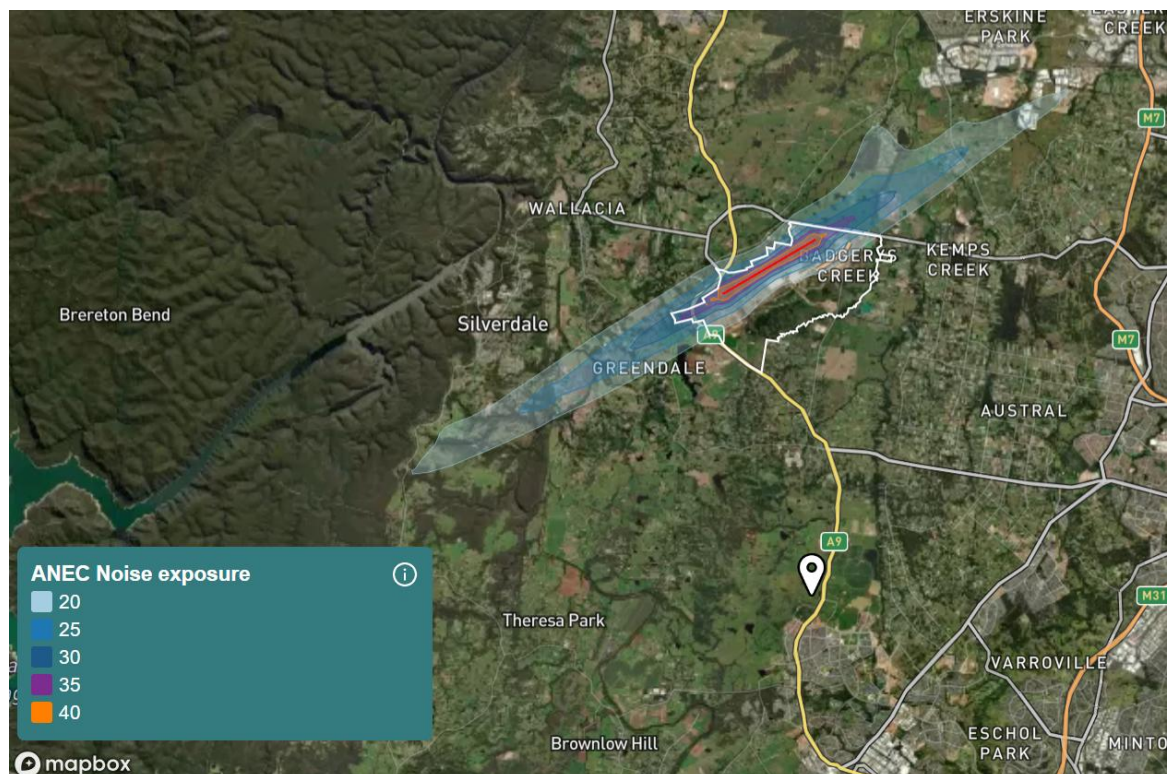
Due to the ongoing development of WSA ANEF contours are not available, however Australian Noise Exposure Concept (ANEC) contours have been publicly issued. ANEF uses final approved flight paths and is formally endorsed by Airservices Australia for planning, while ANEC uses hypothetical/indicative data for comparing different operational scenarios before finalization, acting as a planning precursor to an ANEF.

The Western Sydney International (Nancy-Bird Walton) Airport Aircraft Overflight Noise Tool presents ANEC contours for 2033, 2040 and 2055 conceptual operation of WSA.³

Figure 1 presents ANEC contours for the worst-case future operation of WSA (year 2055).

It is evident that the site is located well outside the ANEC-20 contour. The site is therefore classified as being “Acceptable”, with aircraft noise not indicated to adversely impact Precinct 5. In accordance with AS 2021 no further assessment of aircraft noise is required.

Figure 1: WSA ANEC contours and Precinct 5



² Australian Standard AS 2021:2015 Acoustics-Aircraft Noise Intrusion-Building, Siting and Construction

³ <https://wsiflightpaths.aerlabs.com/>

4.0 RAIL NOISE AND VIBRATION ASSESSMENT

With respect to rail noise the following documents have been considered:

- NSW Department of Planning; Interim Guideline – Development Near Rail Corridors and Busy Roads
- NSW State Environmental Planning Policy (Infrastructure) 2007 (Infrastructure SEPP).

The above documents indicate that rail noise must be assessed where a receiving development is within 80 m of the rail corridor, and rail vibration must be assessed where a receiving development is within 25 m.

Precinct 5 is located more than 600 m west of the proposed Sydney Metro Western Sydney Rail Corridor.

Noise and vibration impact from the proposed Sydney Metro Western Sydney Rail Corridor is therefore not indicated to be of concern and is not further assessed in this report.

5.0 ROAD TRAFFIC NOISE AND VIBRATION ASSESSMENT

Traffic noise from The Northern Road will be experienced at the proposed residential lots within Precinct 5.

The magnitude of traffic noise experienced by the residential lots must be determined to inform the Precinct 5 planning process.

Traffic noise predictions and assessment of potential adverse impacts have been conducted based on the ILP and accompanying traffic data.

Traffic noise levels have been predicted for two purposes:

- to advise conceptual building construction requirements based on internal noise level compliance
- to advise potential physical noise controls required to mitigate noise in principle private open areas in order to comply with the applicable external noise criteria.

Detailed development of noise control recommendations specific to individual lots is expected to be conducted at future development stages of the site.

5.1 Traffic noise criteria – Camden ENP 2018

Noise criteria for the assessment of road traffic noise have been developed considering the *Camden Environmental Noise Policy 2018* (ENP 2018), dated May 2018.

The ENP 2018 indicates that for residential development adjoining sub-arterial and collector roads:

1. *Development applications for residential development and other noise sensitive receivers must be accompanied by an acoustic report where the development is:*
 - *Adjacent to existing (or proposed arterial, sub-arterial roads, transit boulevards; or*
 - *Adjacent to collector road that is within a 100m radius of the centre of the intersection the above roads (Refer to Figure B3b in the ENP)*

Note: For all road developments the criteria should apply on the basis of the road traffic volumes projected for 10 years time.

2. *Residential dwellings adjacent to an existing (or proposed) railway line, arterial road, sub-arterial road or transit boulevards, or collector roads that are within 100m of the centre of the intersection of those roads, are to be designed to minimise the impact of noise.*

Residential dwellings must comply with the internal noise criteria in 'Table 3.1' from the 'Department of Planning; Interim Guideline – Development Near Rail Corridors and Busy Roads'.

Ventilation Requirements: If internal noise levels with windows or doors open exceed the criteria by more than 10dBA, the design of the ventilation for these rooms should be such that the occupants can leave windows closed, and also to meet the ventilation requirements of the Building Code of Australia.

The residential internal noise criteria from the *Interim Guideline – Development Near Rail Corridors and Busy Roads* (as referenced above) are presented in Table 1. We have presented the “windows closed” criteria as well as the equivalent allowable level with “windows open”, being 10 dB above the windows close levels.

Table 1: Residential Buildings Noise Criteria

Type of occupancy	Noise level, dBA windows closed	Noise level, dBA windows closed	Applicable time period
Sleeping areas (bedroom)	35		Night: 22:00 to 07:00
Other habitable rooms (excl. garages, kitchens, bathrooms & hallways)	40		At any time

Note: Airborne noise is calculated as $L_{eq}(9h)$ (night) and $L_{eq}(15h)$ (day)

The ENP 2018 also sets out the following with regard to noise criteria for external private open space for residences:

3. *The principle private open space or an equivalent area of useable open space of a dwelling within a new release area is not to exceed 57dBA LAeq (15hr) from 7am to 10pm.*

Note: For clarification purposes, a new release area, includes land mapped as Urban Release Area within the Camden LEP 2010 and includes Growth Area Precincts that have been rezoned.

Council may consider an increased decibel level where it can be demonstrated that the objectives of this policy are met and the above criteria is not able to be reasonably or feasibly achieved.

Note: The residential noise level criterion includes + 2.5 dBA allowance for noise reflected from the façade ('facade correction').

5.2 Noise modelling procedures and assumptions

5.2.1 3D noise modelling

Traffic noise levels across the site have been predicted with SoundPLANnoise v9.1, using the CoRTN method.⁴

Modelling assumptions used for calibration and future traffic noise predictions are presented in Table 2.

Table 2: Road traffic noise modelling assumptions

Variable	Assumed parameters used in noise modelling
Traffic speed	80 km/h
Roads for assessment	The Northern Road Traffic data for sub-arterial roads within the ILP has not been provided.
Road surface types	Dense grade asphalt has been assumed for this proposal. This type of pavement has 0 dB correction factor for tyre noise.
Gradient of roadway	Per ground topography
Ground topography	Data per 27 January 2022 ⁵
Height of receivers	Two storey residential dwellings: 1.5 m and 4.5 m above ground terrain Residential principle private open space: 1.5 m above ground terrain

⁴ HMSO Department of Transport Welsh Office *Calculation of Road Traffic Noise* (CoRTN) 1988

⁵ <https://maps.six.nsw.gov.au>

Variable	Assumed parameters used in noise modelling
Noise propagation method	ISO 9613-2:2024 ⁶
Atmospheric and ground conditions	Ground factor of G = 0.6 Temperature 10 °C and relative humidity 80 %.
Corrections	Conversion from L _{A10} to L _{Aeq} : -3dB per NSW RMS guidance Australian Road Condition Correction factors: -1.7 dBA in accordance with Australian Road Research Board (ARRB) report (Saunders et al, 1983)

5.2.2 Traffic volumes

Data provided for assessment has been taken from information supplied by SCT Consulting via email, dated 16 December 2025, “*SIDRA modelling worksheet_v0.9_Issue to Noise Consultants with subarterials*” (sic). This is reproduced in Appendix C.

Future (2041) traffic predictions are provided for various roads and are presented as day (07:00 to 22:00 hr), night (22:00 to 07:00 hr) and 24 hr annual average daily traffic (AADT). Traffic data is split to northbound and southbound carriageways and provided separately for cars and heavy vehicles.

The most pertinent data for assessment of traffic noise at Precinct 5 is data for The Northern Road, specifically “*Between Int 5 and 6*” and “*South of Int 6*”. Additional data is provided for sub-arterial roads to the north of Precinct 5, but not sub-arterial roads within Precinct 5 itself. Traffic noise predictions have therefore been carried out for The Northern Road only.

The CoRTN method adopted for the predictions utilises 18 hr traffic datasets. Per standard conversions, 24 hr AADT can be approximated to 18 hr traffic data through the following formula:

$$18 \text{ hr} = \text{AADT} * 0.94$$

Traffic data for construction and operation of WSA is not separately provided by the traffic consultant at this stage. MDA has previously been advised by SCT Consulting that the estimated future AADT (2041) traffic data would not be significantly impacted by the construction or operation traffic volumes associated with the proposed WSA.

Table 3: Calculated future (2041) 18 hr traffic data used for noise modelling

Road/Section	Direction	18 hr traffic	
		Total	Heavy Vehicle %
The Northern Road Between Int 5 and 6 ^a	Northbound	28,135	8.29
	Southbound	28,060	9.38
The Northern Road South of Int 6 ^a	Northbound	31,294	7.93
	Southbound	29,866	9.07

a Reflecting the distribution noted in Appendix C

⁶ ISO 9613-2:2024 *Acoustics — Attenuation of sound during propagation outdoors Part 2: Engineering method for the prediction of sound pressure levels outdoors* (ISO 9613-2:2024)

5.2.3 Lot layouts and building locations

The ILP includes superlots within Precinct 5 without introducing detailed lot layouts. For the purposes of noise modelling MDA has placed individual lots in nominal locations within the superlots, however, in some instances the arrangement of dwellings within the superlot forms a critical aspect of noise control for the development. Further comments with respect to these requirements are provided in Section 5.4.

5.2.4 Building construction

For the assessment of traffic noise ingress to internal spaces, building forms have been modelled as free standing, two-storey buildings with a footprint of approximately 13 m x 7.5 m for medium density superlots and 13 m x 13 m for low density superlots.

Unless otherwise stated, the dwelling construction shown in Table 4 is assumed and reflects a typical modern house construction.

Table 4: Assumed house construction

Building element	Construction
External walls	Double brick, brick veneer, or lightweight system with minimum R_w 45 acoustic rating
Roof	Either metal roofing with anticon or tiled with sarking
Ceiling insulation	R3.0 batts
Ceiling	Flush plasterboard

Calculation of internal noise levels is based on the typical room properties shown in Table 5.

Table 5: Assumed room properties

Room	Floor area, m ²	Ceiling height, m	Reverberation time, s	Glazing area, m ²
Bedroom	12	2.7	0.4	2
Living	30	2.7	0.5	5

5.2.5 Receiver heights

External noise levels representing principle private open spaces associated with the dwellings are calculated 1.5 m above the terrain level.

For the assessment of noise levels at building façades, building storeys are modelled as being 3 m i.e. a two-storey block would be 6 m in height. A 1.5 m high receiver is considered at each storey i.e. the ground floor being 1.5 m above local ground and Level 1 being 4.5 m above local ground.

5.3 Noise model calibration

In order to validate the noise modelling method, two long-term noise data loggers were installed within the site boundary fronting The Northern Road from 26 February 2020 to 11 March 2020. The locations of the noise monitoring positions are shown in Appendix D. Additional attended traffic noise measurement with concurrent traffic counting was carried out on 11 March 2020.

Noise logging measurements were conducted using the following calibrated noise measurement equipment:

Location 1

- 01dB Duo Smart Noise Monitor s/n 10499

Location 2

- 01dB Duo Smart Noise Monitor s/n 10419

The logging instruments were calibrated prior to and after the logging measurements using a Rion sound level calibrator Type NC-74, with no significant drift observed. Data adversely affected by periods of bad weather was excluded from the assessment. It is noted that during the period of long-term measurement, The Northern Road was under construction and traffic restrictions were applied. Therefore, the measured traffic noise during this period may not represent the typical operation of The Northern Road prior to, or after construction completion. The average single figure results of the noise survey are provided in Table 6.

Table 6: On-site noise survey results, dB

Logger Location	L _{Aeq, 15hr} , dB	L _{Aeq, 9hr} , dB
Noise Monitor 1	62	56
Noise Monitor 2	54	49

In order to validate the noise modelling method, a calibration noise model utilising factors listed in Table 2 was developed. The predictions arising from the calibration model were compared to noise levels detailed in Table 6. Results of the calibration model were found to be within 1 dB of the measured traffic noise levels. Therefore, no calibration correction is applied to the modelling method.

5.4 Noise control recommendations

The results of the modelling of 2041 traffic noise indicate that noise control measures will need to be incorporated into the future development plans of the site. This is to control noise to principle private open spaces, and internal rooms within future dwellings.

Lot specific noise control recommendations will be required to be developed in detail to ensure that applicable noise criteria are capable of being achieved.

As this assessment comprises an evaluation of the proposed ILP only, MDA provides general comments in relation to noise control, sufficient to demonstrate the conceptual feasibility of an appropriate precinct design.

Detailed development of noise control will be necessary during later stages.

5.4.1 Principle private open spaces

Position of dwelling within the subject lot

In order to minimise the impacts of noise from major roads on residential amenity, the ENP-2018 provides the following recommendation:

“Where possible bedrooms, main living areas and principal private open spaces are to be located away from noise sources”

Therefore, it is recommended that the layout of individual lots within the proposed superlots be such that the first-row buildings (with a direct line of sight to The Northern Road) provide maximal noise shielding to the principal private open spaces. The current ILP allows for adoption of this approach, with access roads being located between The Northern Road and the nearest individual lots. This road layout allows for individual lot layouts to be adopted which locate the driveway and front façade facing The Northern Road, with principal private open space located to the rear, shielded by the building itself.

Physical noise controls (wall/fences)

Due to the proximity of The Northern Road, additional physical noise controls such as acoustic fences will be required to ensure noise targets for the principal private open space for each lot is achieved.

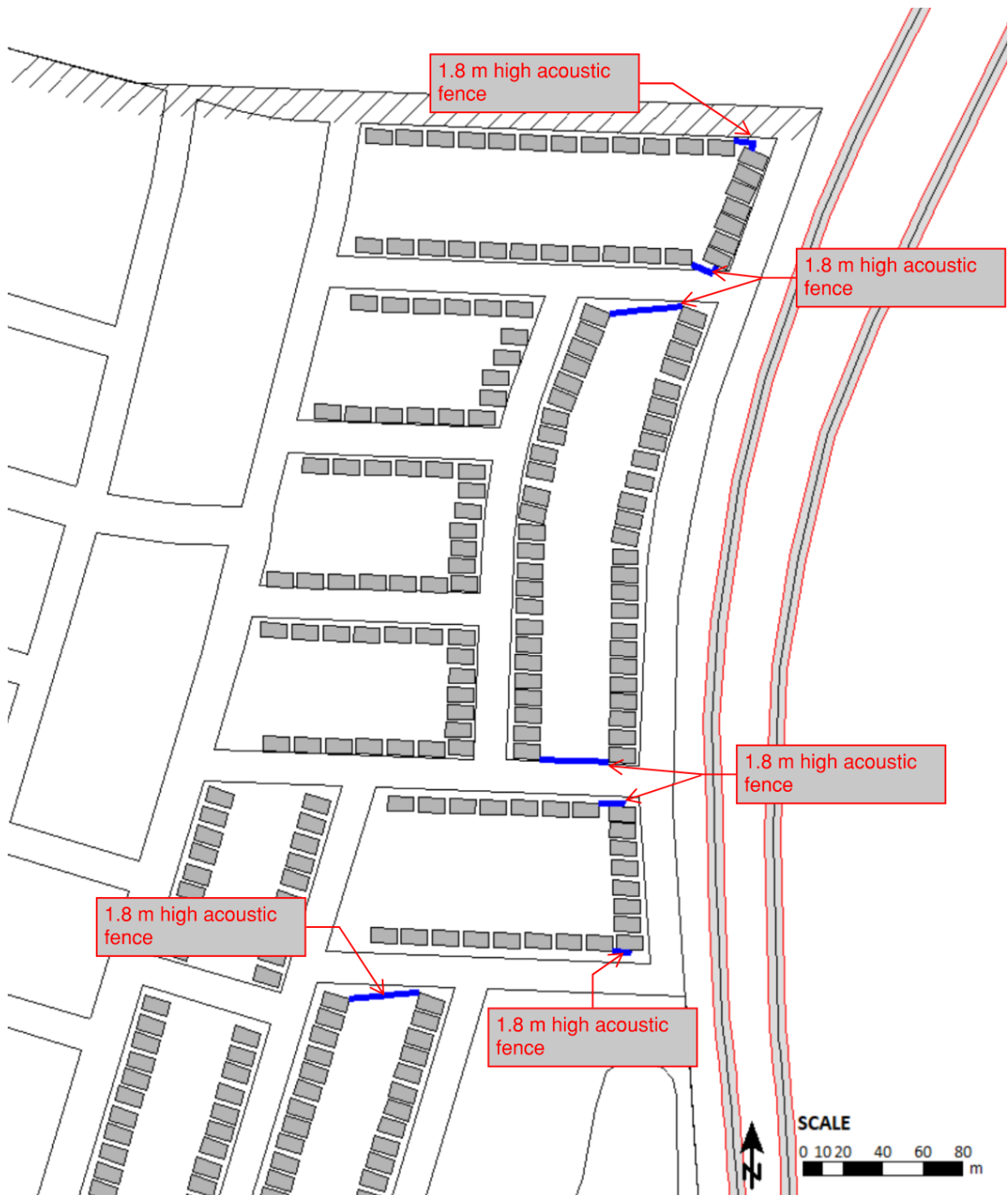
Acoustic fences must be designed and constructed such that they provide a continuous surface free from holes and gaps with a minimum surface mass of 14 kg/m². Examples include double lapped and capped timber (ensuring minimum 30 mm continuous thickness and no gaps between palings), proprietary fencing system, masonry or other construction approved by MDA.

Locations and heights of the required acoustic fencing will depend on the future development plans of the site and the final design ground elevations, however, for the purpose of this assessment, lot boundary fences with heights ranging from 1.8 m to 3.0 m have been modelled at various exposed side openings. This modelling indicates that the ILP is capable of complying with the required external noise criteria set out in the ENP 2018 with the outlined conceptual fencing arrangements.

Finalised fencing alignments must be developed as part of future development plans for the site.

Figure 2 shows examples of the locations and heights of the modelled acoustic fencing to the east of Precinct 5. Where acoustic fences of a particular height are indicated the specified height is relative to the local ground. Note that the assessment in this report is based on the existing ground elevations of the site.

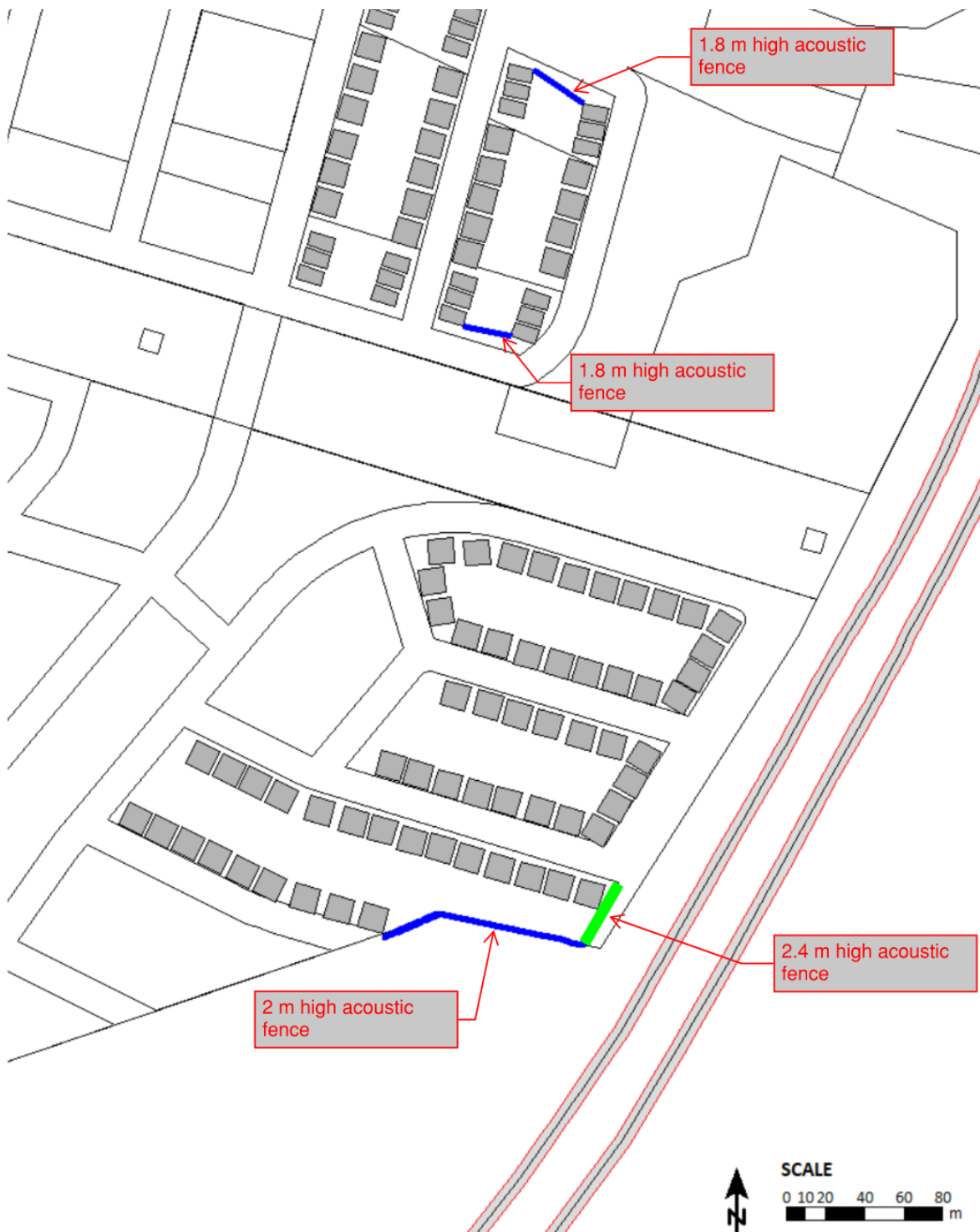
Figure 2: Example of location and height of required acoustic fences – east of the site



Due to the proximity of the southeastern section of the ILP to The Northern Road some of the closest lots will be more significantly affected and a barrier in the order of 2.4 m may be required to appropriately control noise to the principle private open spaces. These are shown in Figure 3.

Where acoustic fences of this height are not desirable, comprehensive earthworks such as the formation of a topographical earth berm to the site boundary, alongside the road, may provide additional acoustic benefit and permit the acoustic fencing in this area to be lower.

Figure 3: Example of location and height of required acoustic fences – southeast of the site



5.4.2 Internal noise levels

Architectural treatments

Noise levels have been predicted at ground floor (GF) and level 1 (L1) heights to determine noise levels at building façades and resultant internal noise levels within dwellings.

Noise modelling indicates that architectural noise control elements will be required to be incorporated into the design of dwellings within areas close to The Northern Road. This to permit target noise levels to be achieved at internal dwelling spaces throughout the development.

Lots within approximately 100 m from The Northern Road having façades with a direct line of sight to this road generally require some sort of architectural treatments. However, other façades to subsequent rows further away may also require architectural treatments.

Traffic noise contours provided in Appendix F denote the affected areas within the development. Contours are provided for GF and L1.

The green region in these figures, show the extent of the proposed rezoning area that will be generally capable of satisfying the “*windows open*” internal noise criteria with open windows and standard glazing and dwelling construction. No further architectural treatments are expected to be required for this region.

Regions identified in yellow and orange, are more adversely affected by traffic noise.

Where the internal noise criteria are expected to be exceeded by a small amount, the dwellings may be able to comply with the internal limits simply by closing the windows, with standard glazing and construction. In such cases the ENP 2018 sets out that if windows are closed for the control of noise, the design of the ventilation for these rooms should be such that the occupants can leave windows closed, and also to meet the ventilation requirements of the NCC.⁷

The required alternate ventilation may involve acoustically treated vents, mechanically driven fresh air systems, air-conditioning (incorporating fresh air, or window opening in a non-noise affected facade) or other design to provide fresh air to the space. This should be considered during the design of the dwelling. The mechanical ventilation systems must comply with the ventilation requirements in the NCC as well as requirements set out in AS 1668.2:2024.⁸ Any mechanical plant must also be designed to comply with external limits for mechanical plant noise set out by the ENP 2018 or other council requirements.

Where the external criteria are exceeded by a greater amount, upgraded architectural treatments in the form of alternative ventilation and upgraded single laminated glazing to some façades & rooms are likely required. A proprietary system typically comprising of up to 12 mm laminated glazing installed in an acoustic rated frame could be expected to apply.

Specific treatment noise control suites for individual dwellings will be required to be developed as part of the future development stages of the project.

⁷ Australian Building Codes Board *National Construction Code 2022*

⁸ AS 1668.2:2024 *The use of ventilation and airconditioning in buildings, Part 2: Mechanical ventilation in buildings*

5.5 Noise modelling results and discussion

5.5.1 Principle private open space assessment

With the incorporation of the general lot layout and physical noise control recommendations detailed in Section 5.4.1, it is expected that the noise targets detailed in the ENP 2018 can be achieved throughout the development.

Noise contours for GF receiver heights (1.5 m) predicted considering 2041 traffic volumes are detailed in Appendix E. Noise contours present the 57 dB $L_{Aeq(15hr)}$ noise contour zone indicating general compliance with the applicable external noise criteria and the efficacy of the nominated acoustic fences.

Two lots at the southern end of the development, nearest The Northern Road, show a marginal exceedance of less than 3 dB with the 2.4 m fence height modelled. This marginal exceedance could be eliminated if the fence around these lots were increased to 3.0 m. However given that the ground contours in the model are not the final levels and the exceedance prediction is marginal we believe an increase in fence height is not warranted.

The noise contours include + 2.5 dBA “*façade correction*” in accordance with the ENP 2018. It should be noted that for areas away from façades (e.g. in the centre of yards) the actual noise levels experienced will generally be below the noise criteria as the reflection from the local building façade decreases.

5.5.2 Internal noise level assessment

Figures in Appendix F show future (2041) noise contours at GF and L1 receiver heights for the entire site.

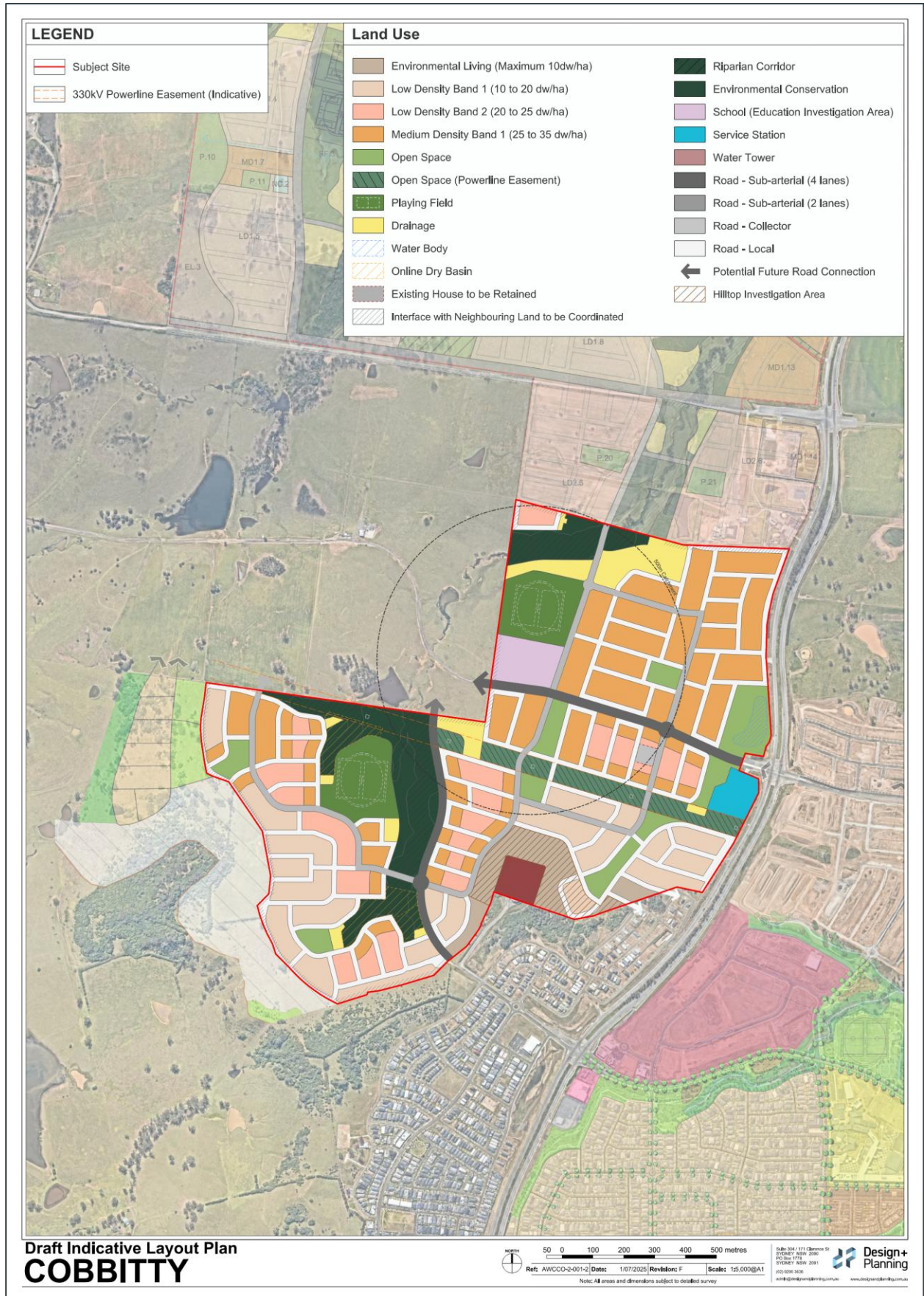
Results indicate that a majority of the site is capable of complying with applicable noise criteria without additional noise control measures.

For some regions, close to The Northern Road, additional architectural treatments may be required to ensure that acoustic criteria are achievable. These noise control recommendations have been discussed in detail in Section 5.4.2.

APPENDIX A GLOSSARY OF TERMINOLOGY

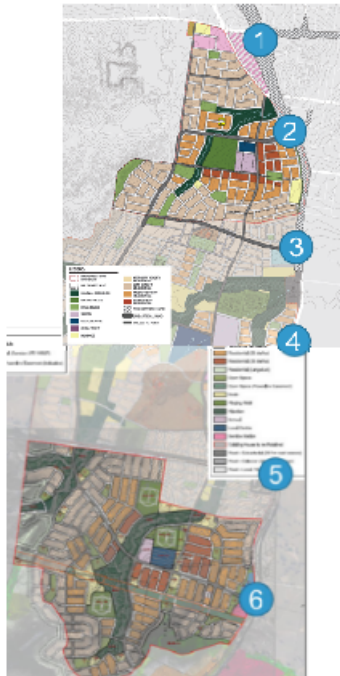
SPL or L_p	<u>Sound Pressure Level</u> A logarithmic ratio of a sound pressure measured at distance, relative to the threshold of hearing (20 μPa RMS) and expressed in decibels.
dB	<u>Decibel</u> The unit of sound level. Expressed as a logarithmic ratio of sound pressure P relative to a reference pressure of $P_r=20 \mu\text{Pa}$ i.e. $\text{dB} = 20 \times \log(P/P_r)$
dB(A)	The unit of sound level which has its frequency characteristics modified by a filter (A-weighted) so as to more closely approximate the frequency bias of the human ear.
A-weighting	The process by which noise levels are corrected to account for the non-linear frequency response of the human ear.
$L_{Aeq}(t)$	The equivalent continuous (time-averaged) A-weighted sound level. This is commonly referred to as the average noise level. The suffix "t" represents the time period to which the noise level relates, e.g. (8 h) would represent a period of 8 hours, (15 min) would represent a period of 15 minutes and (2200-0700) would represent a measurement time between 10 pm and 7 am.

APPENDIX B INDICATIVE LAYOUT PLAN (REVISION F)



APPENDIX C TRAFFIC VOLUME AND MAP

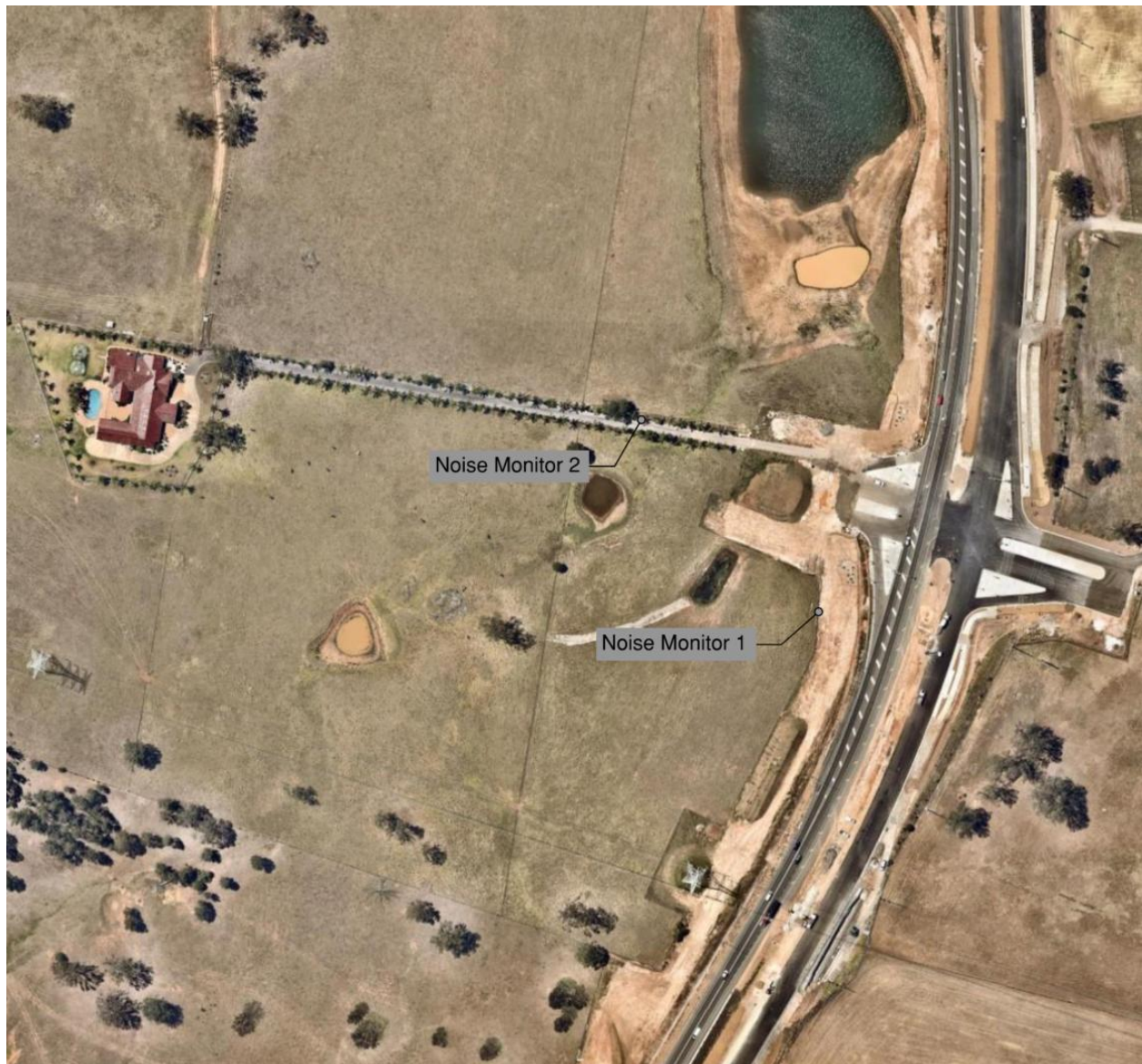
As supplied by SCT Consulting via email, dated 16 December 2025, "SIDRA modelling worksheet_v0.9_Issue to Noise Consultants with subarterials" (sic)



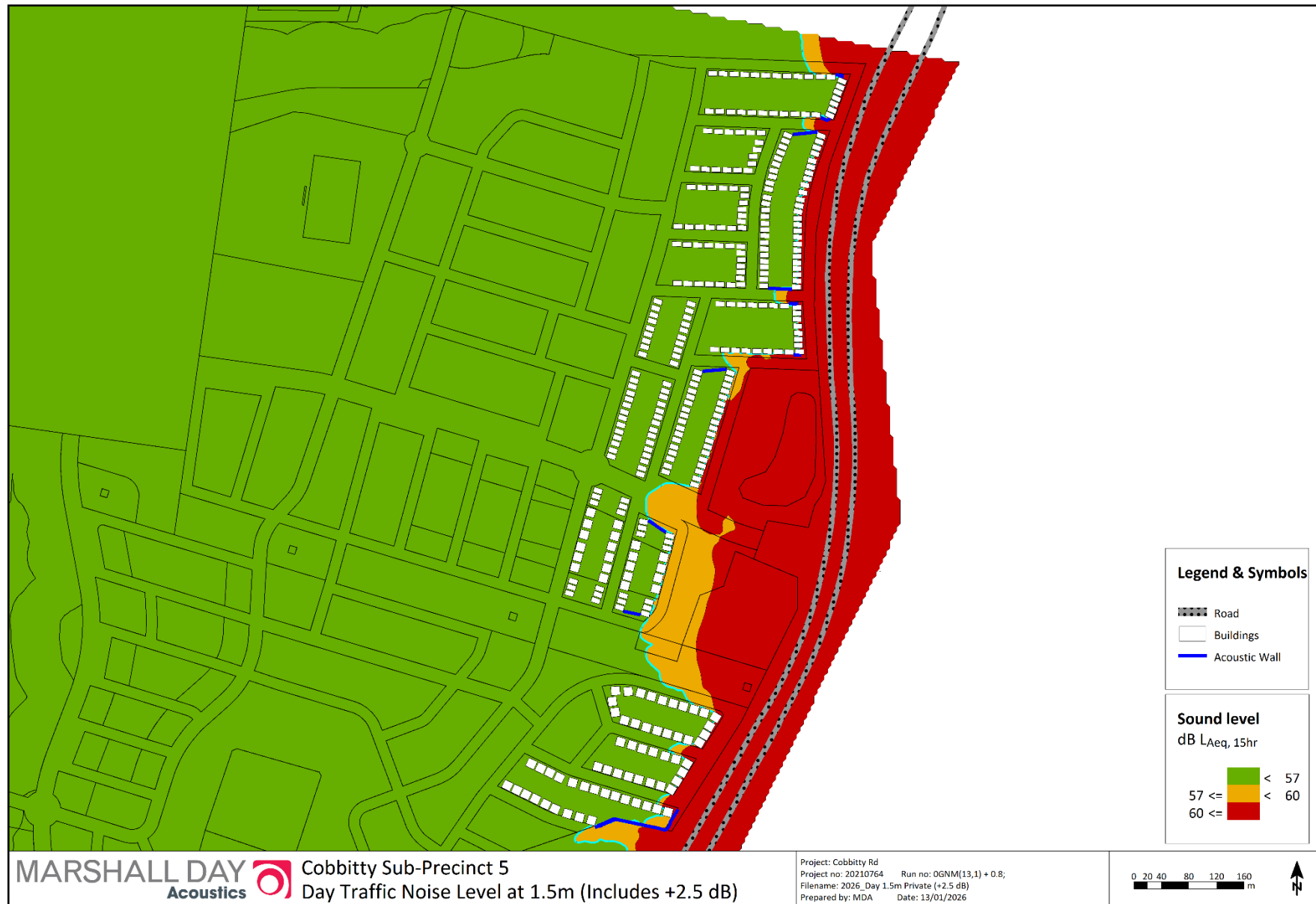
Location along TNR	2041 AADT							
	Northbound				Southbound			
	Light vehicles	Heavy vehicles	Total vehicles	% HV	Light vehicles	Heavy vehicles	Total vehicles	% HV
North of Int 2	37,614	4,001	41,616	10%	28,090	2,641	30,731	9%
Between Int 2 and 3	30,171	3,281	33,452	10%	25,129	2,321	27,450	8%
Between Int 3 and 4	24,169	2,721	26,890	10%	25,610	2,481	28,090	9%
Between Int 4 and 5	27,850	2,881	30,731	9%	28,811	2,801	31,612	9%
Between Int 5 and 6	27,450	2,481	29,931	8%	27,050	2,801	29,851	9%
South of Int 6	30,651	2,641	33,292	8%	28,891	2,881	31,772	9%
Location along TNR	2041 Day (7000 hrs-2200 hrs)							
	Northbound				Southbound			
	Light vehicles	Heavy vehicles	Total vehicles	% HV	Light vehicles	Heavy vehicles	Total vehicles	% HV
North of Int 2	32,627	3,471	36,098	10%	24,366	2,291	26,657	9%
Between Int 2 and 3	26,171	2,846	29,017	10%	21,797	2,013	23,811	8%
Between Int 3 and 4	20,964	2,360	23,325	10%	22,214	2,152	24,366	9%
Between Int 4 and 5	24,158	2,499	26,657	9%	24,991	2,430	27,420	9%
Between Int 5 and 6	23,811	2,152	25,963	8%	23,463	2,430	25,893	9%
South of Int 6	26,587	2,291	28,878	8%	25,060	2,499	27,559	9%
Location along TNR	2041 Night (2200hrs-7000 hrs)							
	Northbound				Southbound			
	Light vehicles	Heavy vehicles	Total vehicles	% HV	Light vehicles	Heavy vehicles	Total vehicles	% HV
North of Int 2	4,987	531	5,518	10%	3,725	350	4,075	9%
Between Int 2 and 3	4,000	435	4,436	10%	3,332	308	3,640	8%
Between Int 3 and 4	3,205	361	3,565	10%	3,396	329	3,725	9%
Between Int 4 and 5	3,693	382	4,075	9%	3,820	371	4,191	9%
Between Int 5 and 6	3,640	329	3,969	8%	3,587	371	3,958	9%
South of Int 6	4,064	350	4,414	8%	3,831	382	4,213	9%
Location along internal sub-arterials	2041 AADT							
	Northbound / Eastbound				Southbound / Westbound			
	Light vehicles	Heavy vehicles	Total vehicles	% HV	Light vehicles	Heavy vehicles	Total vehicles	% HV
Bringelly Road just west of TNR / Int 1	14,966	1,441	16,406	9%	11,924	1,120	13,045	9%
Belmore Road just west of TNR / Int 2	11,444	1,280	12,725	10%	6,082	720	6,803	11%
Lowes Creek Link Road just west of TNR / Int 3	13,605	1,361	14,966	9%	6,242	640	6,883	9%
N-S sub arterial just south of Bringelly Road	17,206	1,040	18,247	6%	9,924	1,040	10,964	9%
N-S sub arterial just south of Lowes Creek Link	17,286	1,841	19,127	10%	12,805	1,120	13,925	8%
Location along internal sub-arterials	2041 Day (7000 hrs-2200 hrs)							
	Northbound / Eastbound				Southbound / Westbound			
	Light vehicles	Heavy vehicles	Total vehicles	% HV	Light vehicles	Heavy vehicles	Total vehicles	% HV
Bringelly Road just west of TNR / Int 1	12,981	1,250	14,231	9%	10,343	972	11,315	9%
Belmore Road just west of TNR / Int 2	9,927	1,111	11,038	10%	5,276	625	5,901	11%
Lowes Creek Link Road just west of TNR / Int 3	11,801	1,180	12,981	9%	5,415	555	5,970	9%
N-S sub arterial just south of Bringelly Road	14,925	902	15,827	6%	8,608	902	9,510	9%
N-S sub arterial just south of Lowes Creek Link	14,994	1,597	16,591	10%	11,107	972	12,079	8%
Location along internal sub-arterials	2041 Night (2200hrs-7000 hrs)							
	Northbound / Eastbound				Southbound / Westbound			
	Light vehicles	Heavy vehicles	Total vehicles	% HV	Light vehicles	Heavy vehicles	Total vehicles	% HV
Bringelly Road just west of TNR / Int 1	1,984	191	2,175	9%	1,581	149	1,730	9%
Belmore Road just west of TNR / Int 2	1,517	170	1,687	10%	806	96	902	11%
Lowes Creek Link Road just west of TNR / Int 3	1,804	180	1,984	9%	828	85	913	9%
N-S sub arterial just south of Bringelly Road	2,281	138	2,419	6%	1,316	138	1,454	9%
N-S sub arterial just south of Lowes Creek Link Road	2,292	244	2,536	10%	1,698	149	1,846	8%

APPENDIX D NOISE MONITORING LOCATIONS

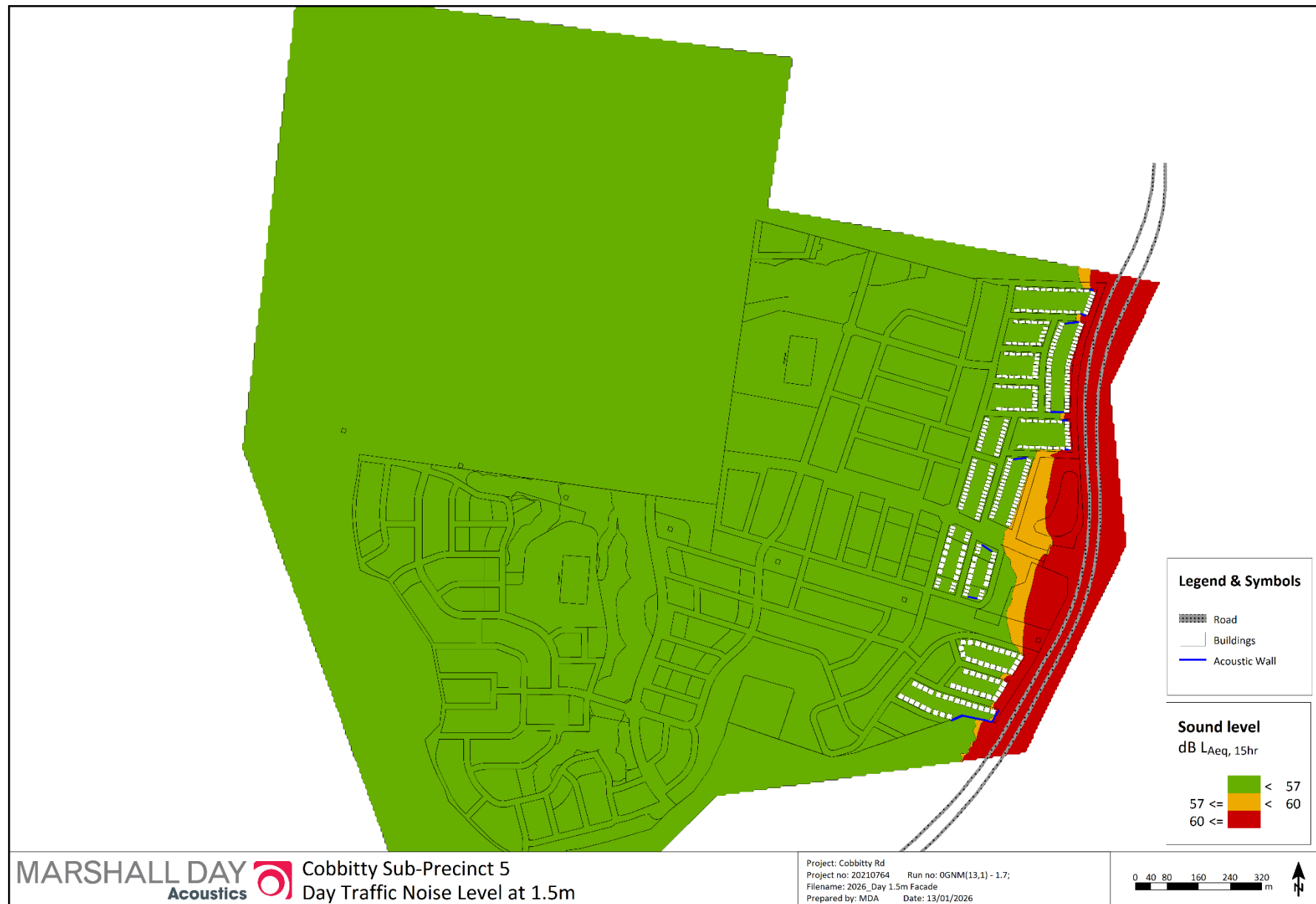
Figure 4: Location of noise monitors in relation to The Northern Road

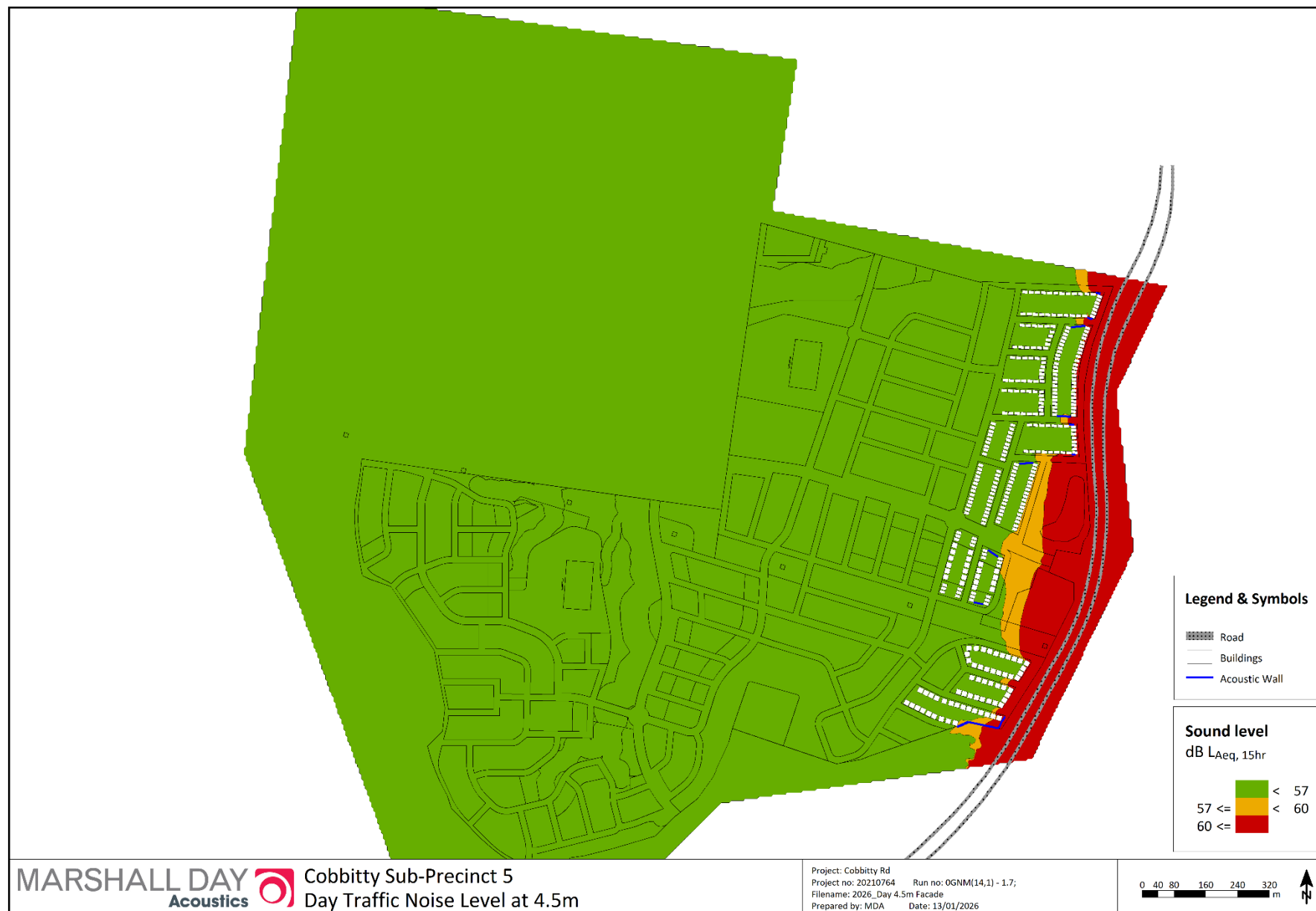


APPENDIX E PRINCIPLE PRIVATE OPEN SPACE ASSESSMENT – 2041 TRAFFIC NOISE CONTOURS



APPENDIX F INTERNAL NOISE LEVEL ASSESSMENT – 2041 TRAFFIC NOISE CONTOURS





MARSHALL DAY
Acoustics

Cobbitty Sub-Precinct 5
Day Traffic Noise Level at 4.5m

