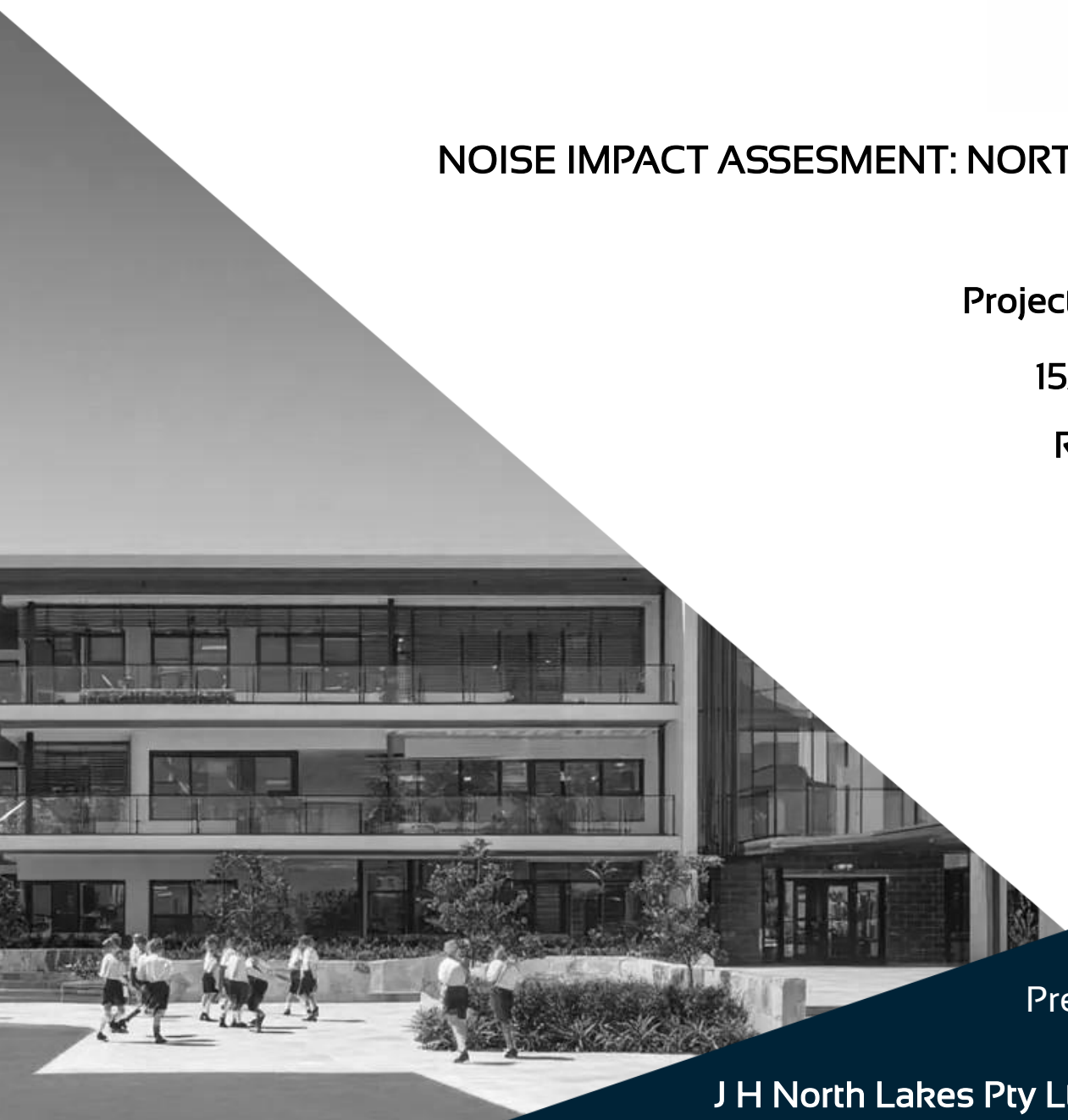
NOISE IMPACT ASSESMENT: NORTH LAKES CAMPUS

Project ID: 18010

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Prepared For:

J H North Lakes Pty Ltd c/- GPC

Assured Environmental

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Table 1: History of Revisions

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R0	15/06/2026	D. van der Kamp	Initial Release
R1	15/07/2026	J. Gaskell	Client Comments

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TABLE OF CONTENTS

GLOSSARY **6**

ABBREVIATIONS **7**

1 INTRODUCTION **8**

1.1 Background 8

1.2 Scope of Assessment 8

1.3 This Report 8

2 PROJECT DESCRIPTION **9**

2.1 Overview 9

2.2 Noise Sources 11

2.3 Assessment Scenarios 11

2.4 Occasional School Events 12

3 DESCRIPTION OF ENVIRONMENTAL VALUE **21**

3.1 Location and Surrounding Land Use 21

3.2 Topography 21

3.3 Sensitive Receptors 21

3.4 Existing Noise Environment 28

4 ASSESSMENT CRITERIA **31**

4.1 Moreton Bay Regional Council Planning Scheme 2016 31

4.1.1 Mango Hill Infrastructure Development Control Plan No 14 ..... *31*

4.1.2 Planning Scheme Policy 17 – Noise *31*

4.2 Environmental Protection (Noise) Policy 2019 34

4.3 Consolidation of Noise Criteria 35

4.4 Discussion 36

5 ASSESSMENT METHODOLOGY **37**

5.1 Software 37

5.2 Meteorology 37

5.3 Model Configuration 37

6 OPERATIONAL NOISE ASSESSMENT **38**

6.1 Overview 38

6.2 Predicted Noise Levels 38

6.2.1 Scenario 1: Pickup / Dropoff *38*

6.2.2 Scenario 2: Recess / Lunch *39*

6.2.3 Scenario 3: Teaching Period *40*

6.2.4 Scenario 4: Maintenance Activities *41*

6.2.5 Scenario 5: After-hours and Community Uses *42*

6.3 Noise Isopleths 43

6.4 Recommendations 43

7 CONCLUSION **45**

APPENDIX A: BACKGROUND NOISE MONITORING **46**
APPENDIX B: NOISE ISOPLETHS **58**
APPENDIX C: FULL RECEPTOR RESULTS **65**

LIST OF TABLES

TABLE 1: HISTORY OF REVISIONS 2
TABLE 2: ASSESSMENT SCENARIOS 11
TABLE 3: OPERATIONAL NOISE SOURCES 14
TABLE 4: NEARBY SENSITIVE RECEPTORS 21
TABLE 5: SUMMARY OF NOISE MONITORING LOCATIONS 28
TABLE 6: SUMMARY OF NOISE MONITORING RESULTS 30
TABLE 7: MBPS CRITERIA (EXTRACT FROM PSP17, SECTION 5) 31
TABLE 8: DERIVED PROJECT-SPECIFIC COUNCIL CRITERIA 32
TABLE 9: EPP (NOISE) SCHEDULE 1 ACOUSTIC QUALITY OBJECTIVES 34
TABLE 10: PROJECT NOISE LEVEL CRITERIA (OUTDOORS) 35
TABLE 11: SUMMARY OPERATIONAL NOISE CRITERIA 36
TABLE 12: NOISE ENHANCING METEOROLOGICAL CONDITIONS 37
TABLE 13: MODEL CONFIGURATION 37
TABLE 14: PREDICTED RECEPTOR NOISE LEVELS – SCENARIO 1 38
TABLE 15: PREDICTED RECEPTOR NOISE LEVELS – SCENARIO 2 39
TABLE 16: PREDICTED RECEPTOR NOISE LEVELS – SCENARIO 3 40
TABLE 17: PREDICTED RECEPTOR NOISE LEVELS – SCENARIO 4 41
TABLE 18: PREDICTED RECEPTOR NOISE LEVELS – SCENARIO 5 42
TABLE 19: SITE AND INSTRUMENTATION DATA – ML1 46
TABLE 20: OVERALL NOISE MONITORING RESULTS – ML1 48
TABLE 21: SITE AND INSTRUMENTATION DATA – ML2 50
TABLE 22: OVERALL NOISE MONITORING RESULTS – ML2 52
TABLE 23: SITE AND INSTRUMENTATION DATA – ML3 54
TABLE 24: OVERALL NOISE MONITORING RESULTS – ML3 56
TABLE 25: FULL PREDICTED RECEPTOR NOISE LEVELS – SCENARIO 1 65
TABLE 26: FULL PREDICTED RECEPTOR NOISE LEVELS – SCENARIO 2 70
TABLE 27: FULL PREDICTED RECEPTOR NOISE LEVELS – SCENARIO 3 75
TABLE 28: FULL PREDICTED RECEPTOR NOISE LEVELS – SCENARIO 4 80
TABLE 29: FULL PREDICTED RECEPTOR NOISE LEVELS – SCENARIO 5 85

LIST OF FIGURES

FIGURE 1: LAYOUT OF THE PROPOSED DEVELOPMENT AT THE SUBJECT SITE 10
FIGURE 2: NOISE SOURCE LOCATIONS - SCENARIO 1 16
FIGURE 3: NOISE SOURCE LOCATIONS - SCENARIO 2 17
FIGURE 4: NOISE SOURCE LOCATIONS - SCENARIO 3 18
FIGURE 5: NOISE SOURCE LOCATIONS - SCENARIO 4 19
FIGURE 6: NOISE SOURCE LOCATIONS - SCENARIO 5 20
FIGURE 7: SURROUNDING LAND USE 25
FIGURE 8: TOPOGRAPHY 26

FIGURE 9: SENSITIVE RECEPTOR LOCATIONS 27
FIGURE 10: NOISE MONITORING LOCATIONS AND CATCHMENTS 29
FIGURE 11: MAP OF PRECINCT / SECTOR PLANS 33
FIGURE 12: NOISE BARRIER LOCATION (SHOWN IN RED) 44
FIGURE 13: OVERALL STATISTICAL NOISE MEASUREMENT DATA PLOT – ML1 47
FIGURE 14: OVERALL STATISTICAL NOISE MEASUREMENT DATA PLOT – ML2 51
FIGURE 15: OVERALL STATISTICAL NOISE MEASUREMENT DATA PLOT – ML3 55

GLOSSARY

A-Weighting	A response provided by an electronic circuit which modifies sound in such a way that the resulting level is similar, to that perceived by the human ear.
ABL	Assessment Background Level is derived from the measured noise levels and calculated to be the tenth percentile of the background L_{A90} noise levels (i.e. sort the recorded hourly L_{A90} into ascending order and select the lowest ten percentile level). The ABL is a single-figure background level representing each assessment period (day / evening / night).), i.e. three ABLs for each 24-hour period of monitoring.
Background Creep	A gradual increase in the total amount of background noise in the area or place measured.
Background Noise	Noise level at a given location and time measured in the absence of any alleged noise nuisance sources. Typically, represented by the L_{A90} noise statistic.
Calibrator	An instrument used to carry out 'field calibrations' before and after monitoring to ensure the sound level meter does not drift.
dB (decibel)	This is the scale on which sound pressure level is expressed. It is defined as 20 times the logarithm of the ratio between the root-mean-square pressure of the sound field and the reference pressure (0.00002 N/m^2).
dB(A) or dBA	This is a measure of the overall noise level of sound across the audible spectrum with a frequency weighting (i.e., 'A' weighting) to compensate for the varying sensitivity of the human ear to sound at different frequencies.
Fast Time Weighting	Sound level meters apply a time-smoothing function to the measured sound. Fast time weighting has an exponential smoothing time constant of 125 milliseconds.
Free field	Refers to a sound pressure level determined at a point away from reflective surfaces other than the ground with no significant contribution due to sound from other reflective surfaces; generally, as measured outside and away from buildings.
L_{Aeq}	This is the equivalent steady sound level in dB(A) containing the same acoustic energy as the actual fluctuating sound level over the given period. Noise levels often fluctuate over a wide range with time. Therefore, when a noise varies over time, the L_{Aeq} is the equivalent continuous sound which would contain the same sound energy as the time varying sound. Many studies show that human reaction to level-varying sounds tends to relate closer to the L_{Aeq} noise level than any other descriptor.
L_{A10}, L_{A90}, L_{An}	Noise level exceeded for n% of the measurement period with A-weighted, calculated by statistical analysis - where n is between 0.01% and 99.99%. For example, L_{A10} is the noise level just exceeded for 10% of the measurement period, calculated by statistical analysis and used to determine traffic noise and L_{A90} is the noise level exceeded for 90% of the measurement period, A-weighted and calculated by statistical analysis and used to determine background noise levels.
L_{AFmax}	A-weighted, fast response, maximum, sound level.
L_{AFmin}	A-weighted, fast response, minimum, sound level.
RBL	Rating background noise level is the overall single-figure background level representing each assessment period (day / evening / night) over the whole monitoring period, i.e., three RBLs for the whole monitoring period.
SPL	Sound pressure level is a measure of the loudness of sound, determined by the pressure of sound waves in the air, measured in decibels (dB).
SWL	Sound power level in decibels is ten times the logarithm of the ratio of the sound power to the sound power reference level of 1 picowatt.

ABBREVIATIONS

AAAC	Australasian Association of Acoustical Consultants
AGL	Above Ground Level
AS	Australian Standards
EPP(Noise)	QLD Environmental Protection (Noise) Policy, 2019
FF	First Floor
GF	Ground Floor
GLA	General Learning Area
LGA	Local Government Area
LiDAR	Light Direction and Ranging
LTS	Learn To Swim
MBPS	Moreton Bay Planning Scheme
MBRC	Moreton Bay Regional Council
MHIDCP	Mango Hill Infrastructure Development Control Plan
MID	Ministerial Infrastructure Designation
ML	Monitoring Location
SF	Second Floor

1 INTRODUCTION

1.1 Background

J H North Lakes Pty Ltd c/- GPC (herein referred to as the 'Client') is seeking a Ministerial Infrastructure Designation (MID) for a proposed school to be located at 3 Bridgeport Drive, North Lakes (herein referred to as the 'Subject Site').

The proposed school is to be a large integrated education campus known as the North Lakes Anglican College Campus incorporating primary school, secondary school and prep/pre-prep facilities together with associated sporting and support infrastructure. The campus is split across northern and southern precincts connected by an internal access road, landscaped areas and pedestrian pathways.

The development includes classroom buildings, administration areas, covered courts, indoor learning spaces, car parking, maintenance facilities and extensive outdoor recreation areas including playing fields, tennis courts and multipurpose sports areas. The architectural design incorporates a mix of one- to three-storey buildings with landscaped courtyards, shaded walkways and vegetated buffers adjoining surrounding residential areas.

1.2 Scope of Assessment

Assured Environmental was appointed by the Client to undertake a Noise Impact Assessment for the proposed school at the Subject Site.

This noise study has been undertaken to assess the potential impacts of operational noise at the Subject Site on nearby sensitive receptors in accordance with the following policies and guidelines:

- Moreton Bay Council Planning Scheme, 2025;
- Mango Hill Infrastructure Development Control Plan; and
- QLD Environmental Protection (Noise) Policy, 2019.

In accordance with the requirements of the above guidelines, computational modelling and first-principle calculations have been undertaken to support the assessment of the potential for adverse amenity impacts as a result of the proposed development at the Subject Site.

1.3 This Report

This report summarises the methodology, results and conclusions of the Noise Impact Assessment.

2 PROJECT DESCRIPTION

2.1 Overview

The North Lakes Campus is proposed to support 1,550 students across primary and secondary age groups. A review of the architectural plans identifies the following key buildings and spaces:

- A secondary school precinct to the north, including:
  - Administration building;
  - Library;
  - General Learning Areas (GLAs);
  - Covered assembly area; and
  - Chapel.
- A primary school precinct to the south, including:
  - Administration building;
  - Library;
  - GLAs; and
  - Outdoor playgrounds.
- Sporting amenities located throughout, including:
  - Two playing fields;
  - Four tennis courts;
  - Two indoor pools (one full size and one Learn To Swim (LTS) pool); and
  - Three basketball courts.

The layout of the proposed development is detailed in Figure 1.

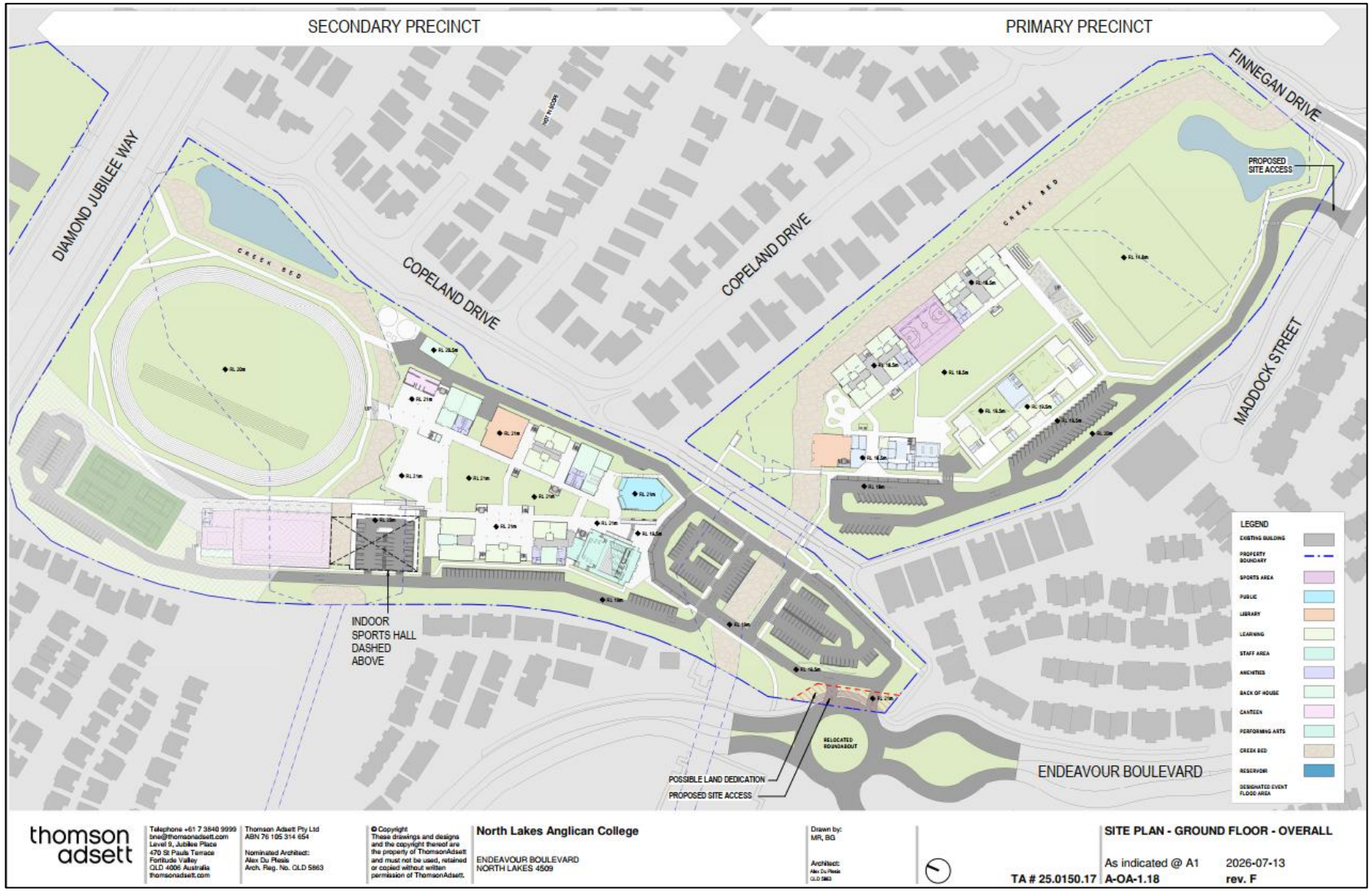


Figure 1: Layout of the Proposed Development at the Subject Site

2.2 Noise Sources

The noise emissions from a school are at their most significant during periods where students are located externally, such as the periods before school commences and after it ends, as well as the recess and lunch breaks through the day.

In addition to the noise emissions associated with students in external areas, the following sources contribute to the overall noise emissions from a school:

- Public address systems;
- Vehicle movements (pickup/drop-off movements, staff arrivals/departures, and other services such as waste collections);
- Mechanical plant and equipment servicing the buildings; and
- Maintenance activities such as landscaping.

Sound Power Level (SWL) data for each noise source was obtained from surveys of similar sources by Assured Environmental, published literature, and manufacturer information. All data has been reviewed for any applicable modifying factor adjustments in accordance Australian Standard (AS) 1055:1997 Acoustics – Description and measurement of environmental noise in line with the requirements of SC6.17 of the Moreton Bay Regional Council Planning Scheme 2016 (MBPS). It should be noted that AS 1055:1997 has been superseded by a 2018 version of the standard, which will be adopted for this assessment.

All mechanical plant noise sources associated with the proposed development are considered steady in nature, and all other sources are considered non-steady.

A summary of the noise source information for the operation of the proposed development is detailed in Table 3.

2.3 Assessment Scenarios

Based on the planned activity areas and typical uses of primary and secondary schools, the assessment is divided into five key scenarios, as detailed in Table 2.

Table 2: Assessment Scenarios

Scenario	Description	Assumptions
1	Pickup / Dropoff	▪ Peak vehicle movements associated with drop-offs, pickups, and buses ▪ 30% of students (195 primary students, 270 secondary students) located in external areas; mixture of passive and active use ▪ Public address system operating ▪ Mechanical plant and equipment operating *Assessed to DAY criteria (7:00 am to 6:00 pm)*
2	Recess / lunch	▪ 80% of students (520 primary students, 720 secondary students) located in external areas, speaking and playing; mixture of passive and active use ▪ Public address system operating ▪ Mechanical plant and equipment operating *Assessed to DAY criteria*

Scenario	Description	Assumptions
3	Teaching period	▪ Noise breakout from music rooms ▪ 2 primary and 2 secondary classes in outdoor learning areas ▪ 2 secondary PE classes: one each on tennis courts, basketball courts, playing field, and pool ▪ 2 primary PE classes: one each on basketball courts and playing field ▪ Mechanical plant and equipment operating *Assessed to DAY criteria*
4	Maintenance activities	▪ Grounds maintenance (mowing lawns, leaf blowing, etc.) ▪ Waste collection and deliveries *Assessed to DAY criteria*
5	After-hours and community uses	▪ Off-peak vehicle movements ▪ Use of the hall for musical-style event ▪ Sporting club activities (use of both fields, pools, and basketball courts) *Assessed to DAY and EVENING (6:00 pm to 10:00 pm) criteria*

The locations of the noise sources within the above scenarios are presented in Figures 2 to 6.

2.4 Occasional School Events

In addition to routine day-to-day educational activities assessed in the above five scenarios, educational establishments may periodically host a range of special events and activities associated with the operation of the school. These may include, but are not necessarily limited to:

- athletics carnivals;
- sports days;
- inter-school sporting fixtures;
- school fetes and community events;
- presentation ceremonies;
- graduation events;
- open days;
- performances; and
- other school-related gatherings.

Such activities typically involve temporary increases in the number of students, staff, visitors and spectators present on site and may result in elevated noise levels relative to routine school operations.

At the time of this assessment being prepared, the specific operational details of these events are generally unknown and may vary significantly from event to event. Factors such as attendance numbers, event duration, frequency, location, and the extent of any amplification are not typically defined as part of the Development Application process. Accordingly, the prediction of noise emissions from such events would require a number of assumptions which may not be representative of actual future operation.

These activities are not considered representative of the normal daily operation of the proposed school. Instead, they are considered to be ancillary activities which occur on an occasional basis and form an expected component of school operations.

For these reasons, the quantitative assessment presented in this report has focused on routine operational scenarios that are expected to occur regularly throughout the school year and which therefore represent the most appropriate basis for evaluating ongoing acoustic impacts.

Notwithstanding the above, occasional events are expected to remain compatible with the intended function of the Subject Site as an educational establishment. Such activities are generally confined to daytime periods, occur infrequently, and are characteristic of educational facilities throughout Queensland. The occurrence of periodic school events is therefore considered an inherent and foreseeable aspect of the approved land use.

Where required, the school may implement operational controls for individual events, including management of public address systems, event scheduling, parking and traffic management measures, and notification of nearby residents for larger events. Such measures can assist in minimising the potential for adverse amenity impacts while maintaining the educational, recreational and community functions of the establishment.

Occasional special events are not considered to represent the governing operational noise scenario for the proposed development and have therefore been addressed qualitatively rather than through detailed quantitative assessment.

Table 3: Operational Noise Sources

Noise Source	Qty	Height (m)	SWL (L_{Aeq} dB(A))	Corrections dB(A)
Primary School				
Group of 25 primary students	Number of groups varies – see Section 2.3	1.0	89 per group	
PA system / bell	2	4.0	100	-18 (1 min/hr)
AC unit	15	1.0	85	-10 (screening)
Light vehicles	Peak: 292 vph Off-peak: 50 vph	0.5	Peak: 70/m Off-peak: 65/m	
Buses	Peak: 1 vph Off-peak: 0 vph	1.0	Peak: 55/m Off-peak: 0/m	
Secondary School				
Group of 25 secondary students	Number of groups varies – see Section 2.3	1.5	87 per group	
Music room	3	Varies	85 (average internal SPL)	
PA system / bell	3	4.0	100	-18 (1 min/hr)
AC unit	22	1.0	85	-10 (screening)
Pool pumps / filters	4	1.0	94	-20 (screening)
Light vehicles	Peak: 225 vph Off-peak: 50 vph	0.5	Peak: 59 - 69/m Off-peak: 62/m	
Buses	Peak: 5 vph Off-peak: 0 vph	1.0	Peak: 62/m Off-peak: 0/m	
Other Activities				
Ride-on lawnmower	2	1.0	101	-3 (30 min/hr)
Leaf blower	4	1.0	108	-8 (10 min/hr)
Delivery / waste collection	4 vph	1.0	58/m	
Whistle	4	1.5	99	-18 (1 min/hr)

Noise Source	Qty	Height (m)	SWL (L_{Aeq} dB(A))	Corrections dB(A)
Learn to swim classes	1	Varies	85 (average internal SPL)	
Sports match – 25 people (inc. spectators)	4	1.5	87	+5 (synchronisation)
Hall activities	1	Varies	85 (average internal SPL)	+5 (synchronisation)

a) Any additional corrections applied for noise characteristics, such as tonality, low frequency and impulsiveness.

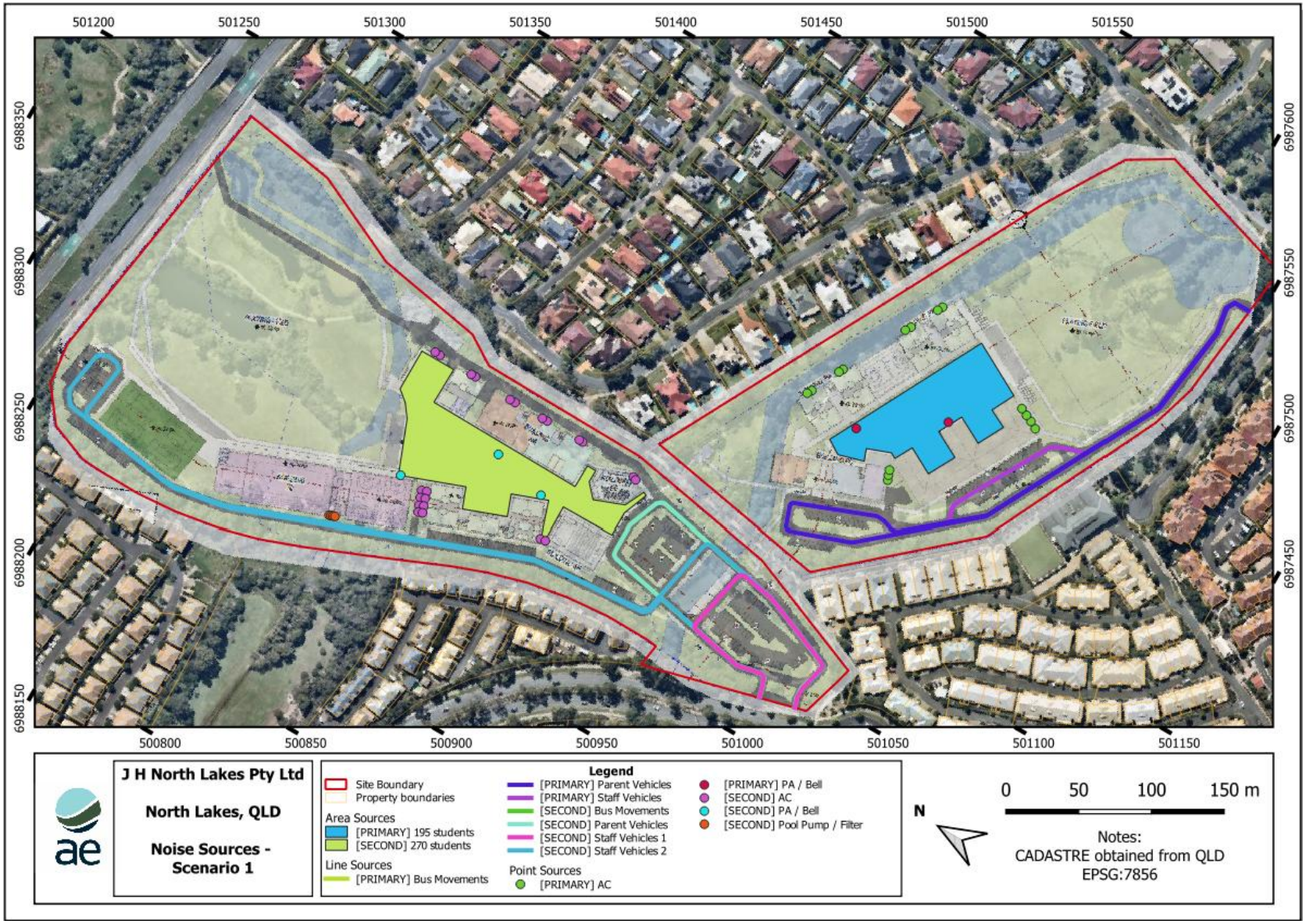


Figure 2: Noise Source Locations - Scenario 1

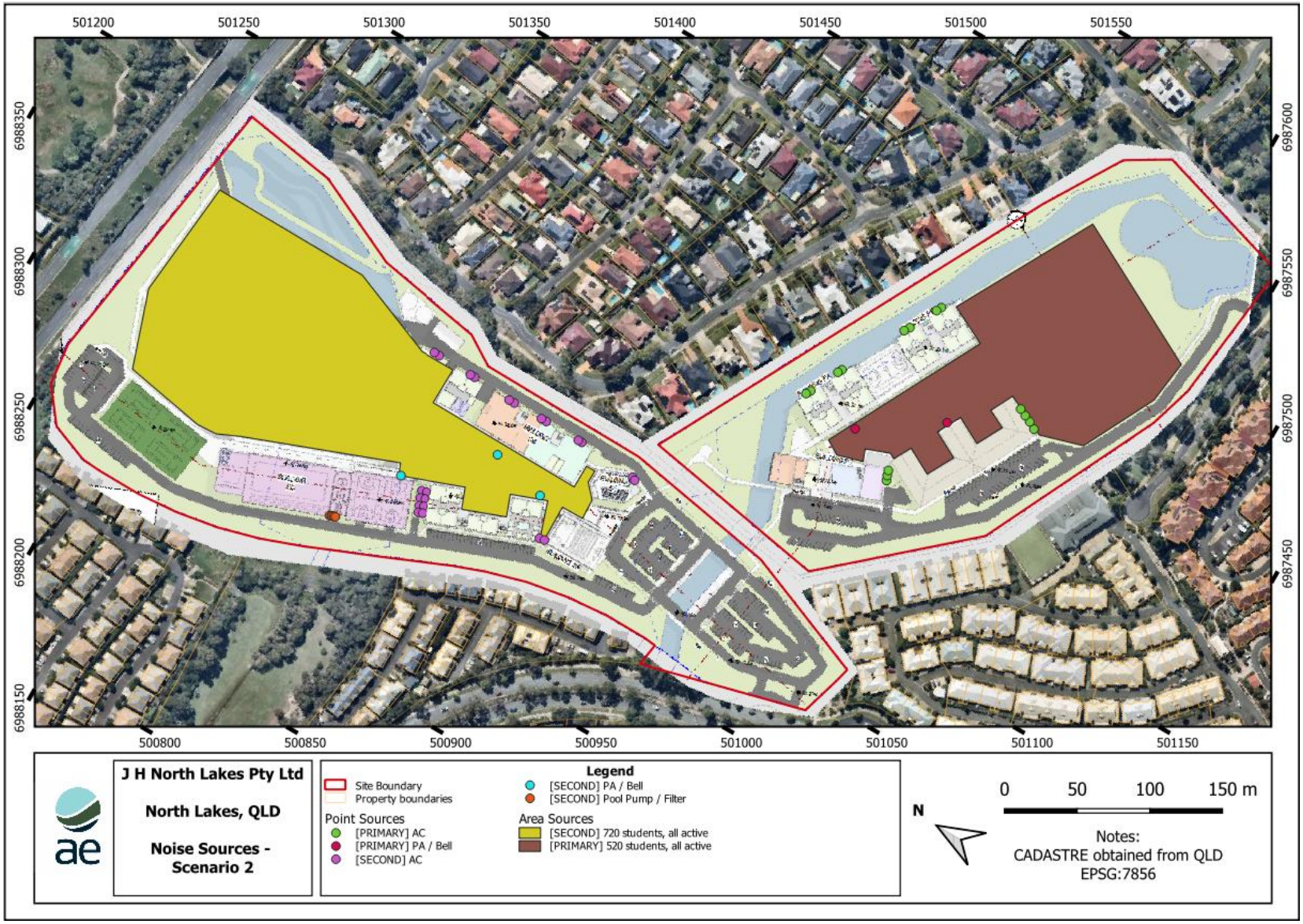


Figure 3: Noise Source Locations - Scenario 2

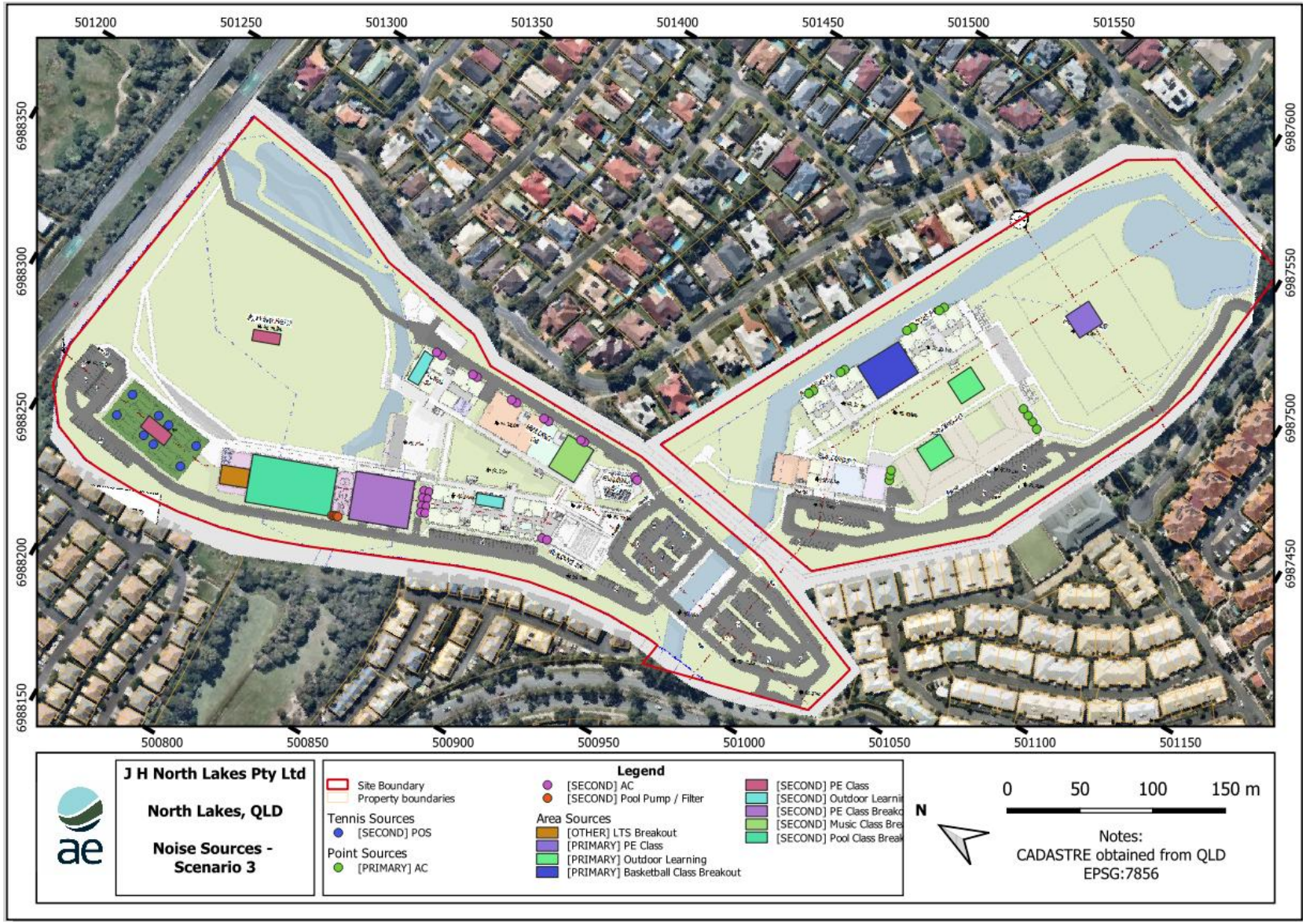


Figure 4: Noise Source Locations - Scenario 3

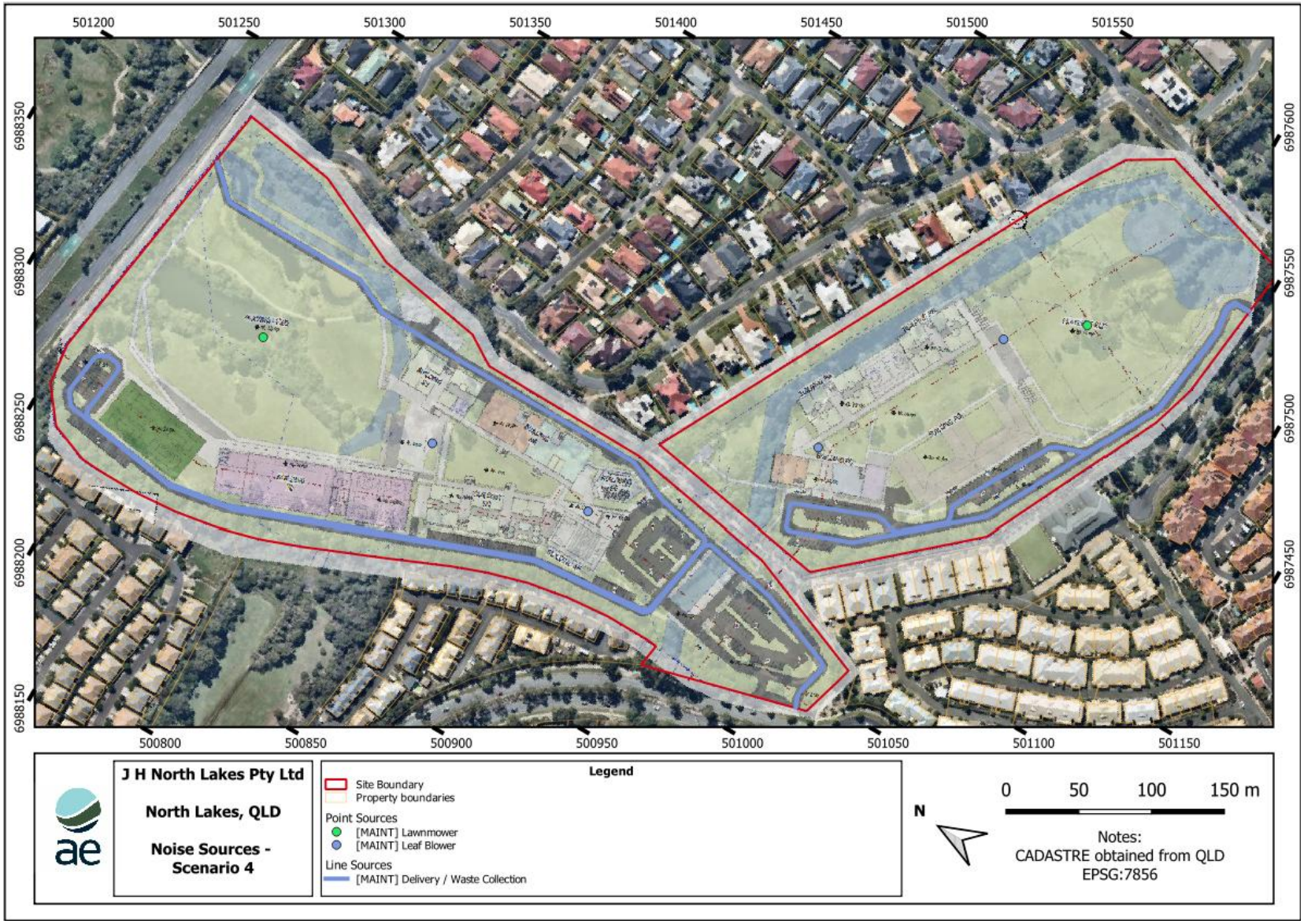


Figure 5: Noise Source Locations - Scenario 4

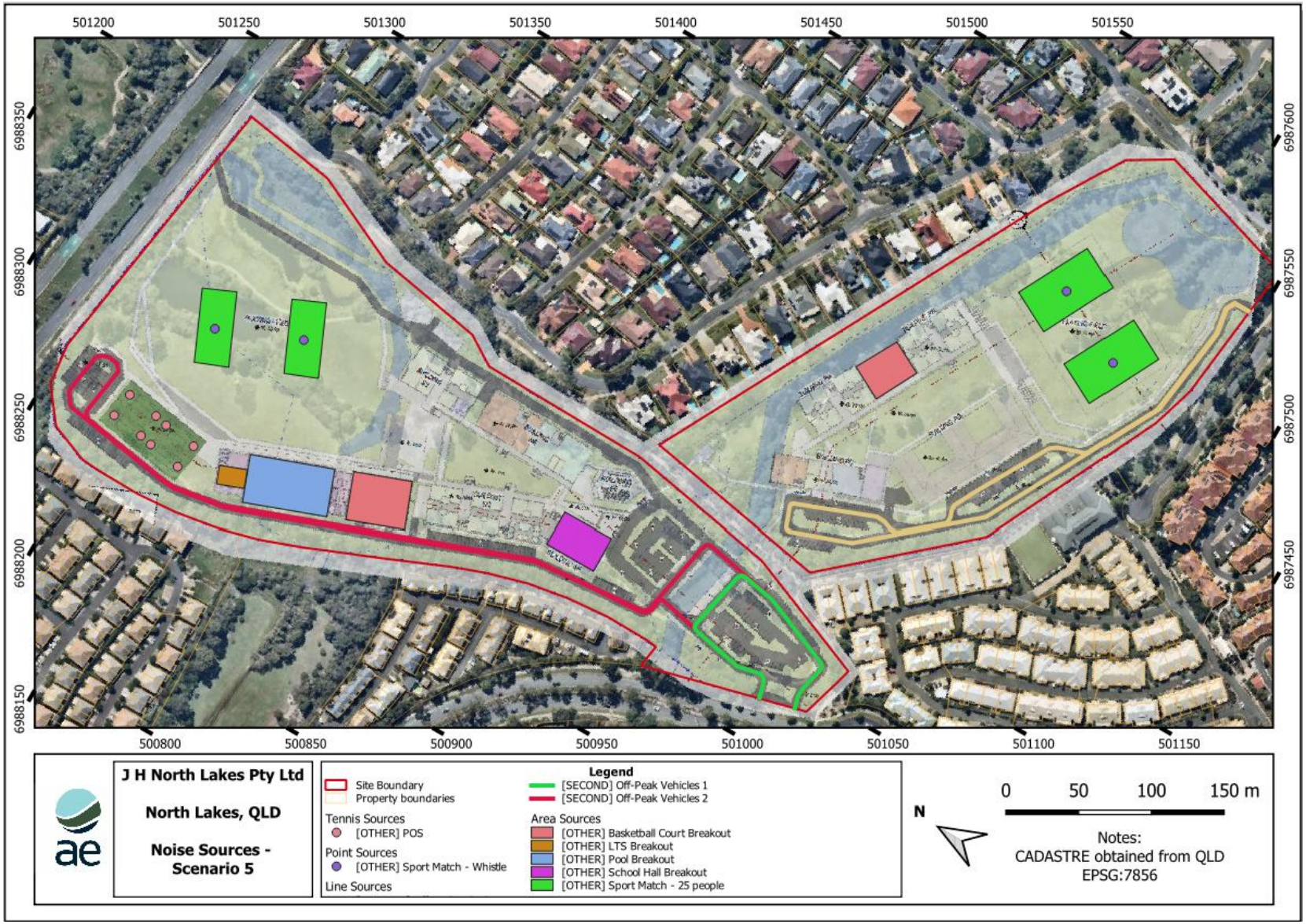


Figure 6: Noise Source Locations - Scenario 5

3 DESCRIPTION OF ENVIRONMENTAL VALUE

3.1 Location and Surrounding Land Use

The address of the Subject Site is 3 Bridgeport Drive, North Lakes, 4509, formally identified as Lot 2 on SP291250 and Lot 1 on SP148201. The Subject Site is located approximately 25 kilometres (km) north of Brisbane and falls within the Moreton Bay Regional Council (MBRC) Local Government Area (LGA). The Subject Site is approximately 15 hectares (ha) in total.

The Subject Site is located within the Mango Hill Infrastructure Development Control Plan and is therefore zoned Special Development along with all other premises in the North Lakes area. It is located amongst primarily urban low density residential developments, though several retirement communities also border the southern edge of the Subject Site. To the north, the sub-arterial road Diamond Jubilee Way borders the site. To the east, an open recreation space known as North Lakes Town Park borders the site.

The approximate location of the Subject Site is shown in a blue outline marked on the Mango Hill Structure Plan presented in Figure 7.

3.2 Topography

The local topography, as obtained from Elvis LiDAR, is illustrated in Figure 8. It can be seen in Figure 8 that the Subject Site is located in a low point compared to the surrounding topography.

3.3 Sensitive Receptors

There are existing dwellings located in the vicinity of the Subject Site, including those within the nearby retirement communities. Sensitive uses have been determined based on the land zoning, a site visit and aerial imaging. The nearest sensitive receptors are shown in Figure 7. Due to the spacing of receptors, not all are labelled, though the numbering of each receptors can be interpreted from the figure and the coordinates noted below in Table 4.

Table 4: Nearby Sensitive Receptors

Receptor ID	Description	Coordinates (EPSG 7856)		Assessable Height (m) [b)]
		Easting	Northing	
R1	Residential	500910	6988250	1.5 m, 4.5 m
R2	Residential	500933	6988216	1.5 m, 4.5 m
R3	Residential	500933	6988198	1.5 m, 4.5 m
R4	Residential	500933	6988180	1.5 m, 4.5 m
R5	Residential	500930	6988164	1.5 m, 4.5 m
R6	Residential	500927	6988147	1.5 m, 4.5 m
R7	Residential	500932	6988129	1.5 m, 4.5 m
R8	Residential	500933	6988123	1.5 m, 4.5 m
R9	Residential	500896	6988082	1.5 m, 4.5 m
R10	Residential	500962	6987966	1.5 m, 4.5 m
R11	Residential	500986	6987969	1.5 m, 4.5 m

Receptor ID	Description	Coordinates (EPSG 7856)		Assessable Height (m) [b)]
		Easting	Northing	
R12	Residential	500991	6987958	1.5 m, 4.5 m
R13	Residential	500996	6987945	1.5 m, 4.5 m
R14	Residential	501001	6987935	1.5 m, 4.5 m
R15	Residential	501005	6987923	1.5 m, 4.5 m
R16	Residential	501008	6987914	1.5 m, 4.5 m
R17	Residential	501011	6987902	1.5 m, 4.5 m
R18	Residential	501015	6987889	1.5 m, 4.5 m
R19	Residential	501017	6987876	1.5 m, 4.5 m
R20	Residential	501019	6987865	1.5 m, 4.5 m
R21	Residential	501020	6987854	1.5 m, 4.5 m
R22	Residential	501021	6987842	1.5 m, 4.5 m
R23	Residential	501023	6987816	1.5 m, 4.5 m
R24	Residential	500979	6987591	1.5 m, 4.5 m
R25	Residential	501010	6987588	1.5 m, 4.5 m
R26	Residential	501068	6987636	1.5 m
R27	Residential	501076	6987663	1.5 m
R28	Residential	501094	6987678	1.5 m
R29	Residential	501097	6987707	1.5 m
R30	Residential	501122	6987715	1.5 m
R31	Residential	501134	6987702	1.5 m
R32	Residential	501147	6987689	1.5 m
R33	Residential	501161	6987674	1.5 m
R34	Residential	501173	6987660	1.5 m
R35	Residential	501187	6987645	1.5 m
R36	Residential	501198	6987633	1.5 m
R37	Residential	501287	6987539	1.5 m, 4.5 m, 7.5 m
R38	Residential	501317	6987536	1.5 m, 4.5 m, 7.5 m
R39	Residential	501344	6987531	1.5 m, 4.5 m, 7.5 m
R40	Residential	501371	6987526	1.5 m, 4.5 m, 7.5 m
R41	Residential	501395	6987517	1.5 m, 4.5 m, 7.5 m
R42	Residential	501429	6987514	1.5 m, 4.5 m, 7.5 m
R43	Residential	501474	6987507	1.5 m, 4.5 m, 7.5 m
R44	Residential	501508	6987499	1.5 m, 4.5 m, 7.5 m
R45	Residential	501519	6987669	1.5 m, 4.5 m
R46	Residential	501498	6987729	1.5 m, 4.5 m
R47	Residential	501479	6987742	1.5 m, 4.5 m
R48	Residential	501466	6987748	1.5 m, 4.5 m
R49	Residential	501413	6987725	1.5 m, 4.5 m
R50	Residential	501399	6987734	1.5 m, 4.5 m
R51	Residential	501388	6987744	1.5 m, 4.5 m

Receptor ID	Description	Coordinates (EPSG 7856)		Assessable Height (m) [b)]
		Easting	Northing	
R52	Residential	501372	6987751	1.5 m, 4.5 m
R53	Residential	501362	6987758	1.5 m, 4.5 m
R54	Residential	501343	6987774	1.5 m, 4.5 m
R55	Residential	501324	6987789	1.5 m, 4.5 m
R56	Residential	501309	6987802	1.5 m, 4.5 m
R58	Residential	501277	6987819	1.5 m, 4.5 m
R57	Residential	501290	6987794	1.5 m, 4.5 m
R59	Residential	501254	6987823	1.5 m, 4.5 m
R60	Residential	501227	6987830	1.5 m, 4.5 m
R61	Residential	501218	6987839	1.5 m, 4.5 m
R62	Residential	501194	6987851	1.5 m, 4.5 m
R63	Residential	501171	6987858	1.5 m, 4.5 m
R64	Residential	501156	6987874	1.5 m, 4.5 m
R65	Residential	501150	6987895	1.5 m, 4.5 m
R66	Residential	501170	6987932	1.5 m, 4.5 m
R67	Residential	501171	6987951	1.5 m, 4.5 m
R68	Residential	501172	6987972	1.5 m, 4.5 m
R69	Residential	501182	6988005	1.5 m, 4.5 m
R70	Residential	501184	6988029	1.5 m, 4.5 m
R71	Residential	501187	6988041	1.5 m, 4.5 m
R72	Residential	501191	6988049	1.5 m, 4.5 m
R73	Residential	501201	6988089	1.5 m, 4.5 m
R74	Residential	501207	6988102	1.5 m, 4.5 m
R75	Residential	501212	6988116	1.5 m, 4.5 m
R76	Residential	501217	6988125	1.5 m, 4.5 m
R77	Residential	501228	6988162	1.5 m, 4.5 m
R78	Residential	501227	6988186	1.5 m, 4.5 m
R79	Residential	501234	6988198	1.5 m, 4.5 m
R80	Residential	501247	6988273	1.5 m, 4.5 m
R81	Residential	501066	6988303	1.5 m, 4.5 m
R82	Residential	501052	6988309	1.5 m, 4.5 m
R83	Residential	501038	6988306	1.5 m, 4.5 m
R84	Residential	501028	6988309	1.5 m, 4.5 m
R85	Residential	501018	6988313	1.5 m, 4.5 m
R86	Residential	501005	6988311	1.5 m, 4.5 m
R87	Residential	500991	6988312	1.5 m, 4.5 m
R88	Residential	500978	6988314	1.5 m, 4.5 m
R89	Residential	500964	6988320	1.5 m, 4.5 m
R90	Residential	500952	6988318	1.5 m, 4.5 m
R91	Residential	500944	6988320	1.5 m, 4.5 m

Receptor ID	Description	Coordinates (EPSG 7856)		Assessable Height (m) [b)]
		Easting	Northing	
R92	Residential	500928	6988320	1.5 m, 4.5 m
O1	Open Space	501494	6987600	1.5 m
O2	Open Space	500993	6987701	1.5 m
O3	Open Space	500920	6988044	1.5 m
O4	Open Space	501137	6988290	1.5 m

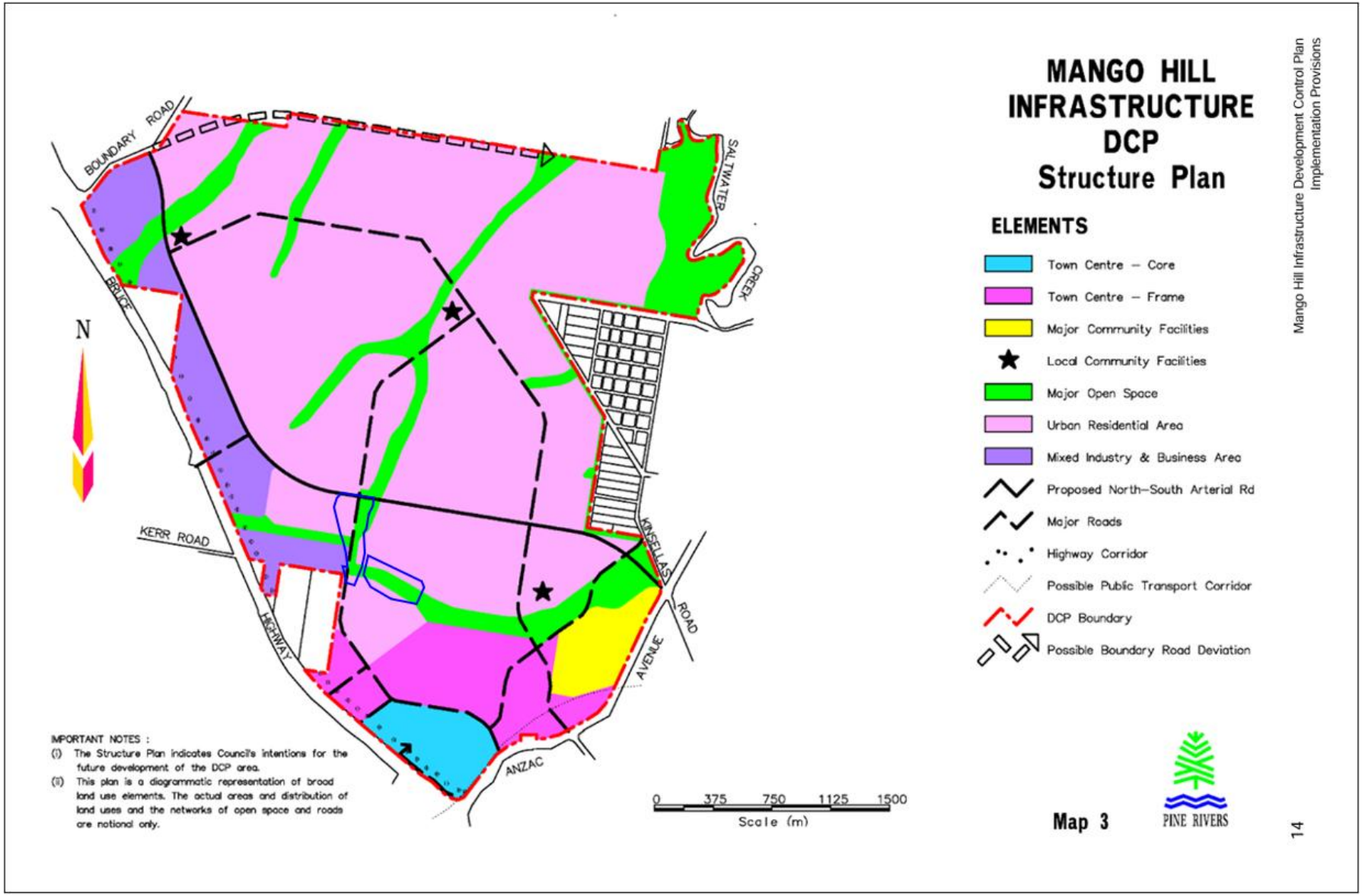


Figure 7: Surrounding Land Use

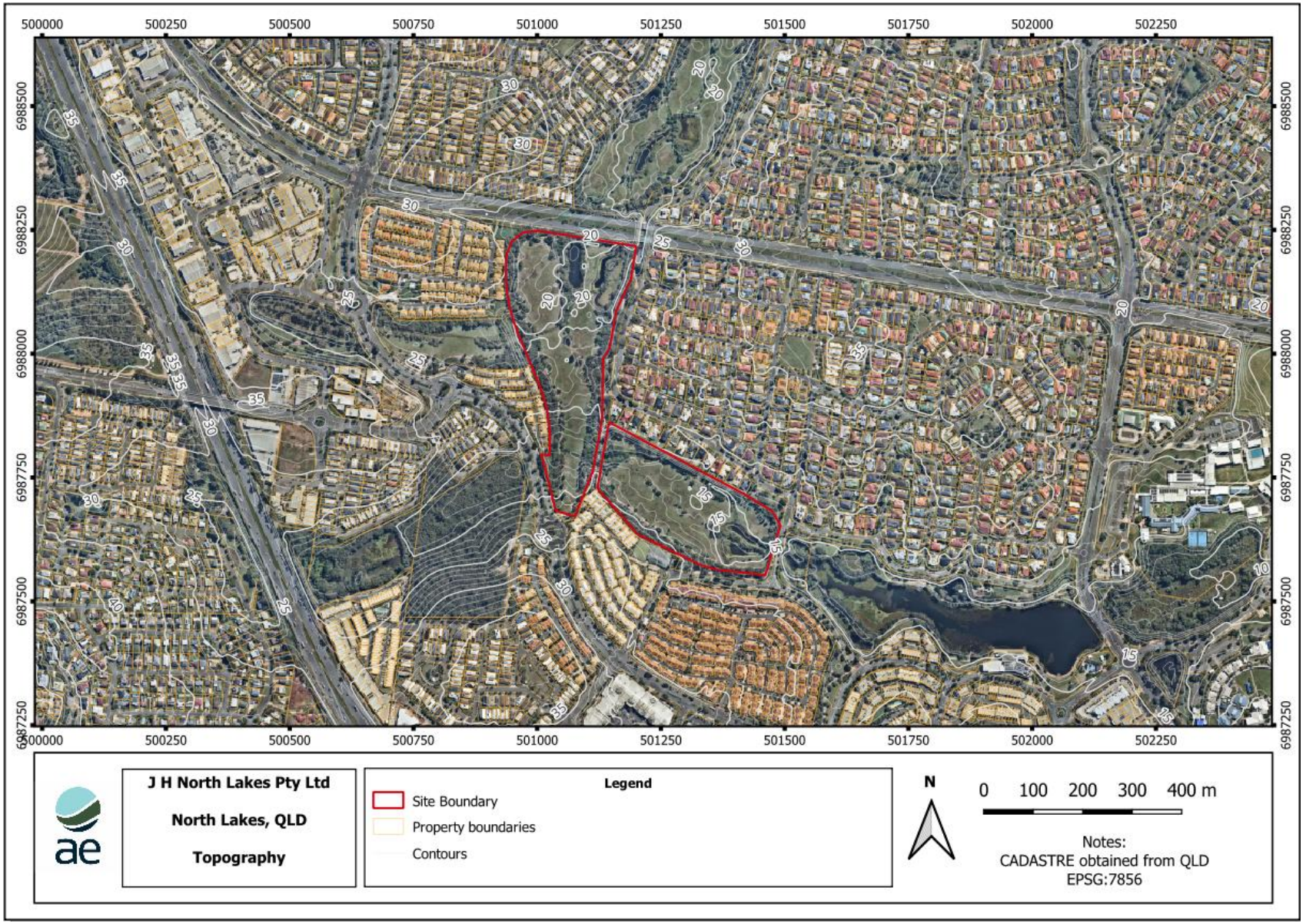


Figure 8: Topography

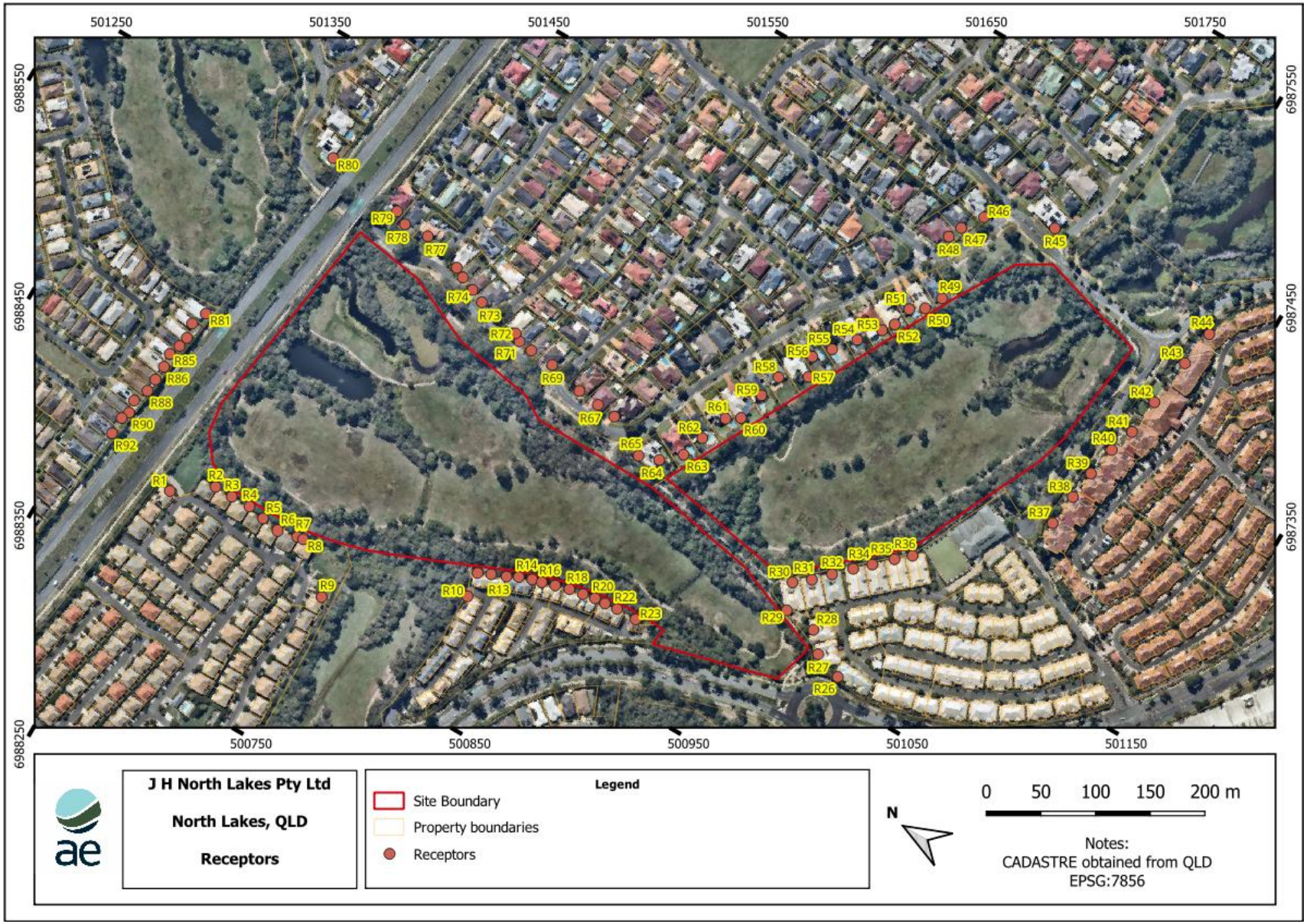


Figure 9: Sensitive Receptor Locations

3.4 Existing Noise Environment

To quantify the existing noise environment, background noise monitoring was undertaken at three locations. The key details of each Monitoring Location (ML) are summarised in Table 5, though detailed noise monitoring information is presented in Appendix A.

Table 5: Summary of Noise Monitoring Locations

Location	Street Address	Acoustic Environment
ML1	26 Knox Street	Underlying noise level dominated by traffic along Diamond Jubilee Way located approximately 50 metres away behind one row of houses. The day and evening RBLs [a)] are elevated due to traffic noise, whereas the night RBL is lower and more typical of an urban low density residential area.
ML2	25 Chilton Crescent	Typical suburban residential location, with ambient noise levels dictated by distant traffic, and localised noise from domestic activities and birds. The day and evening RBLs [a)] are elevated due to these sources, whereas the night RBL is lower during the period of low local activity.
ML3	53 Attenborough Circuit	Underlying noise level dominated by traffic along Plantation Road, Endeavour Boulevarde, and the Bruce Highway. The monitor was located approximately 40 metres from the nearest busy roadway behind one row of houses. The day and evening RBLs are elevated due to traffic noise. The night RBL is lower, though still somewhat elevated due to noise from the Bruce Highway.

a) RBL is the rating background level or overall background noise level for each period.

From the above information and the observations made on-site, the receptors identified in Section 3.3 can be categorised into various noise catchments represented by each of the monitoring locations. These catchments are presented alongside the monitoring locations in Figure 10.

Two 'Transition' areas are also marked, where certain receptors do not neatly fit into any of the main catchments characterised by the background monitoring presented in Table 5., or fit into more than one catchment. In these instances, a conservative assumption will be made that considers the prevailing background noise level to be the lower of the two adjoining catchments.

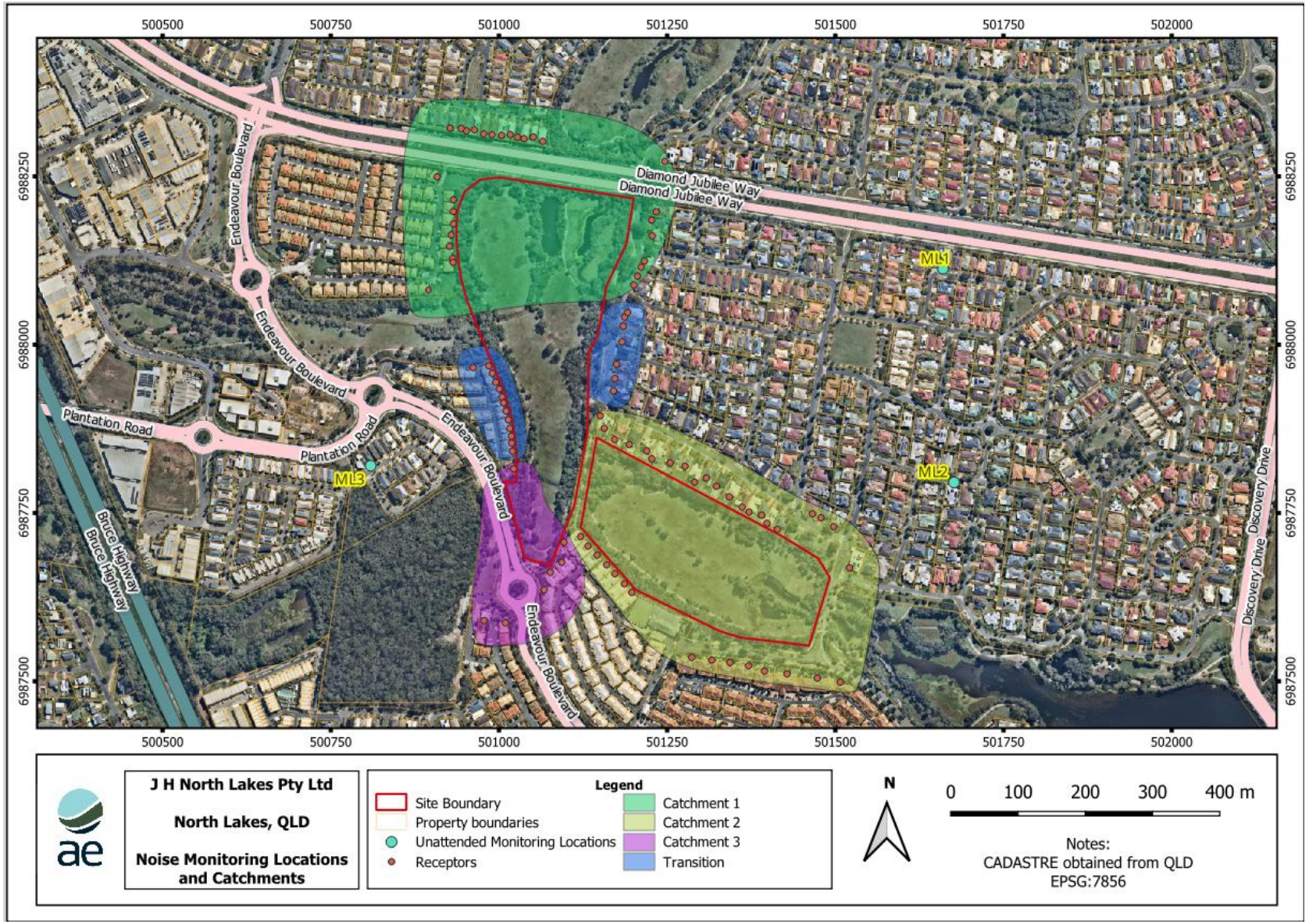


Figure 10: Noise Monitoring Locations and Catchments

Noise measurements were undertaken in accordance with the requirements of Australian Standard AS 1055-2018 *'Acoustics – Description and measurement of environmental noise'*. The instruments were situated in free-field positions and a data logging time of 15-minutes was adopted for the monitoring. The microphones were positioned at a height of 1.5 m above ground level and fitted with a windshield throughout the measurements. The serial number and calibration information for the instrument, and daily measurement and time history data are also presented in Appendix A.

Noise monitoring has the potential to be influenced by rainfall and wind speeds exceeding 5 m/s. A review of meteorological data from the portable weather station co-located at ML2 indicates that there were some instances of rainfall affecting measurements. The measured noise data during these periods has been excluded.

Review of the 1/3 octave noise levels identified that some data was affected by extraneous noise sources such as insects and frogs and the monitoring data has consequently been adjusted to remove this influence.

A summary of the noise levels for each period across various statistical noise parameters are presented in Table 6.

Table 6: Summary of Noise Monitoring Results

Period	Noise Metric (dB(A))					
	L_{Amax}	L_{A1}	L_{A10}	L_{A90}	L_{Aeq}	RBL[a)]
ML1 – 26 Knox Street						
Day (7 am to 6 pm)	88	63	55	46	55	45
Evening (6 pm to 10 pm)	83	55	50	45	49	44
Night (10 pm to 7 am)	86	52	46	40	48	37
ML2 – 25 Chilton Crescent						
Day (7 am to 6 pm)	95	60	50	42	52	42
Evening (6 pm to 10 pm)	91	54	47	42	49	41
Night (10 pm to 7 am)	80	49	44	39	45	35
ML3 – 53 Attenborough Circuit						
Day (7 am to 6 pm)	97	62	57	52	57	50
Evening (6 pm to 10 pm)	700	59	55	51	55	50
Night (10 pm to 7 am)	99	56	52	46	53	41

a) RBL is the rating background level or overall background noise level for each period.

4 ASSESSMENT CRITERIA

4.1 Moreton Bay Regional Council Planning Scheme 2016

The Moreton Bay Regional Council Planning Scheme 2016 (MBPS) is the local categorising instrument against which the proposed development will be assessed. The relevant assessment benchmarks of the MBPS applicable to this development application and to noise, are detailed in Section 4.1.2.

4.1.1 Mango Hill Infrastructure Development Control Plan No 14

A review of the Mango Hill Infrastructure Development Control Plan (MHIDCP) reveals no detailed acoustic criteria. However, it is repeatedly made clear in both the MHIDCP and the supporting Precinct Plans and Sector Plans (shown in Figure 11) that there is an expectation that the interface between local community facilities and residential development ensures that the affect on the amenity of the residential area is minimised.

Despite specific acoustic criteria not being detailed, both the Environmental Protection Policy (Noise) (EPP(Noise)) and the overarching council policies are referenced as the appropriate guidelines for ensuring that an acceptable level of acoustic amenity is achieved.

4.1.2 Planning Scheme Policy 17 – Noise

Schedule 6.17 of the MBPS provides a general policy for noise assessments. Table 7 extracts the relevant acoustic requirements for general noise-generating use to support the overall objectives of the MBPS.

Table 7: MBPS Criteria (Extract from PSP17, Section 5)

Both column 1 and 2 are applicable	Column 1 – Intrusive noise	Column 2 – Acoustic amenity criteria		
Criteria location	$L_{Aeq,adj,T}$ is not greater than the Rating Background Level (RBL) for Day Evening and Night plus the value in column 1 for the relevant criteria location. These limits are component levels "T" is either a relevant representative 15 minutes or if the duration of the noise occurs for less than 15 minutes the duration of the noise source.	Day, evening and night $L_{Aeq,adj,1hr}$ are not greater than the values in column 2 for the relevant criteria location.		
		Day	Evening	Night
At the boundary of a: ▪ General residential zone, ▪ Rural residential zone, ▪ Rural zone, ▪ Emerging community zone ▪ Interim residential precinct (Redcliffe Kippa-Ring Local Plan) ▪ Rural living precinct (Caboolture West Local Plan) ▪ Urban living precinct (Caboolture West Local Plan) ▪ Township zone (Residential precinct)	3 dB(A)	55 dB(A)	45 dB(A)	40 dB(A)

The derived noise criteria is presented in Table 8.

Table 8: Derived Project-Specific Council Criteria

Receptor Type and ID [a)]	Noise Criteria ($L_{Aeq,15\text{-}min}$ dB(A))		
	Day	Evening	Night
Catchment 1 Residential (R1 – R22, R73 – R92)			
Intrusive	45 + 3 = 48	44 + 3 = 47	37 + 3 = 40
Amenity	55	45	40
Catchment 2 Residential (R30 – R72)			
Intrusive	42 + 3 = 45	41 + 3 = 44	35 + 3 = 38
Amenity	55	45	40
Catchment 3 Residential (R23 – R29)			
Intrusive	50 + 3 = 53	50 + 3 = 53	41 + 3 = 44
Amenity	55	45	40

a) See Table 4.
b) The applicable criteria nominated to preserve the existing amenity of open spaces is nominated as RBL + 0 based on the measured noise levels in Table 6.



Figure 11: Map of Precinct / Sector Plans

4.2 Environmental Protection (Noise) Policy 2019

The EPP (Noise) provides acoustic quality objectives for a range of receptors with respect to the potential impact of an activity upon on the health, well-being and biodiversity of the receptors. Specifically, the objectives are intended to enhance or protect the following environmental values:

- The qualities of the acoustic environment that are conducive to protecting the health and biodiversity of ecosystem;
- The qualities of the acoustic environment that are conducive to human health and wellbeing, including by ensuring a suitable acoustic environment for individuals to do any of the following:
    - Sleep;
    - Study or learn; and
    - Be involved in recreation, including relaxation and conversation; and
- The qualities of the acoustic environment that are conducive to protecting the amenity of the community.

The acoustic quality objectives as detailed in the EPP (Noise) and applicable to sensitive receptors nearby the Subject Site, are reproduced in Table 9.

Table 9: EPP (Noise) Schedule 1 Acoustic Quality Objectives

Sensitive Receptor	Time of Day	Acoustic Quality Objectives (dB(A)) [a]			Environmental Value
		$L_{Aeq,adj,1\text{-hour}}$	$L_{A10,adj,1\text{-hour}}$	$L_{A1,adj,1\text{-hour}}$	
Residence (for outdoors)	Daytime and evening	50	55	65	Health and wellbeing
Residence (for indoors)	Daytime and evening	35	40	45	Health and wellbeing
	Night-time	30 (37)	35 (42)	40 (47)	Health and wellbeing, in relation to the ability to sleep
Park or garden that is open to the public (whether or not on payment of an amount) for use other than for sport or organised entertainment	Anytime	the level of noise that preserves the amenity of the existing park or garden			Community amenity

a) Acoustic quality objectives measured at the receptor. Noise levels in brackets ( ) denote the resultant external noise criterion, assuming a 7 dB(A) facade transmission loss through open windows.

Where an internal noise level is specified by EPP (Noise), an external noise level has also been established – and denoted in brackets in Table 9 – based on an assumed 7 dB(A) facade

transmission loss (considered slightly conservative and in-line with standard practice for a typical QLD home with open windows).

The adopted project noise level criteria for sensitive receptors to the Subject Site, based on the EPP (Noise) acoustic quality objectives are detailed in Table 10.

Table 10: Project Noise Level Criteria (Outdoors)

Receptor Type and ID [a]	Noise Criteria ($L_{Aeq,15\text{-}min}$ dB(A))		
	Day	Evening	Night
Residential (all)	50	50	37
Catchment 1 Open Space [b] (O3 – O4)	45	44	37
Catchment 2 Open Space [b] (O1)	42	41	35
Catchment 3 Open Space [b] (O2)	50	50	41

a) See Table 4.
b) The applicable criteria nominated to preserve the existing amenity of open spaces is nominated as RBL + 0 based on the measured noise levels in Table 6.

The EPP (Noise) provides amenity objectives which do not take into consideration the surrounding environment. The QLD Environmental Protection (Noise) Policy 2008 Explanatory Notes for SL 2008 No. 442 states:

> *It is not intended that, as part of achieving the acoustic quality objectives, any part of the existing acoustic environment be allowed to deteriorate. It is intended that the acoustic quality objectives be progressively achieved as part of achieving the purpose of this policy over the long term [Section 8].*
>
> *And*
>
> *The acoustic quality objectives are to inform the decision-making process including any conditions relating to noise levels in relation to the decision. The objectives assist in identifying whether the environmental values are protected. However, meeting the objectives does not always mean that the environmental values are protected and not meeting the objectives does not always mean that the environmental values are not protected [Section 8].*

Therefore, while the acoustic quality objectives are useful for assessment purposes, it is noted that they are in fact, objectives, rather than firm limits.

In addition to the above acoustic quality objectives, the EPP (Noise) requires that, where reasonable to do so, background creep should be prevented or minimised [Section 9(2)(b)]. As such, the Acoustic Quality Objectives are directly compared with the assessment criteria derived from the MBPS in Section 4.1.2, with the lower of the two being used as the final assessment criteria. As the MBPS criteria is guided by the measured background noise levels, Assured Environmental is of the opinion that consideration for background creep is satisfactorily addressed through the use of the MRPS criteria.

4.3 Consolidation of Noise Criteria

The noise criteria for each time-period (day, evening and night) at sensitive receptors around the Subject Site have been determined after reviewing both the council and EPP(Noise) requirements and selecting the lowest criterion for each receptor in each period. The $L_{Aeq,15\text{-}min}$ metric from the council criteria is adopted on the basis that it is more conservative than the

$L_{Aeq,1\text{-}hour}$ metric used in the EPP(Noise). Compliance with the $L_{Aeq,15\text{-}min}$ criteria means the $L_{Aeq,1\text{-}hour}$ criteria is also achieved.

For this assessment, the noise criteria in Table 11 have been adopted and are listed according to the receptor type and ID (per Table 4).

Table 11: Summary Operational Noise Criteria

Receptor Type and ID	Assessment Criteria ($L_{Aeq,15\text{-}min}$)		
	Day	Evening	Night
Catchment 1 (inc. Transition)			
Residential (R1 – R22, R73 – R92)	48 [b)]	45 [b)]	37 [a)]
Open Space (O3 – O4)	45 [a)]	44 [a)]	37 [a)]
Catchment 2 (inc. Transition)			
Residential (R30 – R72)	45 [b)]	44 [b)]	37 [a)]
Open Space (O1)	42 [a)]	41 [a)]	35 [a)]
Catchment 3			
Residential (R23 – R29)	50 [a)]	45 [b)]	37 [a)]
Open Space (O2)	50 [a)]	50 [a)]	41 [a)]

a) EPP (Noise) Acoustic Quality Objectives.
b) MBPS Criteria.

4.4 Discussion

The derived noise criteria are based on planning guidelines primarily focused on industrial and commercial noise sources, rather than being specifically suited to schools. The noise emissions from schools are inherently different, involving intermittent and time-limited activities, with a substantial amount of human-generated noise. Noise sources associated with schools (students, vehicles, mechanical plant, and maintenance activities) share characteristics with the typical noise environment in residential communities.

Furthermore, school developments serve as essential components of residential communities. As community facilities, some level of noise is typically both expected and accepted by the surrounding community.

As no other prescribed criteria is available that is better suited to an assessment of a school, these above criteria will be used throughout the assessment. However, given the discrepancies in their intention noted above, Assured Environmental recognises that they may be overly strict for the intended use, and detailed discussion of predicted results including any exceedances will be made. This aligns with the recognised acoustic practice (including Australasian Association of Acoustical Consultants (AAAC) guidance) and established planning outcomes in Queensland, where the acceptability of school-generated noise is appropriately assessed through a reasonableness-based framework, rather than strict numerical compliance alone.

5 ASSESSMENT METHODOLOGY

5.1 Software

For the purposes of predicting impacts associated with operational noise emissions from the proposed development on nearby sensitive receptors, noise modelling of the sources was completed using the proprietary software CadnaA (Version 2026 build 213.5606) developed by DataKustik. CadnaA incorporates the influence of meteorology, terrain, ground type and air absorption in addition to source characteristics to predict noise impacts at receptor locations.

The model is utilised to assess the potential noise emissions from the Subject Site under a range of operating scenarios and meteorological conditions. The noise modelling also allows investigation of possible noise management solutions, in the event that non-compliance with the assessment criterion is predicted.

5.2 Meteorology

Assured Environmental has considered the influence of meteorological effects on noise propagation, specifically, temperature inversions and / or gradient winds. The meteorological conditions were selected to predict the worst-case noise levels at all receptors during all seasons and time periods and are shown in Table 12.

Table 12: Noise Enhancing Meteorological Conditions

Time Period	Meteorological Parameters		
	Stability Class [a]	Wind Speed (m/s) [b]	Wind Direction [c]
Day (7 am to 6 pm)	D	3	Worst-case
Evening (6 pm to 10 pm)	D	3	Worst-case
Night (10 pm to 7 am)	F	2	Worst-case

a) Pasquill Gifford Atmospheric Stability Class.
b) At 10 m, above ground level (AGL).
c) Wind direction source to receptor.

5.3 Model Configuration

Table 13 summarises the model configuration used for the modelling.

Table 13: Model Configuration

Parameter	Approach
Standards	CONCAWE
Time Periods	Day (7 am to 6 pm) Evening (6 pm to 10 pm) Night (10 pm to 7 am)
Digital Terrain	LIDAR data at 1 m intervals. Triangulation calculation applied.
Ground Absorption	Overall ground absorption set for moderately hard ground (0.2). Aerial mapping and plans used to identify soft ground (1.0).

6 OPERATIONAL NOISE ASSESSMENT

6.1 Overview

The predicted operational noise levels at nearby sensitive receptors to the Subject Site are based on the equipment details (SWL and usage) Table 3 and the methodology described in Section 5.

6.2 Predicted Noise Levels

This section presents the predicted noise levels for each assessment scenario per Section 2.3. The results are limited to the most noise-affected receptors in a variety of directions around the Subject Site, with full tables of receptor results in Appendix C. All results are guided by the sound power levels detailed in Table 3 and the noise controls detailed in Section 6.4.

Moderate exceedances are predicted for several receptors in several assessment scenarios. In light of the discussion regarding the appropriateness of the assessment criteria (see Section 4.4), these exceedances have been evaluated to determine the likely risk to surrounding receptors.

6.2.1 Scenario 1: Pickup / Dropoff

Predicted noise levels at key noise-affected receptors for Scenario 1 are presented in Table 14. Based on these results and the overall results shown in Appendix C, the following is noted:

- Exceedances of up to 5 dB(A) are predicted;
- The greatest exceedance occurs at ground floor receptors within the North Lakes Retirement Resort;
- These exceedances are primarily the result of vehicle movements within the internal school roads associated with pickup and dropoff activities.

Table 14: Predicted Receptor Noise Levels – Scenario 1

Receptor	Predicted Noise Levels, Day $L_{Aeq,\ 15\text{-}mins}$, dB(A))	Criteria, Day dB(A)	Comply (Y/N)
R7 FF	43	48	Y
R11 FF	46	48	Y
R22 FF	50	48	N
R29 GF	54	50	N
R36 GF	50	45	N
R40 SF	49	45	N
R50 FF	46	45	N
R63 FF	47	45	N
R68 FF	43	45	Y
R75 FF	39	48	Y
R86 FF	36	48	Y
O1	47	42	N

Receptor	Predicted Noise Levels, Day $L_{Aeq, 15\text{-}mins}$, dB(A))	Criteria, Day dB(A)	Comply (Y/N)
O2	48	50	Y
O3	34	45	Y
O4	32	45	Y

a) GF = Ground Floor; FF = First Floor, SF = Second Floor

Noise associated with student pick-up and drop-off is characterised by short-duration vehicle movements and transient events (e.g. arrivals, departures, door closures and acceleration), rather than continuous noise emissions. Though exceedances of up to 5 dB(A) are predicted, these levels occur over limited periods coinciding with typical commuter peak times and are not sustained across the day. In this context, the noise is more appropriately considered analogous to localised road traffic activity than to a continuous noise source regulated by intrusive criteria. Given its transient nature, limited daily duration, and alignment with existing peak-period traffic conditions, the predicted exceedances are considered reasonable and consistent with normal community expectations for school-related access.

6.2.2 Scenario 2: Recess / Lunch

Predicted noise levels at key noise-affected receptors for Scenario 2 are presented in Table 15. Based on these results and the overall results shown in Appendix C, the following is noted:

- Exceedances of up to 2 dB(A) are predicted;
- The greatest exceedance occurs at ground floor receptors within the North Lakes Retirement Resort;
- These exceedances are primarily the result of students playing in external areas.

Table 15: Predicted Receptor Noise Levels – Scenario 2

Receptor	Predicted Noise Levels, Day $L_{Aeq, 15\text{-}mins}$, dB(A))	Criteria, Day dB(A)	Comply (Y/N)
R7 FF	45	48	Y
R11 FF	43	48	Y
R22 FF	30	48	Y
R29 GF	37	50	Y
R36 GF	40	45	Y
R40 SF	42	45	Y
R50 FF	45	45	Y
R63 FF	38	45	Y
R68 FF	45	45	Y
R75 FF	47	48	Y
R86 FF	44	48	Y
O1	39	42	Y
O2	27	50	Y

Receptor	Predicted Noise Levels, Day $L_{Aeq, 15\text{-}mins}$, dB(A))	Criteria, Day dB(A)	Comply (Y/N)
O3	38	45	Y
O4	40	45	Y

a) GF = Ground Floor; FF = First Floor, SF = Second Floor

Noise during recess and lunch periods is associated with outdoor student play and social interaction and is inherently intermittent and time-limited. The predicted exceedances occur during short, defined periods of the school day and are not continuous. The dominant noise source is student voice, which is non-tonal and variable in character, and differs fundamentally from steady mechanical or industrial noise sources typically regulated by intrusive criteria. Given the limited duration, daytime occurrence, and the established expectation of such activities within an educational setting, the predicted exceedances are considered reasonable and consistent with accepted community expectations for school operations.

6.2.3 Scenario 3: Teaching Period

Predicted noise levels at key noise-affected receptors for Scenario 3 are presented in Table 16. Based on these results and the overall results shown in Appendix C, the following is noted:

- Exceedances of up to 2 dB(A) are predicted;
- The greatest exceedance occurs at first floor receptors on Bass Circuit; and
- These exceedances are primarily the result of outdoor class activities, particularly PE classes on the northwest tennis courts.

Table 16: Predicted Receptor Noise Levels – Scenario 3

Receptor	Predicted Noise Levels, Day $L_{Aeq, 15\text{-}mins}$, dB(A))	Criteria, Day dB(A)	Comply (Y/N)
R7 FF	50	48	N
R11 FF	44	48	Y
R22 FF	32	48	Y
R29 GF	29	50	Y
R36 GF	34	45	Y
R40 SF	37	45	Y
R50 FF	39	45	Y
R63 FF	39	45	Y
R68 FF	41	45	Y
R75 FF	38	48	Y
R86 FF	40	48	Y
O1	35	42	Y
O2	29	50	Y
O3	41	45	Y
O4	33	45	Y

a) GF = Ground Floor; FF = First Floor, SF = Second Floor

Noise during teaching periods, including occasional outdoor physical education activities, is predicted to be up to approximately 2 dB above the adopted criteria at nearby receivers. These exceedances are minor in magnitude and, in practical terms, are within the typical range of acoustic variability and prediction uncertainty. Teaching-related noise is generally intermittent or low-level in nature, with outdoor activities occurring periodically rather than continuously. Given the small magnitude of exceedance, the daytime-only operation, and the normal and expected nature of these activities within a school environment, the resulting impacts are considered negligible and do not represent an adverse effect on residential amenity.

6.2.4 Scenario 4: Maintenance Activities

Predicted noise levels at key noise-affected receptors for Scenario 4 are presented in Table 17. Based on these results and the overall results shown in Appendix C, the following is noted:

- Exceedances of up to 8 dB(A) are predicted;
- The greatest exceedance occurs at first floor receptors on Copeland Drive; and
- These exceedances are primarily the result of groundskeeping activities in the areas nearest those receptors, i.e. the sports field.

Table 17: Predicted Receptor Noise Levels – Scenario 4

Receptor	Predicted Noise Levels, Day $L_{Aeq,\ 15\text{-}mins}$, dB(A))	Criteria, Day dB(A)	Comply (Y/N)
R7 FF	48	48	Y
R11 FF	51	48	N
R22 FF	42	48	Y
R29 GF	48	50	Y
R36 GF	45	45	Y
R40 SF	49	45	N
R50 FF	53	45	N
R63 FF	46	45	N
R68 FF	44	45	Y
R75 FF	46	48	Y
R86 FF	44	48	Y
O1	48	42	N
O2	34	50	Y
O3	37	45	Y
O4	38	45	Y

a) GF = Ground Floor; FF = First Floor, SF = Second Floor

Maintenance activities are inherently intermittent, of limited duration, and will be confined to standard daytime hours. The noise generated is consistent with typical residential and community maintenance activities regularly experienced within suburban environments, as well as the previous land use for the site, being as a golf course and outdoor sport and recreation area. It does not represent a continuous or persistent source of impact. With the implementation of reasonable management measures, such as restricting hours of operation

and avoiding prolonged operation adjacent to sensitive receivers, the resulting impacts are considered acceptable and consistent with established acoustic practice.

6.2.5 Scenario 5: After-hours and Community Uses

Predicted noise levels at key noise-affected receptors for Scenario 5 are presented in Table 18. Based on these results and the overall results shown in Appendix C, the following is noted:

- Exceedances of up to 3 dB(A) are predicted during the day, and up to 5 dB(A) during the evening;
- The greatest exceedances occur at ground floor receptors within the North Lakes Retirement Resort and at first floor receptors on Bass Circuit; and
- These exceedances are primarily the result of vehicle movements within the internal school roads associated with off-peak vehicle movements, and from outdoor activities, particularly on the northwest tennis courts.

Table 18: Predicted Receptor Noise Levels – Scenario 5

Receptor	Predicted Noise Levels $L_{Aeq, 15\text{-}mins}$, dB(A))		Criteria, dB(A)		Comply (Y/N)
	Day	Evening	Day	Evening	
R7 FF	51	50	48	45	N / N
R11 FF	48	44	48	45	Y / Y
R22 FF	49	46	48	45	N / N
R29 GF	48	39	50	45	Y / Y
R36 GF	44	39	45	44	Y / Y
R40 SF	45	43	45	44	Y / Y
R50 FF	46	46	45	44	N / N
R63 FF	41	38	45	44	Y / Y
R68 FF	42	42	45	44	Y / Y
R75 FF	43	42	48	45	Y / Y
R86 FF	43	42	48	45	Y / Y
O1	43	41	42	41	N / Y
O2	43	39	50	50	Y / Y
O3	43	42	45	44	Y / Y
O4	37	36	45	44	Y / Y

a) GF = Ground Floor; FF = First Floor, SF = Second Floor

Noise associated with after-hours and community use of the school facilities is predicted to exceed the adopted criteria by up to approximately 3 dB during the daytime and up to approximately 5 dB during the evening period at nearby receivers. These activities are expected to occur on an intermittent and managed basis rather than as continuous daily operations. While the evening exceedances warrant consideration due to the increased sensitivity of this period, the predicted levels remain moderate in magnitude and are associated with community-oriented uses of educational infrastructure, which are a common and supported function of such facilities. Subject to appropriate management controls as detailed in Section 6.4, the resulting impacts are considered acceptable.

6.3 Noise Isopleths

Noise isopleths of the predicted operational noise levels from the Subject Site are presented in Appendix B.

6.4 Recommendations

The following measures are recommended to manage noise emissions from the Subject Site:

- Ensure all mechanical plant is suitable screened from residential receptors. As a first priority, mechanical plant should be located such that it is screened from receptors by the proposed buildings. Where this is not possible, it should be screened using acoustic walls/enclosure constructed without gaps of solid materials achieving a minimum surface density of 12 kg/m^2.
- Noise barriers are to be installed along portions of the southern boundary of the primary school as shown in Figure 12. The barriers are to be constructed without gaps of solid materials achieving a minimum surface density of 12 kg/m^2.
- Maintenance activities are to occur during the hours of 7:00 am to 6:00 pm only, follow a regular schedule, and be limited in duration to lessen the perceived impact on nearby receptors.
- After-hours activities are to be limited to reasonable daytime and early evening periods, with no regular programmed use beyond 9:00 pm. Where practicable, activities should taper in intensity toward the evening period.
- No use of external amplification systems, including PA systems or music playback, should occur in outdoor areas during the evening period (6:00 pm to 10:00 pm).
- Organised sports and group activities during evening periods should be located away from site boundaries adjoining residential receivers, where practicable. Preferential use of centrally located or shielded areas of the site is encouraged.
- After-hours and community activities should be intermittent and managed, rather than continuous or high-frequency occurrences. Scheduling should avoid extended back-to-back bookings that would result in prolonged noise exposure at nearby receivers.
- Users of the facility should be made aware of nearby residential receivers and encouraged to minimise unnecessary noise (e.g. shouting, congregation near boundaries). This may be supported by additional signage.

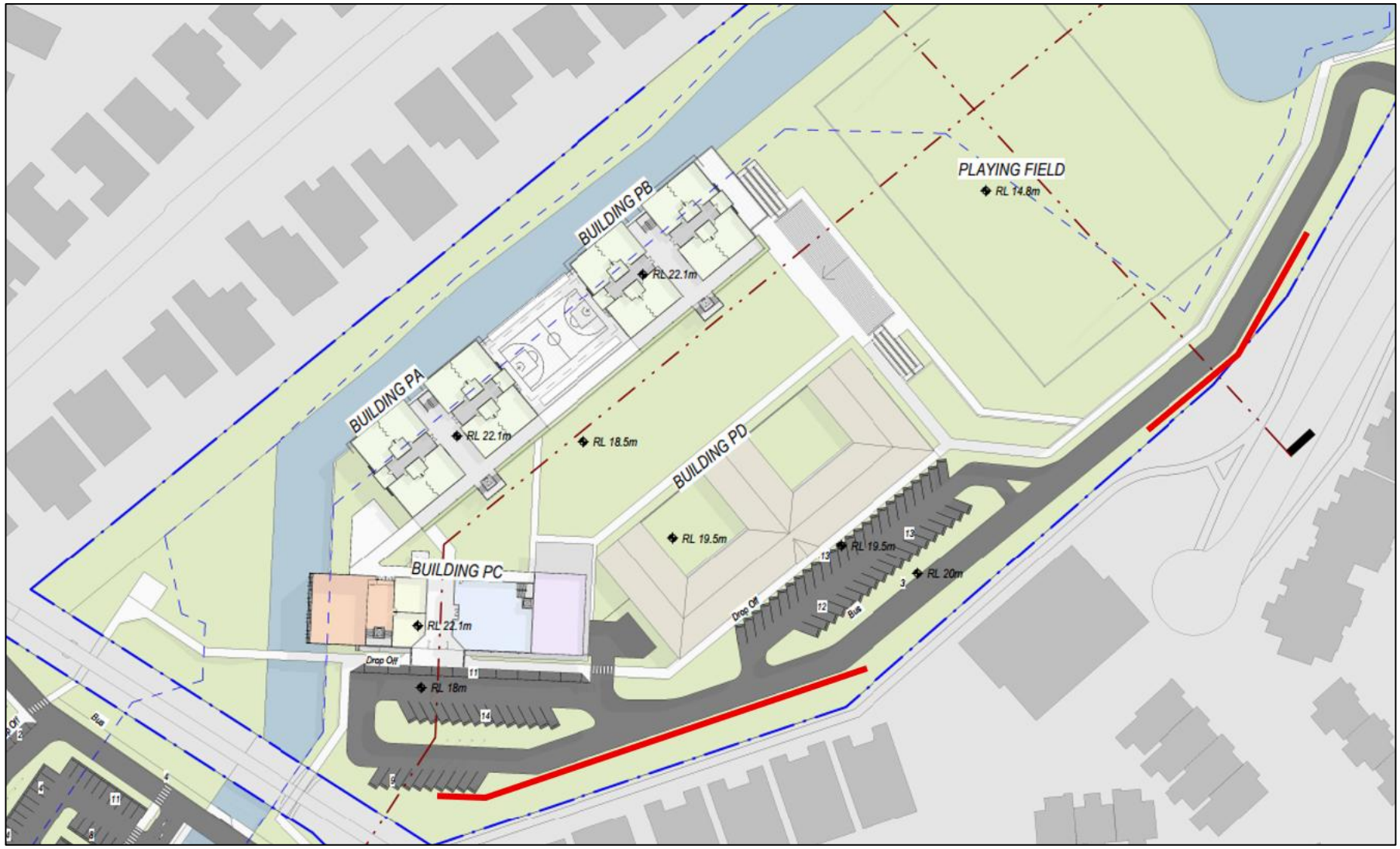


Figure 12: Noise Barrier Location (shown in red)

7 CONCLUSION

H North Lakes Pty Ltd c/- GPC is seeking development consent for a proposed school to be located at 3 Bridgeport Drive, North Lakes

This noise impact assessment was prepared to evaluate the potential impacts associated with a range of typical uses of the proposed school on surrounding sensitive receptors.

Environmental noise data has been collected to inform suitable assessment criteria at nearby sensitive receptors to the Subject Site and noise level predictions have been made using 3-D computational software.

The results of the predictive noise modelling demonstrate that an acceptable acoustic outcome is reached following the implementation of suitable noise controls. Though the considered scenarios showed the potential for exceedances at several receptors, it is necessary to evaluate these both in the context of the derived criteria and the nature of the proposed use.

The derived criteria is relatively strict given it is intended for commercial and industrial uses, and does not factor in the necessity of schools as a community facility nor the less offensive nature of their intermittent noise-generating activities that match the existing characteristics of an urban residential area.

On account of the above, Assured Environmental is of the opinion that the predicted noise impacts are acceptable, and that the assessment demonstrates that there is sufficient scope for the proposed school to operate in a way that manages the amenity of surrounding receptors.

APPENDIX A: BACKGROUND NOISE MONITORING

Table 19: Site and Instrumentation Data – ML1

Site Details: ML1	
Coordinates:	501660.6, 6988113.6 (EPSG:7856)
Start / End Date	15 May 2026 at 16:00 to 1 June 2026 at 09:00
Logger Details	Svantek 977 (serial number – 99444) Next Laboratory Calibration Due: 06/06/2027
Calibration Details	Svantek 33B (serial number – 147946) Start / End Calibration Level: 114.0 dB(A) / 113.8 dB(A) Next Laboratory Calibration Due: 15/04/2027
Measurement Details:	Fast/ A-weighting / 15-min duration / 1.2 m microphone height / Free field position (≥ 10 m from foliage drip lines)
Weather Details	On-site weather station (Davis Vantage Pro 2, SN789) indicated that several periods were affected by wind and / or rainfall (and consequently the data has been excluded)
On-site Observations:	Located in the front yard of 26 Knox Street, North Lakes, QLD. Bird noise dominant; distant traffic audible as underlying noise.
Site Photo	

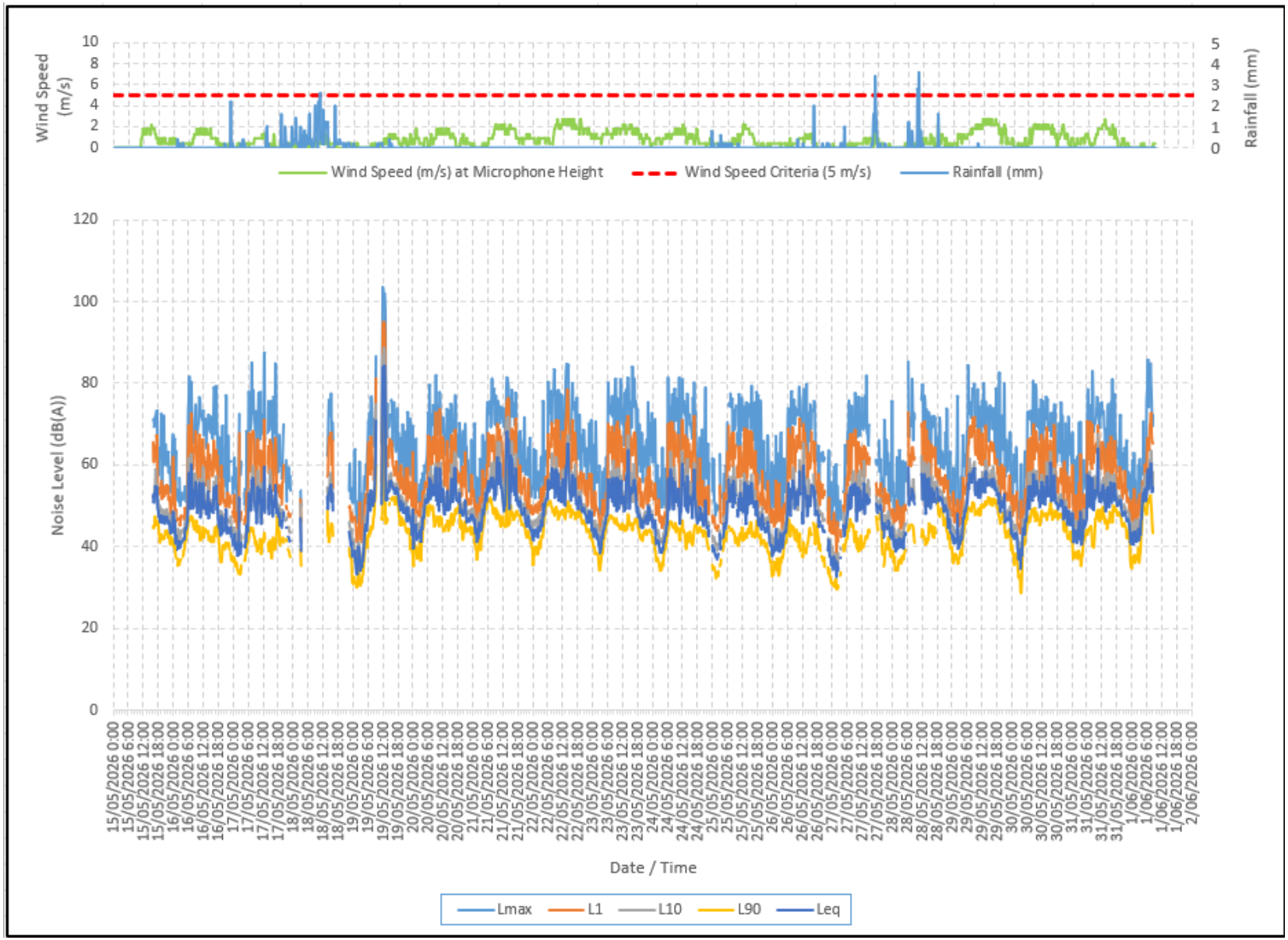


Figure 13: Overall Statistical Noise Measurement Data Plot – ML1

Table 20: Overall Noise Monitoring Results – ML1

Date	Period	Noise Metric (dB(A))						
		L_{max}	L_1	L_{10}	L_{90}	L_{eq}	Min $L_{90,1hr}$	Median $L_{eq,1hr}$
15/05/2026	Day	-	-	-	-	-	-	-
Friday	Evening	72.4	53.9	48.7	42.8	46.9	42.5	46.8
	Night	-	-	-	-	-	-	-
16/05/2026	Day	80.1	61.8	53.2	43.8	52.4	42.4	52.2
Saturday	Evening	77.1	52.4	47.0	39.6	45.6	37.5	45.8
	Night	-	-	-	-	-	-	-
17/05/2026	Day	87.5	61.6	52.8	41.2	52.5	40.1	52.3
Sunday	Evening	-	-	-	-	-	-	-
	Night	-	-	-	-	-	-	-
18/05/2026	Day	-	-	-	-	-	-	-
Monday	Evening	-	-	-	-	-	-	-
	Night	72.8	48.8	42.5	34.4	44.4	29.2	40.3
19/05/2026	Day	-	-	-	-	-	-	-
Tuesday	Evening	69.9	54.9	51.2	46.2	49.8	44.1	49.5
	Night	79.5	53.2	48.3	42.6	48.7	38.6	45.5
20/05/2026	Day	81.9	62.6	54.5	46.6	54.0	44.9	54.1
Wednesday	Evening	70.3	56.0	50.5	45.9	49.6	43.9	48.6
	Night	75.5	53.3	49.2	44.3	49.4	39.8	46.8
21/05/2026	Day	81.4	65.7	58.8	48.1	59.0	45.9	56.5
Thursday	Evening	71.5	54.6	50.0	45.7	48.9	43.3	49.1
	Night	80.0	52.4	48.3	43.1	48.6	38.9	45.2
22/05/2026	Day	84.7	64.9	56.3	48.6	56.8	47.6	54.8
Friday	Evening	72.2	55.4	50.7	46.6	49.6	44.8	49.7
	Night	79.6	51.6	46.4	41.1	47.1	36.6	43.7
23/05/2026	Day	84.0	64.4	55.0	45.8	54.9	44.6	54.0
Saturday	Evening	73.8	53.4	47.8	43.3	46.8	42.4	46.5
	Night	80.9	51.7	45.6	40.0	46.8	35.5	43.7
24/05/2026	Day	81.4	63.3	54.3	43.7	53.9	41.8	53.4
Sunday	Evening	78.7	53.3	48.2	43.7	47.3	43.2	47.2
	Night	-	-	-	-	-	-	-
25/05/2026	Day	79.4	62.2	53.1	43.1	52.2	41.6	52.2
Monday	Evening	77.0	52.0	47.4	41.8	45.8	40.6	45.9
	Night	73.8	50.2	44.1	37.8	45.1	34.3	41.5
26/05/2026	Day	79.8	62.9	53.7	42.2	53.1	39.2	52.9
Tuesday	Evening	-	-	-	-	-	-	-
	Night	-	-	-	-	-	-	-
27/05/2026	Day	-	-	-	-	-	-	-
Wednesday	Evening	-	-	-	-	-	-	-

Date	Period	Noise Metric (dB(A))						
		L_{max}	L_1	L_{10}	L_{90}	L_{eq}	Min $L_{90,1hr}$	Median $L_{eq,1hr}$
	Night	85.3	49.6	44.9	38.0	46.7	35.3	42.9
28/05/2026 Thursday	Day	-	-	-	-	-	-	-
	Evening	71.5	56.3	52.8	48.1	51.3	46.1	51.1
	Night	84.4	51.6	46.7	41.1	47.3	37.0	44.6
29/05/2026 Friday	Day	80.0	64.6	56.8	50.1	55.6	48.6	55.7
	Evening	82.6	56.3	51.3	46.8	50.8	43.9	50.5
	Night	73.0	51.1	45.8	39.4	46.1	32.9	43.1
30/05/2026 Saturday	Day	80.3	63.2	55.0	47.8	54.2	47.1	53.9
	Evening	75.3	56.0	51.1	46.7	49.8	44.9	49.9
	Night	78.4	53.1	46.9	40.4	47.8	37.4	45.5
31/05/2026 Sunday	Day	82.7	62.9	54.2	46.5	54.1	44.8	53.3
	Evening	72.1	55.5	50.8	46.6	49.6	45.2	49.4
	Night	85.7	52.6	48.6	42.2	50.0	36.8	44.1
1/06/2026 Monday	Day	-	-	-	-	-	-	-
	Evening	-	-	-	-	-	-	-
	Night	-	-	-	-	-	-	-

Table 21: Site and Instrumentation Data – ML2

Site Details: ML2	
Coordinates:	500808.5, 6987820.7 (EPSG:7856)
Start / End Date	15 May 2026 at 11:30 to 1 June 2026 at 08:30
Logger Details	Svantek 977 (serial number – 99447) Next Laboratory Calibration Due: 20/04/2028
Calibration Details	Svantek 33B (serial number – 147946) Start / End Calibration Level: 114.0 dB(A) / 113.8 dB(A) Next Laboratory Calibration Due: 15/04/2027
Measurement Details:	Fast/ A-weighting / 15-min duration / 1.2 m microphone height / Free field position (≥ 10 m from foliage drip lines)
Weather Details	On-site weather station (Davis Vantage Pro 2, SN789) indicated that several periods were affected by wind and / or rainfall (and consequently the data has been excluded)
On-site Observations:	Located in the front yard of 25 Chilton Crescent, North Lakes, QLD. Bird noise dominant; distant traffic audible as underlying noise.
Site Photo	

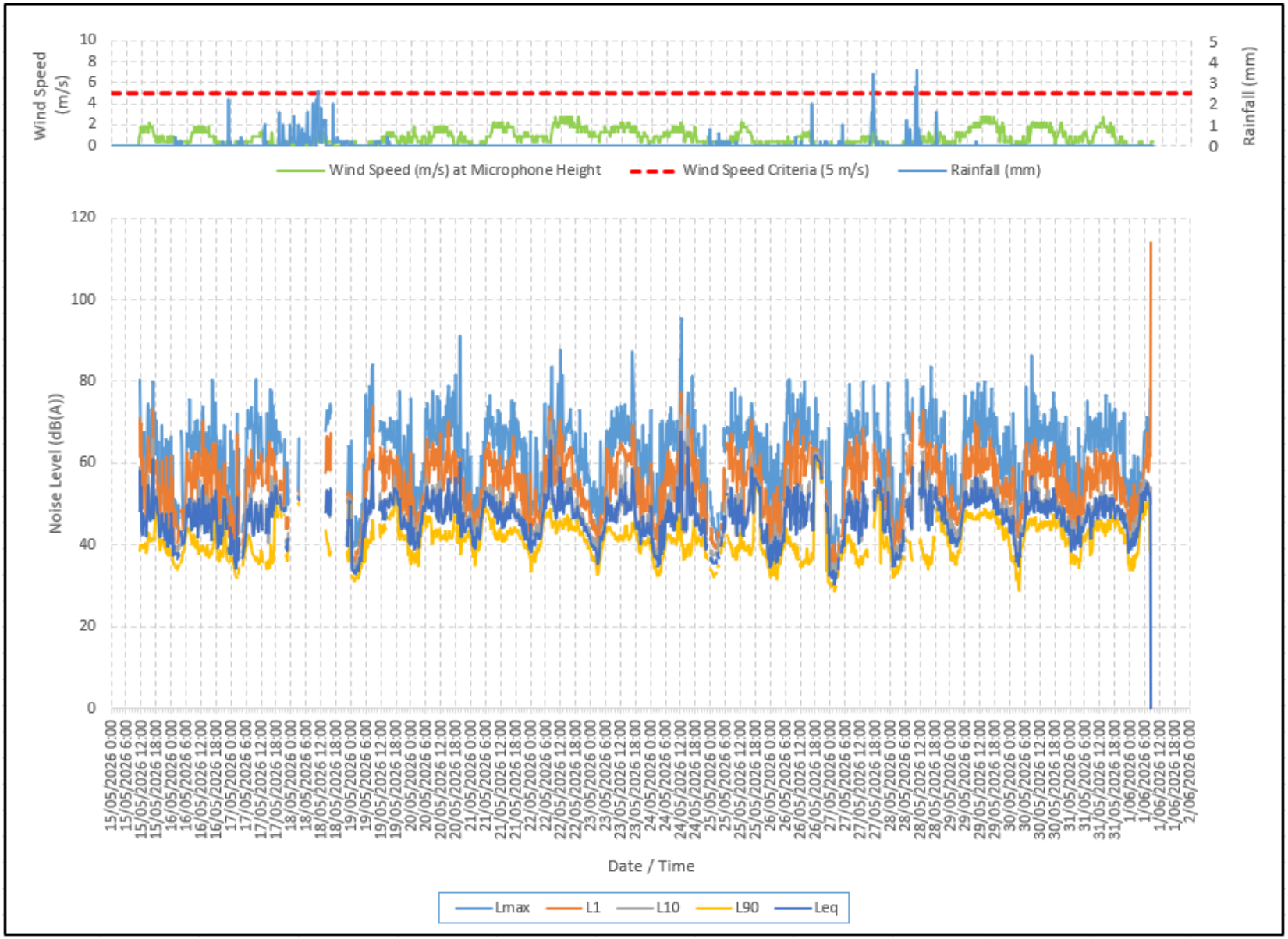


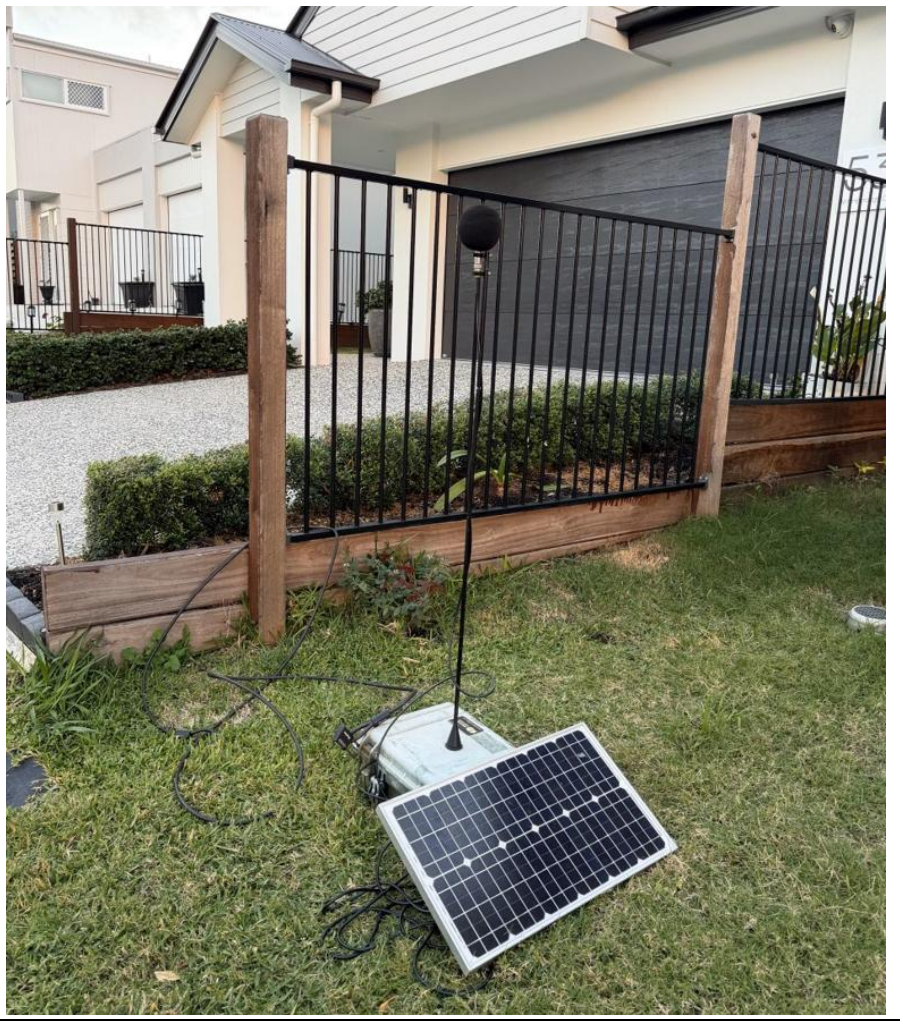
Figure 14: Overall Statistical Noise Measurement Data Plot – ML2

Table 22: Overall Noise Monitoring Results – ML2

Date	Period	Noise Metric (dB(A))						
		L_{max}	L_1	L_{10}	L_{90}	L_{eq}	Min $L_{90,1hr}$	Median $L_{eq,1hr}$
15/05/2026	Day	-	-	-	-	-	-	-
Friday	Evening	70.5	53.0	45.9	40.0	46.5	39.5	44.7
	Night	-	-	-	-	-	-	-
16/05/2026	Day	80.0	58.4	47.8	39.8	48.4	38.3	48.1
Saturday	Evening	68.9	52.4	46.0	37.6	47.1	36.0	45.6
	Night	-	-	-	-	-	-	-
17/05/2026	Day	80.5	58.5	48.4	37.6	48.4	35.5	47.7
Sunday	Evening	-	-	-	-	-	-	-
	Night	-	-	-	-	-	-	-
18/05/2026	Day	-	-	-	-	-	-	-
Monday	Evening	-	-	-	-	-	-	-
	Night	76.8	45.0	41.5	35.0	43.9	32.0	41.1
19/05/2026	Day	-	-	-	-	-	-	-
Tuesday	Evening	77.5	54.5	48.5	43.2	49.3	41.5	47.8
	Night	75.7	50.5	46.0	40.6	46.8	36.8	44.1
20/05/2026	Day	78.7	60.2	50.6	43.1	50.5	41.9	50.0
Wednesday	Evening	91.2	55.4	47.2	42.6	51.3	40.6	48.8
	Night	70.9	50.4	46.9	42.5	47.1	38.1	44.9
21/05/2026	Day	76.7	58.4	49.4	43.4	49.1	42.1	48.4
Thursday	Evening	70.9	53.7	45.8	42.0	45.9	40.2	46.0
	Night	74.5	49.5	45.0	40.5	45.7	36.6	42.7
22/05/2026	Day	87.8	61.3	53.3	45.4	54.7	44.1	51.8
Friday	Evening	72.9	53.0	47.8	43.4	46.6	41.7	46.6
	Night	68.0	47.2	42.9	38.7	43.2	34.9	41.5
23/05/2026	Day	86.9	60.7	50.4	42.7	51.0	41.8	50.6
Saturday	Evening	69.3	51.5	44.6	40.1	44.3	39.0	44.5
	Night	72.9	47.8	41.9	37.4	43.1	33.3	43.1
24/05/2026	Day	95.2	60.3	51.1	41.0	56.5	38.5	49.8
Sunday	Evening	69.2	53.2	45.1	40.9	45.0	40.4	45.3
	Night	-	-	-	-	-	-	-
25/05/2026	Day	78.4	59.4	49.8	39.3	50.3	37.4	48.7
Monday	Evening	69.1	54.7	49.6	38.7	52.4	38.2	51.5
	Night	75.8	47.7	41.6	36.3	42.9	33.4	39.3
26/05/2026	Day	80.5	60.9	49.4	37.7	51.2	35.7	49.5
Tuesday	Evening	-	-	-	-	-	-	-
	Night	-	-	-	-	-	-	-
27/05/2026	Day	-	-	-	-	-	-	-
Wednesday	Evening	-	-	-	-	-	-	-

Date	Period	Noise Metric (dB(A))						
		L_{max}	L_1	L_{10}	L_{90}	L_{eq}	Min $L_{90,1hr}$	Median $L_{eq,1hr}$
	Night	80.4	47.5	42.5	36.7	44.4	33.5	41.6
28/05/2026 Thursday	Day	-	-	-	-	-	-	-
	Evening	75.7	57.8	50.3	46.3	50.2	44.8	49.7
	Night	76.3	50.5	46.2	40.8	46.4	36.6	43.6
29/05/2026 Friday	Day	79.9	60.6	52.6	47.3	52.1	46.6	51.5
	Evening	71.3	54.7	49.8	45.2	48.5	42.7	48.7
	Night	78.5	50.9	45.1	38.5	45.3	32.3	44.3
30/05/2026 Saturday	Day	86.0	59.2	50.5	45.1	50.4	44.6	49.7
	Evening	73.6	55.4	48.6	44.6	48.3	42.8	47.9
	Night	71.4	49.8	44.4	38.9	43.5	36.3	43.4
31/05/2026 Sunday	Day	76.5	58.2	49.4	44.0	49.2	42.4	49.1
	Evening	73.3	54.1	48.2	44.4	47.7	43.2	47.3
	Night	68.4	51.0	47.2	41.1	47.7	35.5	43.9
1/06/2026 Monday	Day	-	-	-	-	-	-	-
	Evening	-	-	-	-	-	-	-
	Night	-	-	-	-	-	-	-

Table 23: Site and Instrumentation Data – ML3

Site Details: NML 1	
Coordinates:	501677.0, 6987796.0 (EPSG:7856)
Start / End Date	15 May 2026 at 17:00 to 1 June 2026 at 09:15
Logger Details	Norsonic 139 (serial number – 1972970) Next Laboratory Calibration Due: 16/10/2027
Calibration Details	Svantek 33B (serial number – 147946) Start / End Calibration Level: 114.0 dB(A) / 114.0 dB(A) Next Laboratory Calibration Due: 15/04/2027
Measurement Details:	Fast/ A-weighting / 15-min duration / 1.2 m microphone height / Free field position (≥ 10 m from foliage drip lines)
Weather Details	On-site weather station (Davis Vantage Pro 2, SN789) indicated that several periods were affected by wind and / or rainfall (and consequently the data has been excluded)
On-site Observations:	Located in the front yard of 53 Attenborough Circuit, North Lakes, QLD. Traffic noise dominant; some bird noise and localised domestic noises observed.
Site Photo	

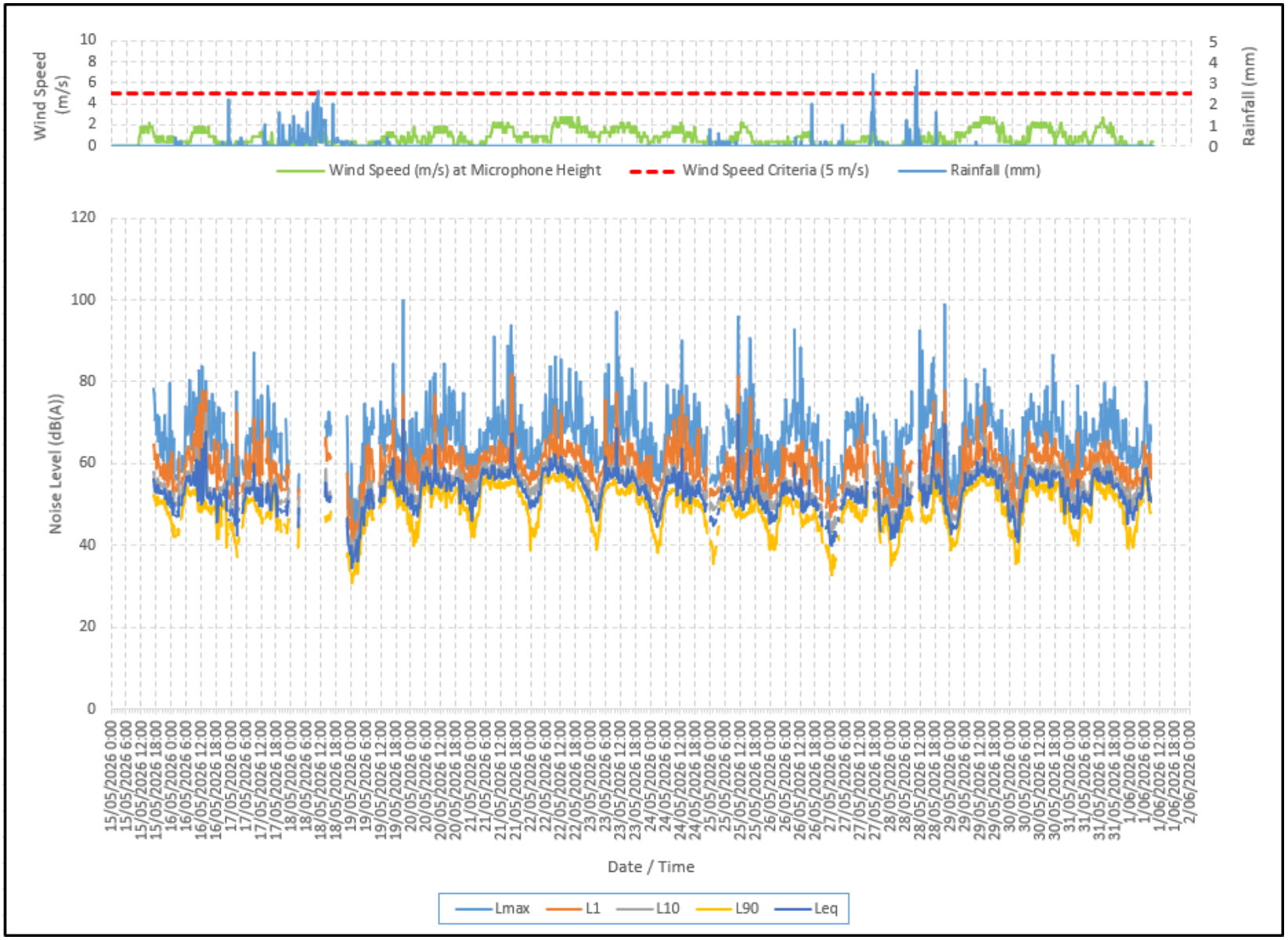


Figure 15: Overall Statistical Noise Measurement Data Plot – ML3

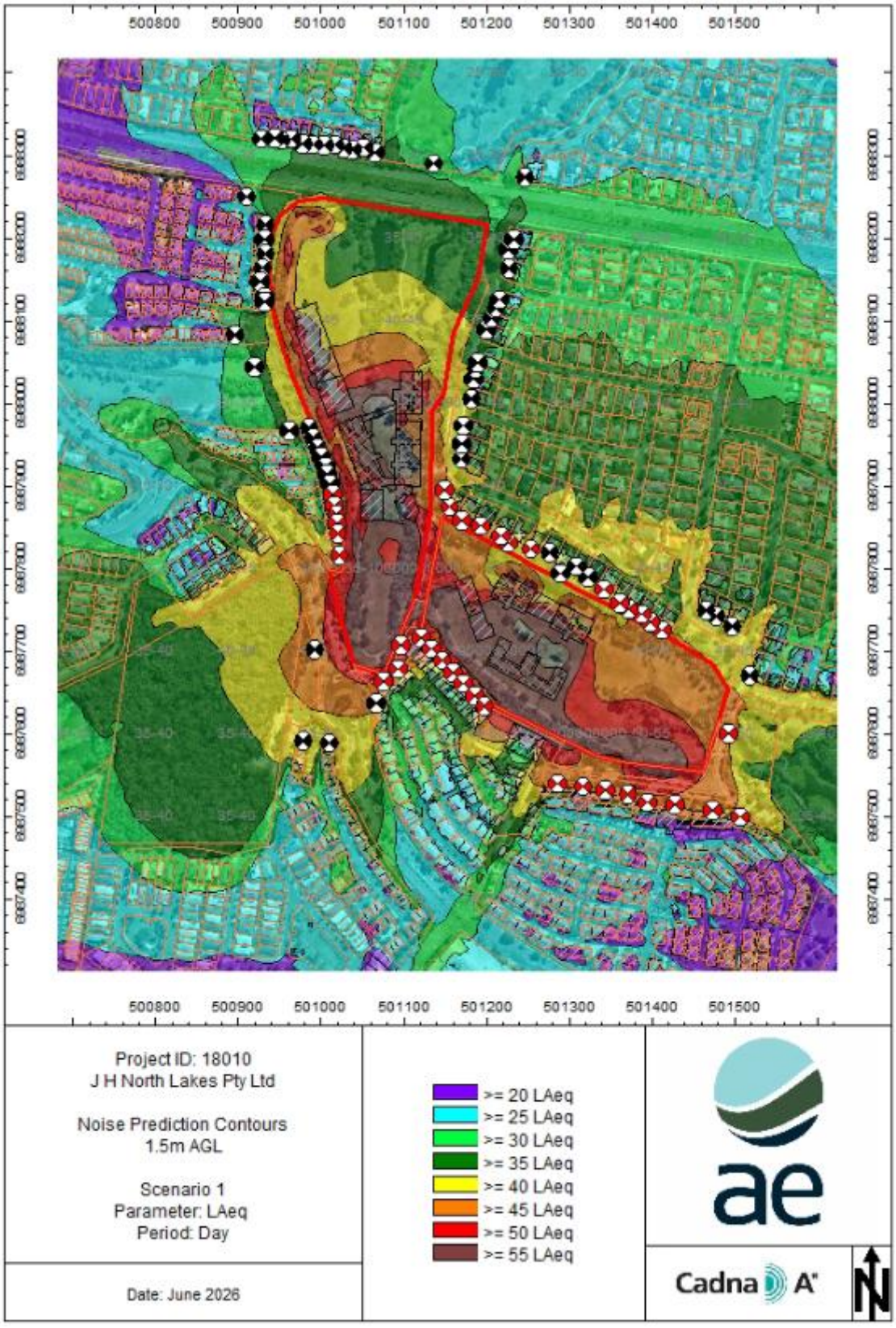
Table 24: Overall Noise Monitoring Results – ML3

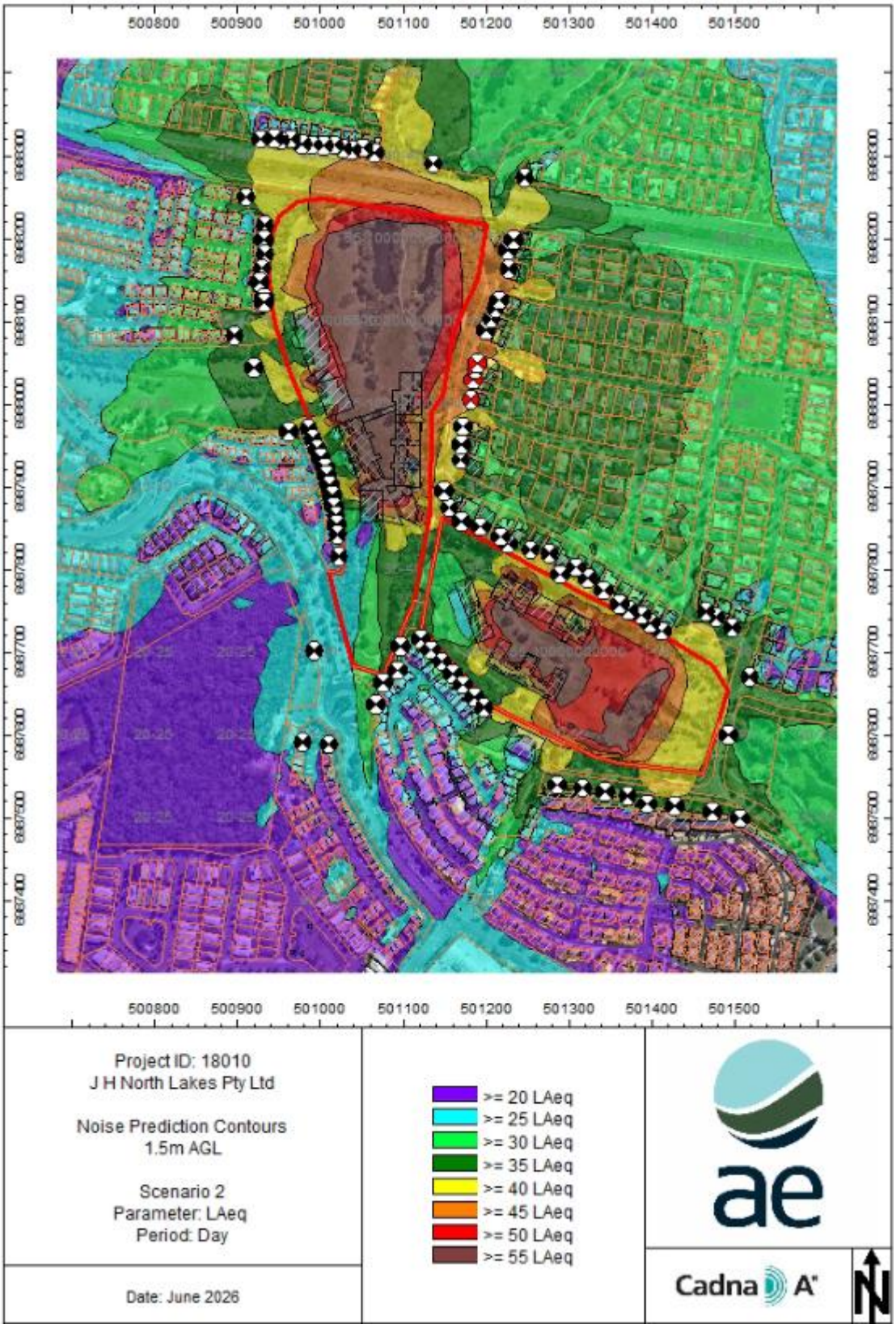
Date	Period	Noise Metric (dB(A))						
		L_{max}	L_1	L_{10}	L_{90}	L_{eq}	Min $L_{90,1hr}$	Median $L_{eq,1hr}$
15/05/2026	Day	-	-	-	-	-	-	-
Friday	Evening	71.9	59.0	54.6	50.6	53.2	50.3	53.1
	Night	-	-	-	-	-	-	-
16/05/2026	Day	83.8	63.0	56.3	50.5	57.5	48.8	56.3
Saturday	Evening	73.7	57.8	52.6	47.1	51.5	44.4	51.8
	Night	-	-	-	-	-	-	-
17/05/2026	Day	86.9	60.1	53.9	49.2	53.3	47.3	52.7
Sunday	Evening	-	-	-	-	-	-	-
	Night	-	-	-	-	-	-	-
18/05/2026	Day	-	-	-	-	-	-	-
Monday	Evening	-	-	-	-	-	-	-
	Night	74.4	49.4	44.6	38.9	45.7	32.8	41.2
19/05/2026	Day	-	-	-	-	-	-	-
Tuesday	Evening	99.9	59.7	55.1	50.6	59.7	49.6	53.7
	Night	77.6	58.4	54.6	48.0	53.7	42.2	51.5
20/05/2026	Day	84.4	62.2	57.1	52.5	56.2	51.2	55.9
Wednesday	Evening	77.0	59.7	56.0	51.0	54.6	49.1	54.3
	Night	68.4	58.6	55.7	49.7	54.8	44.3	51.8
21/05/2026	Day	93.6	63.3	59.0	55.2	59.2	54.5	57.4
Thursday	Evening	74.2	59.7	56.6	52.6	55.2	50.4	55.0
	Night	76.7	58.7	55.7	49.0	54.7	43.0	52.4
22/05/2026	Day	86.0	64.2	59.8	56.0	58.8	54.7	58.6
Friday	Evening	81.9	61.7	58.4	54.2	57.1	52.0	56.9
	Night	82.0	58.2	53.9	47.4	53.2	41.9	52.2
23/05/2026	Day	97.0	62.8	58.1	54.1	58.0	52.9	56.9
Saturday	Evening	77.9	58.9	55.4	51.4	54.0	50.5	53.6
	Night	79.7	56.4	52.1	45.6	51.1	40.3	49.3
24/05/2026	Day	89.7	62.5	55.8	51.4	55.6	49.7	55.7
Sunday	Evening	74.8	58.2	53.7	49.6	52.6	47.9	52.7
	Night	-	-	-	-	-	-	-
25/05/2026	Day	95.8	60.9	53.9	48.7	57.8	47.6	52.3
Monday	Evening	70.6	57.2	53.2	48.7	51.9	46.6	51.7
	Night	75.6	56.0	52.1	45.4	50.8	40.9	49.7
26/05/2026	Day	92.8	59.9	53.3	48.2	52.9	46.4	52.9
Tuesday	Evening	-	-	-	-	-	-	-
	Night	-	-	-	-	-	-	-
27/05/2026	Day	-	-	-	-	-	-	-
Wednesday	Evening	-	-	-	-	-	-	-

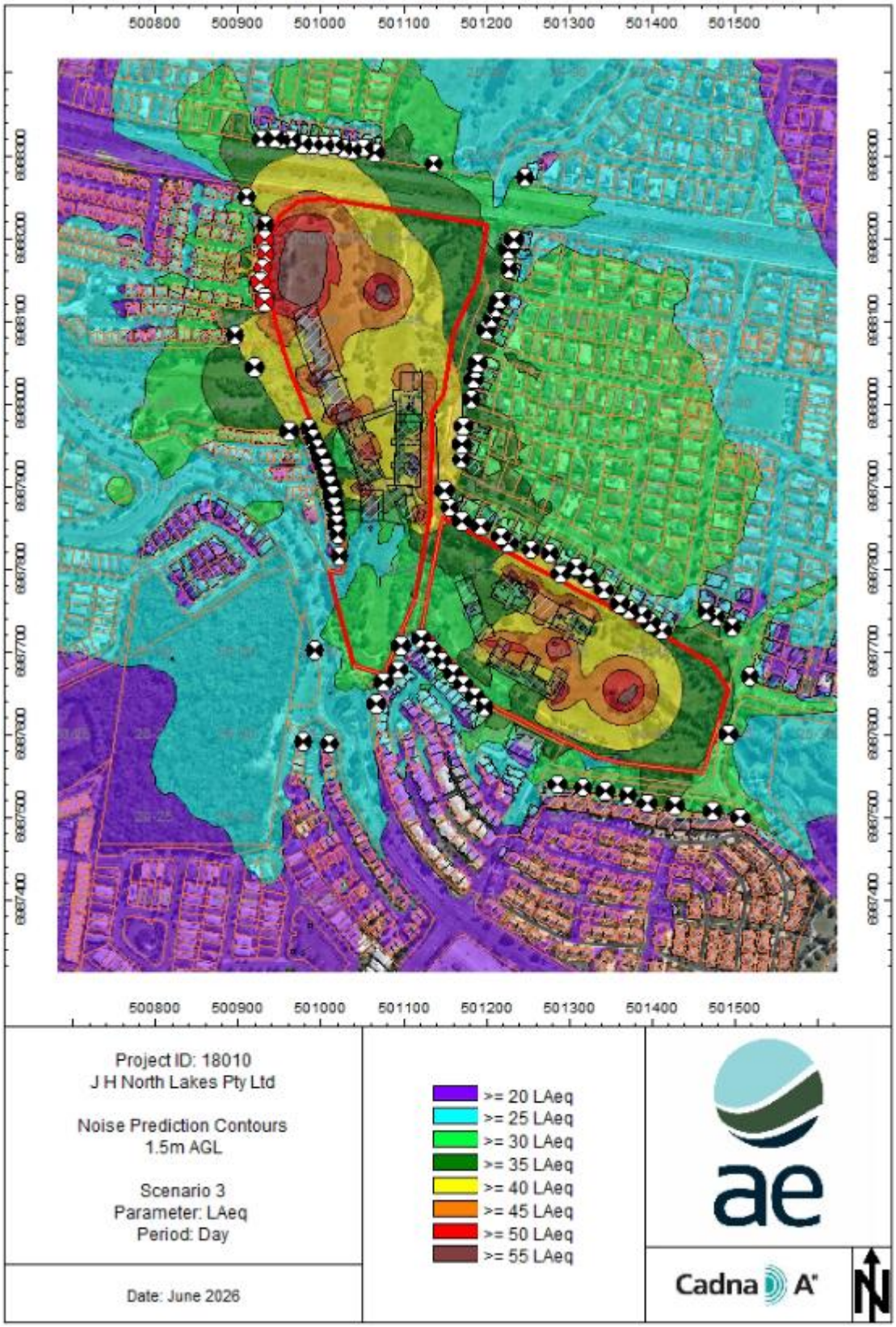
Date	Period	Noise Metric (dB(A))						
		L_{max}	L_1	L_{10}	L_{90}	L_{eq}	Min $L_{90,1hr}$	Median $L_{eq,1hr}$
	Night	70.7	53.0	49.2	42.1	47.9	37.5	48.0
28/05/2026 Thursday	Day	-	-	-	-	-	-	-
	Evening	76.8	59.4	55.9	52.2	54.9	49.9	54.7
	Night	98.9	54.4	50.3	45.4	55.7	40.5	47.4
29/05/2026 Friday	Day	82.8	62.8	58.8	55.3	57.8	54.3	57.6
	Evening	73.0	59.9	56.8	52.0	55.5	48.4	55.9
	Night	72.8	55.4	51.3	44.6	50.7	37.8	49.7
30/05/2026 Saturday	Day	86.2	62.2	58.4	54.1	56.9	53.4	56.8
	Evening	79.7	61.3	57.5	52.8	56.2	50.4	56.0
	Night	79.1	56.9	52.5	45.8	50.9	42.1	50.5
31/05/2026 Sunday	Day	79.8	61.2	57.2	52.9	56.2	48.0	57.0
	Evening	78.5	58.6	55.2	50.4	53.6	48.2	53.7
	Night	80.0	57.1	53.6	46.9	53.0	40.8	50.9
1/06/2026 Monday	Day	-	-	-	-	-	-	-
	Evening	-	-	-	-	-	-	-
	Night	-	-	-	-	-	-	-

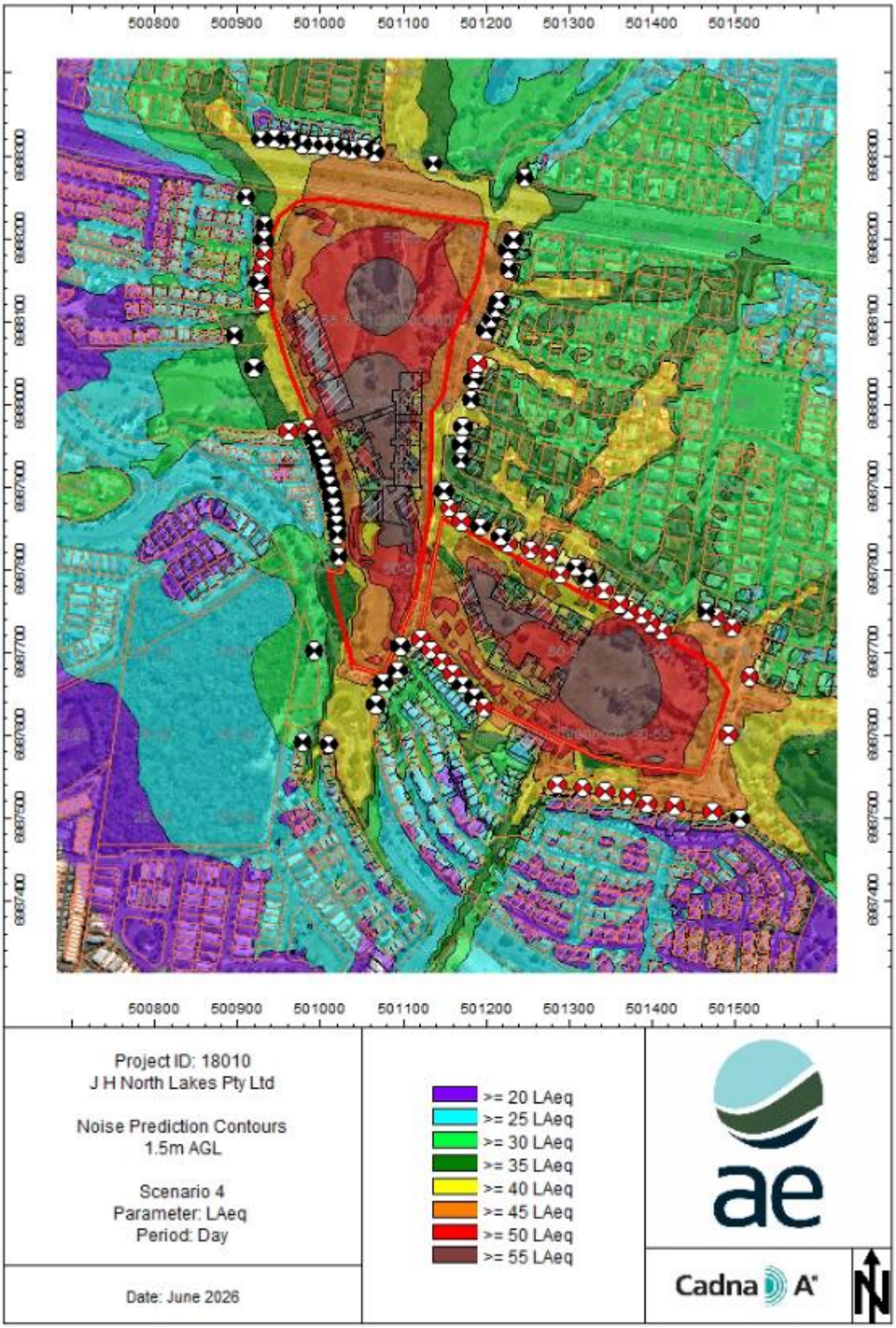
APPENDIX B: NOISE ISOPLETHS

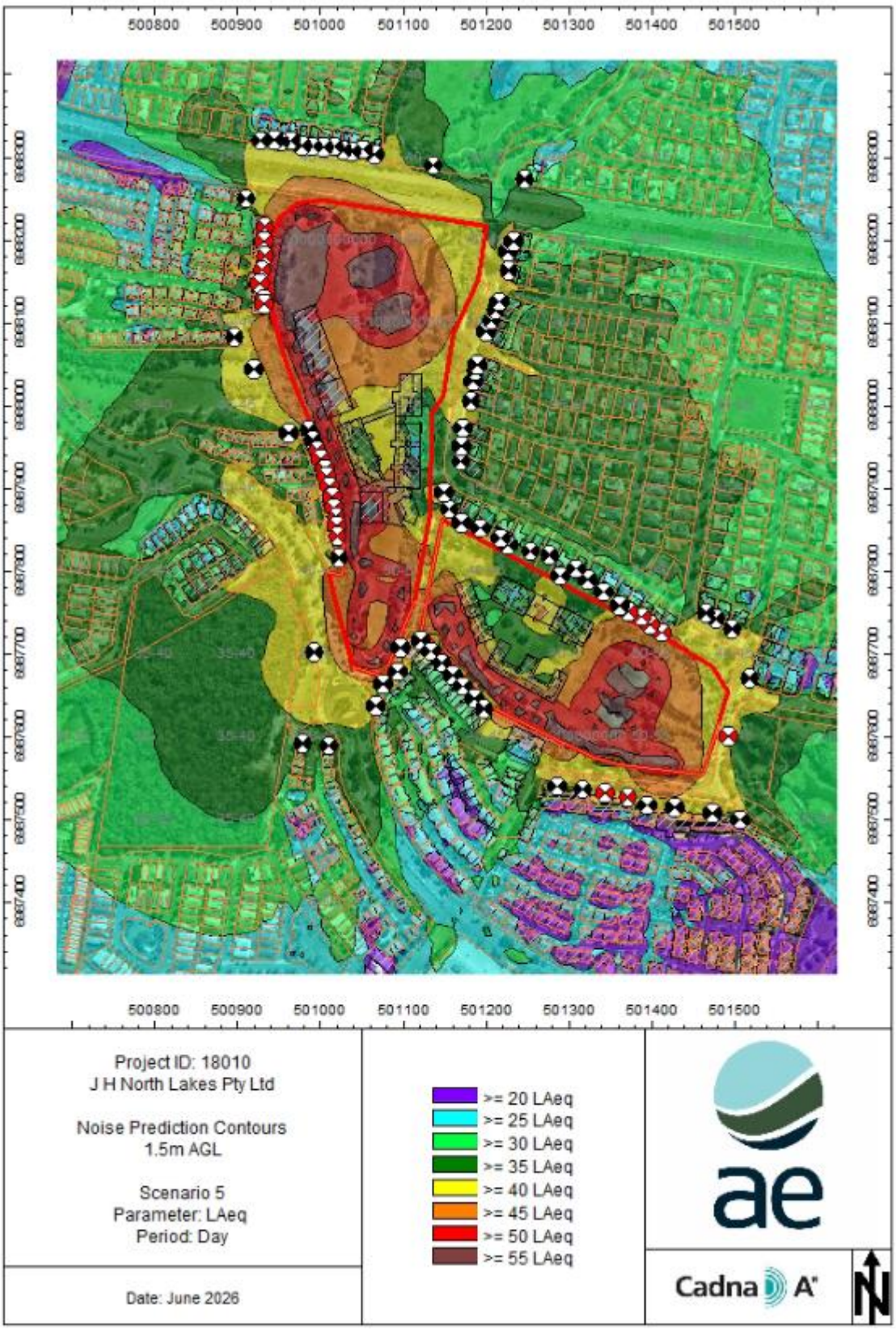
Isopleths illustrate the spatial distribution of predicted noise levels across the modelling domain for each time-period and height of interest. However, this process of interpolation causes a smoothing of the base data that can lead to minor differences between the isopleths and receptor model predictions.

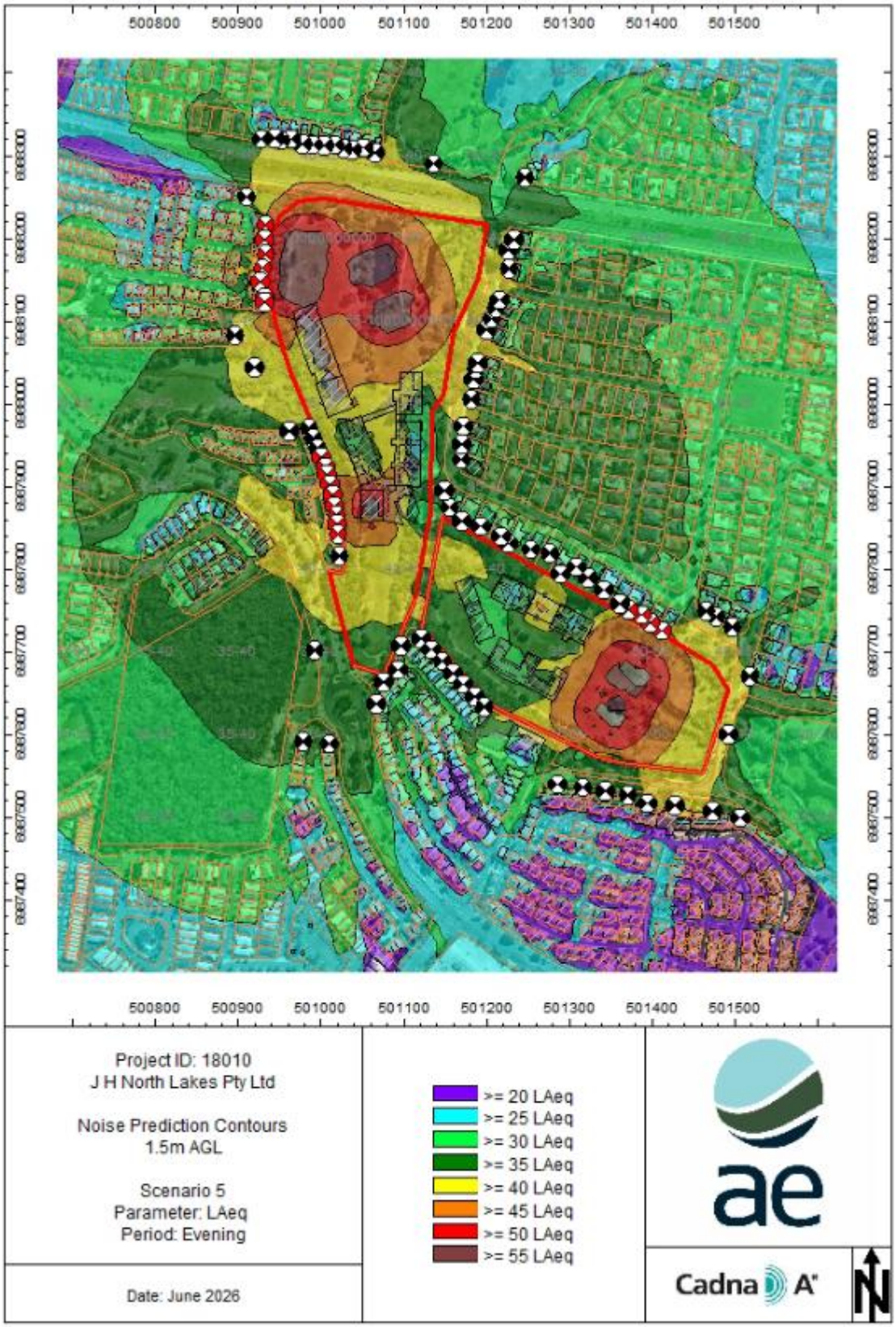

500800
500900
501000
501100
501200
501300
501400
501500
Project ID: 18010
J H North Lakes Pty Ltd
Noise Prediction Contours
1.5m AGL
Scenario 1
Parameter: LAeq
Period: Day
Date: June 2026
>= 20 LAeq
>= 25 LAeq
>= 30 LAeq
>= 35 LAeq
>= 40 LAeq
>= 45 LAeq
>= 50 LAeq
>= 55 LAeq
Cadna A
N


500800
500900
501000
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501500
Project ID: 18010
J H North Lakes Pty Ltd
Noise Prediction Contours
1.5m AGL
Scenario 2
Parameter: LAeq
Period: Day
Date: June 2026
>= 20 LAeq
>= 25 LAeq
>= 30 LAeq
>= 35 LAeq
>= 40 LAeq
>= 45 LAeq
>= 50 LAeq
>= 55 LAeq
Cadna A
N


500800
500900
501000
501100
501200
501300
501400
501500
Project ID: 18010
J H North Lakes Pty Ltd
Noise Prediction Contours
1.5m AGL
Scenario 3
Parameter: LAeq
Period: Day
Date: June 2026
>= 20 LAeq
>= 25 LAeq
>= 30 LAeq
>= 35 LAeq
>= 40 LAeq
>= 45 LAeq
>= 50 LAeq
>= 55 LAeq
Cadna A
N


500800
500900
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501100
501200
501300
501400
501500
6888000
6887900
6887800
6887700
6887600
6887500
6887400
Project ID: 18010
J H North Lakes Pty Ltd
Noise Prediction Contours
1.5m AGL
Scenario 4
Parameter: LAeq
Period: Day
Date: June 2026
>= 20 LAeq
>= 25 LAeq
>= 30 LAeq
>= 35 LAeq
>= 40 LAeq
>= 45 LAeq
>= 50 LAeq
>= 55 LAeq
Cadna A
N


500800
500900
501000
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501200
501300
501400
501500
Project ID: 18010
J H North Lakes Pty Ltd
Noise Prediction Contours
1.5m AGL
Scenario 5
Parameter: LAeq
Period: Day
Date: June 2026
>= 20 LAeq
>= 25 LAeq
>= 30 LAeq
>= 35 LAeq
>= 40 LAeq
>= 45 LAeq
>= 50 LAeq
>= 55 LAeq
Cadna A
N


500800
500900
501000
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501200
501300
501400
501500
Project ID: 18010
J H North Lakes Pty Ltd
Noise Prediction Contours
1.5m AGL
Scenario 5
Parameter: LAeq
Period: Evening
Date: June 2026
>= 20 LAeq
>= 25 LAeq
>= 30 LAeq
>= 35 LAeq
>= 40 LAeq
>= 45 LAeq
>= 50 LAeq
>= 55 LAeq
Cadna A
N

APPENDIX C: FULL RECEPTOR RESULTS

Table 25: Full Predicted Receptor Noise Levels – Scenario 1

Receptor	Predicted Noise Levels, Day $L_{Aeq,\ 1\text{-}hour}$, dB(A))	Criteria, Day dB(A)	Comply (Y/N)
R1 GF	30	48	Y
R1 FF	33	48	Y
R2 GF	39	48	Y
R2 FF	40	48	Y
R3 GF	40	48	Y
R3 FF	41	48	Y
R4 GF	41	48	Y
R4 FF	42	48	Y
R5 GF	41	48	Y
R5 FF	42	48	Y
R6 GF	40	48	Y
R6 FF	41	48	Y
R7 GF	41	48	Y
R7 FF	43	48	Y
R8 GF	41	48	Y
R8 FF	43	48	Y
R9 GF	32	48	Y
R9 FF	36	48	Y
R10 GF	42	48	Y
R10 FF	42	48	Y
R11 GF	46	48	Y
R11 FF	46	48	Y
R12 GF	46	48	Y
R12 FF	46	48	Y
R13 GF	45	48	Y
R13 FF	45	48	Y
R14 GF	45	48	Y
R14 FF	45	48	Y
R15 GF	45	48	Y
R15 FF	45	48	Y
R16 GF	46	48	Y
R16 FF	46	48	Y
R17 GF	47	48	Y
R17 FF	47	48	Y
R18 GF	48	48	Y
R18 FF	48	48	Y
R19 GF	48	48	Y

Receptor	Predicted Noise Levels, Day $L_{Aeq, 1\text{-hour}}$, dB(A))	Criteria, Day dB(A)	Comply (Y/N)
R19 FF	48	48	Y
R20 GF	48	48	Y
R20 FF	49	48	N
R21 GF	49	48	N
R21 FF	49	48	N
R22 GF	49	48	N
R22 FF	50	48	N
R23 GF	48	50	Y
R23 FF	51	50	N
R24 GF	43	50	Y
R24 FF	44	50	Y
R25 GF	44	50	Y
R25 FF	44	50	Y
R26 GF	44	50	Y
R27 GF	50	50	Y
R28 GF	51	50	N
R29 GF	54	50	N
R30 GF	49	45	N
R31 GF	47	45	N
R32 GF	48	45	N
R33 GF	47	45	N
R34 GF	47	45	N
R35 GF	48	45	N
R36 GF	50	45	N
R37 GF	46	45	N
R37 FF	47	45	N
R37 SF	48	45	N
R38 GF	46	45	N
R38 FF	47	45	N
R38 SF	48	45	N
R39 GF	47	45	N
R39 FF	48	45	N
R39 SF	49	45	N
R40 GF	48	45	N
R40 FF	49	45	N
R40 SF	49	45	N
R41 GF	48	45	N
R41 FF	49	45	N
R41 SF	49	45	N

Receptor	Predicted Noise Levels, Day $L_{Aeq, 1\text{-hour}}$, dB(A))	Criteria, Day dB(A)	Comply (Y/N)
R42 GF	48	45	N
R42 FF	49	45	N
R42 SF	49	45	N
R43 GF	46	45	N
R43 FF	47	45	N
R43 SF	47	45	N
R44 GF	45	45	Y
R44 FF	45	45	Y
R44 SF	45	45	Y
R45 GF	44	45	Y
R45 FF	44	45	Y
R46 GF	43	45	Y
R46 FF	43	45	Y
R47 GF	43	45	Y
R47 FF	43	45	Y
R48 GF	43	45	Y
R48 FF	43	45	Y
R49 GF	46	45	N
R49 FF	46	45	N
R50 GF	46	45	N
R50 FF	46	45	N
R51 GF	45	45	N
R51 FF	45	45	Y
R52 GF	45	45	Y
R52 FF	46	45	N
R53 GF	44	45	Y
R53 FF	46	45	N
R54 GF	42	45	Y
R54 FF	46	45	N
R55 GF	43	45	Y
R55 FF	44	45	Y
R56 GF	41	45	Y
R56 FF	43	45	Y
R58 GF	42	45	Y
R58 FF	43	45	Y
R57 GF	42	45	Y
R57 FF	44	45	Y
R59 GF	44	45	Y
R59 FF	45	45	N

Receptor	Predicted Noise Levels, Day $L_{Aeq, 1\text{-hour}}$, dB(A))	Criteria, Day dB(A)	Comply (Y/N)
R60 GF	43	45	Y
R60 FF	45	45	Y
R61 GF	43	45	Y
R61 FF	46	45	N
R62 GF	46	45	N
R62 FF	46	45	N
R63 GF	47	45	N
R63 FF	47	45	N
R64 GF	47	45	N
R64 FF	47	45	N
R65 GF	46	45	N
R65 FF	47	45	N
R66 GF	40	45	Y
R66 FF	43	45	Y
R67 GF	41	45	Y
R67 FF	44	45	Y
R68 GF	42	45	Y
R68 FF	43	45	Y
R69 GF	41	45	Y
R69 FF	42	45	Y
R70 GF	39	45	Y
R70 FF	41	45	Y
R71 GF	38	45	Y
R71 FF	40	45	Y
R72 GF	36	45	Y
R72 FF	38	45	Y
R73 GF	38	48	Y
R73 FF	40	48	Y
R74 GF	36	48	Y
R74 FF	39	48	Y
R75 GF	36	48	Y
R75 FF	39	48	Y
R76 GF	36	48	Y
R76 FF	38	48	Y
R77 GF	37	48	Y
R77 FF	38	48	Y
R78 GF	37	48	Y
R78 FF	38	48	Y
R79 GF	34	48	Y

Receptor	Predicted Noise Levels, Day $L_{Aeq, 1\text{-hour}}$, dB(A))	Criteria, Day dB(A)	Comply (Y/N)
R79 FF	36	48	Y
R80 GF	30	48	Y
R80 FF	34	48	Y
R81 GF	36	48	Y
R81 FF	36	48	Y
R82 GF	36	48	Y
R82 FF	36	48	Y
R83 GF	36	48	Y
R83 FF	36	48	Y
R84 GF	36	48	Y
R84 FF	36	48	Y
R85 GF	36	48	Y
R85 FF	36	48	Y
R86 GF	36	48	Y
R86 FF	36	48	Y
R87 GF	36	48	Y
R87 FF	36	48	Y
R88 GF	36	48	Y
R88 FF	36	48	Y
R89 GF	35	48	Y
R89 FF	36	48	Y
R90 GF	34	48	Y
R90 FF	36	48	Y
R91 GF	34	48	Y
R91 FF	36	48	Y
R92 GF	34	48	Y
R92 FF	36	48	Y
O1 GF	47	42	N
O2 GF	48	50	Y
O3 GF	34	45	Y
O4 GF	32	45	Y

a) GF = Ground Floor; FF = First Floor, SF = Second Floor

Table 26: Full Predicted Receptor Noise Levels – Scenario 2

Receptor	Predicted Noise Levels, Day $L_{Aeq,\ 1\text{-}hour}$, dB(A))	Criteria, Day dB(A)	Comply (Y/N)
R1 GF	39	48	Y
R1 FF	41	48	Y
R2 GF	41	48	Y
R2 FF	44	48	Y
R3 GF	41	48	Y
R3 FF	45	48	Y
R4 GF	42	48	Y
R4 FF	45	48	Y
R5 GF	42	48	Y
R5 FF	45	48	Y
R6 GF	42	48	Y
R6 FF	45	48	Y
R7 GF	43	48	Y
R7 FF	45	48	Y
R8 GF	43	48	Y
R8 FF	45	48	Y
R9 GF	38	48	Y
R9 FF	40	48	Y
R10 GF	40	48	Y
R10 FF	41	48	Y
R11 GF	43	48	Y
R11 FF	43	48	Y
R12 GF	42	48	Y
R12 FF	43	48	Y
R13 GF	40	48	Y
R13 FF	40	48	Y
R14 GF	38	48	Y
R14 FF	38	48	Y
R15 GF	34	48	Y
R15 FF	35	48	Y
R16 GF	38	48	Y
R16 FF	38	48	Y
R17 GF	40	48	Y
R17 FF	40	48	Y
R18 GF	39	48	Y
R18 FF	39	48	Y
R19 GF	36	48	Y
R19 FF	36	48	Y

Receptor	Predicted Noise Levels, Day $L_{Aeq, 1\text{-hour}}$, dB(A))	Criteria, Day dB(A)	Comply (Y/N)
R20 GF	32	48	Y
R20 FF	32	48	Y
R21 GF	30	48	Y
R21 FF	31	48	Y
R22 GF	29	48	Y
R22 FF	30	48	Y
R23 GF	26	50	Y
R23 FF	28	50	Y
R24 GF	28	50	Y
R24 FF	29	50	Y
R25 GF	28	50	Y
R25 FF	29	50	Y
R26 GF	30	50	Y
R27 GF	35	50	Y
R28 GF	36	50	Y
R29 GF	37	50	Y
R30 GF	37	45	Y
R31 GF	37	45	Y
R32 GF	38	45	Y
R33 GF	38	45	Y
R34 GF	37	45	Y
R35 GF	39	45	Y
R36 GF	40	45	Y
R37 GF	38	45	Y
R37 FF	40	45	Y
R37 SF	41	45	Y
R38 GF	36	45	Y
R38 FF	40	45	Y
R38 SF	42	45	Y
R39 GF	37	45	Y
R39 FF	41	45	Y
R39 SF	42	45	Y
R40 GF	39	45	Y
R40 FF	41	45	Y
R40 SF	42	45	Y
R41 GF	39	45	Y
R41 FF	41	45	Y
R41 SF	41	45	Y
R42 GF	39	45	Y

Receptor	Predicted Noise Levels, Day $L_{Aeq, 1\text{-hour}}$, dB(A))	Criteria, Day dB(A)	Comply (Y/N)
R42 FF	40	45	Y
R42 SF	40	45	Y
R43 GF	38	45	Y
R43 FF	39	45	Y
R43 SF	39	45	Y
R44 GF	37	45	Y
R44 FF	37	45	Y
R44 SF	37	45	Y
R45 GF	39	45	Y
R45 FF	39	45	Y
R46 GF	39	45	Y
R46 FF	39	45	Y
R47 GF	39	45	Y
R47 FF	40	45	Y
R48 GF	39	45	Y
R48 FF	40	45	Y
R49 GF	44	45	Y
R49 FF	45	45	Y
R50 GF	45	45	Y
R50 FF	45	45	Y
R51 GF	44	45	Y
R51 FF	44	45	Y
R52 GF	44	45	Y
R52 FF	45	45	Y
R53 GF	43	45	Y
R53 FF	44	45	Y
R54 GF	41	45	Y
R54 FF	43	45	Y
R55 GF	40	45	Y
R55 FF	41	45	Y
R56 GF	38	45	Y
R56 FF	39	45	Y
R58 GF	39	45	Y
R58 FF	40	45	Y
R57 GF	40	45	Y
R57 FF	41	45	Y
R59 GF	41	45	Y
R59 FF	42	45	Y
R60 GF	39	45	Y

Receptor	Predicted Noise Levels, Day $L_{Aeq, 1\text{-hour}}$, dB(A))	Criteria, Day dB(A)	Comply (Y/N)
R60 FF	40	45	Y
R61 GF	38	45	Y
R61 FF	39	45	Y
R62 GF	37	45	Y
R62 FF	38	45	Y
R63 GF	36	45	Y
R63 FF	38	45	Y
R64 GF	37	45	Y
R64 FF	39	45	Y
R65 GF	42	45	Y
R65 FF	43	45	Y
R66 GF	41	45	Y
R66 FF	43	45	Y
R67 GF	42	45	Y
R67 FF	44	45	Y
R68 GF	44	45	Y
R68 FF	45	45	Y
R69 GF	45	45	Y
R69 FF	46	45	N
R70 GF	46	45	N
R70 FF	47	45	N
R71 GF	47	45	N
R71 FF	47	45	N
R72 GF	47	45	N
R72 FF	47	45	N
R73 GF	47	48	Y
R73 FF	47	48	Y
R74 GF	47	48	Y
R74 FF	47	48	Y
R75 GF	47	48	Y
R75 FF	47	48	Y
R76 GF	46	48	Y
R76 FF	47	48	Y
R77 GF	46	48	Y
R77 FF	46	48	Y
R78 GF	45	48	Y
R78 FF	45	48	Y
R79 GF	45	48	Y
R79 FF	45	48	Y

Receptor	Predicted Noise Levels, Day $L_{Aeq, 1\text{-hour}}$, dB(A))	Criteria, Day dB(A)	Comply (Y/N)
R80 GF	37	48	Y
R80 FF	42	48	Y
R81 GF	45	48	Y
R81 FF	45	48	Y
R82 GF	45	48	Y
R82 FF	45	48	Y
R83 GF	45	48	Y
R83 FF	45	48	Y
R84 GF	45	48	Y
R84 FF	45	48	Y
R85 GF	44	48	Y
R85 FF	44	48	Y
R86 GF	44	48	Y
R86 FF	44	48	Y
R87 GF	44	48	Y
R87 FF	44	48	Y
R88 GF	43	48	Y
R88 FF	43	48	Y
R89 GF	42	48	Y
R89 FF	43	48	Y
R90 GF	42	48	Y
R90 FF	43	48	Y
R91 GF	42	48	Y
R91 FF	42	48	Y
R92 GF	41	48	Y
R92 FF	42	48	Y
O1 GF	39	42	Y
O2 GF	27	50	Y
O3 GF	38	45	Y
O4 GF	40	45	Y

a) GF = Ground Floor; FF = First Floor, SF = Second Floor

Table 27: Full Predicted Receptor Noise Levels – Scenario 3

Receptor	Predicted Noise Levels, Day $L_{Aeq,\ 1\text{-}hour}$, dB(A))	Criteria, Day dB(A)	Comply (Y/N)
R1 GF	39	48	Y
R1 FF	40	48	Y
R2 GF	48	48	Y
R2 FF	48	48	Y
R3 GF	49	48	N
R3 FF	49	48	N
R4 GF	50	48	N
R4 FF	50	48	N
R5 GF	50	48	N
R5 FF	50	48	N
R6 GF	50	48	N
R6 FF	50	48	N
R7 GF	50	48	N
R7 FF	50	48	N
R8 GF	50	48	N
R8 FF	50	48	N
R9 GF	39	48	Y
R9 FF	41	48	Y
R10 GF	40	48	Y
R10 FF	42	48	Y
R11 GF	43	48	Y
R11 FF	44	48	Y
R12 GF	42	48	Y
R12 FF	43	48	Y
R13 GF	40	48	Y
R13 FF	41	48	Y
R14 GF	38	48	Y
R14 FF	39	48	Y
R15 GF	36	48	Y
R15 FF	37	48	Y
R16 GF	37	48	Y
R16 FF	38	48	Y
R17 GF	37	48	Y
R17 FF	38	48	Y
R18 GF	37	48	Y
R18 FF	38	48	Y
R19 GF	36	48	Y
R19 FF	37	48	Y

Receptor	Predicted Noise Levels, Day $L_{Aeq, 1\text{-hour}}$, dB(A))	Criteria, Day dB(A)	Comply (Y/N)
R20 GF	33	48	Y
R20 FF	34	48	Y
R21 GF	31	48	Y
R21 FF	32	48	Y
R22 GF	30	48	Y
R22 FF	32	48	Y
R23 GF	27	50	Y
R23 FF	29	50	Y
R24 GF	29	50	Y
R24 FF	29	50	Y
R25 GF	29	50	Y
R25 FF	30	50	Y
R26 GF	26	50	Y
R27 GF	30	50	Y
R28 GF	29	50	Y
R29 GF	29	50	Y
R30 GF	32	45	Y
R31 GF	31	45	Y
R32 GF	35	45	Y
R33 GF	35	45	Y
R34 GF	34	45	Y
R35 GF	35	45	Y
R36 GF	34	45	Y
R37 GF	30	45	Y
R37 FF	33	45	Y
R37 SF	35	45	Y
R38 GF	31	45	Y
R38 FF	34	45	Y
R38 SF	37	45	Y
R39 GF	31	45	Y
R39 FF	36	45	Y
R39 SF	37	45	Y
R40 GF	32	45	Y
R40 FF	36	45	Y
R40 SF	37	45	Y
R41 GF	35	45	Y
R41 FF	36	45	Y
R41 SF	36	45	Y
R42 GF	35	45	Y

Receptor	Predicted Noise Levels, Day $L_{Aeq, 1\text{-hour}}$, dB(A))	Criteria, Day dB(A)	Comply (Y/N)
R42 FF	35	45	Y
R42 SF	35	45	Y
R43 GF	33	45	Y
R43 FF	33	45	Y
R43 SF	34	45	Y
R44 GF	32	45	Y
R44 FF	32	45	Y
R44 SF	32	45	Y
R45 GF	34	45	Y
R45 FF	34	45	Y
R46 GF	34	45	Y
R46 FF	35	45	Y
R47 GF	35	45	Y
R47 FF	35	45	Y
R48 GF	35	45	Y
R48 FF	36	45	Y
R49 GF	39	45	Y
R49 FF	39	45	Y
R50 GF	39	45	Y
R50 FF	39	45	Y
R51 GF	39	45	Y
R51 FF	39	45	Y
R52 GF	40	45	Y
R52 FF	40	45	Y
R53 GF	40	45	Y
R53 FF	41	45	Y
R54 GF	39	45	Y
R54 FF	41	45	Y
R55 GF	39	45	Y
R55 FF	40	45	Y
R56 GF	37	45	Y
R56 FF	39	45	Y
R58 GF	38	45	Y
R58 FF	40	45	Y
R57 GF	41	45	Y
R57 FF	42	45	Y
R59 GF	39	45	Y
R59 FF	40	45	Y
R60 GF	39	45	Y

Receptor	Predicted Noise Levels, Day $L_{Aeq, 1\text{-}hour}$, dB(A))	Criteria, Day dB(A)	Comply (Y/N)
R60 FF	39	45	Y
R61 GF	38	45	Y
R61 FF	38	45	Y
R62 GF	36	45	Y
R62 FF	38	45	Y
R63 GF	38	45	Y
R63 FF	39	45	Y
R64 GF	37	45	Y
R64 FF	41	45	Y
R65 GF	43	45	Y
R65 FF	44	45	Y
R66 GF	40	45	Y
R66 FF	42	45	Y
R67 GF	39	45	Y
R67 FF	42	45	Y
R68 GF	40	45	Y
R68 FF	41	45	Y
R69 GF	39	45	Y
R69 FF	40	45	Y
R70 GF	39	45	Y
R70 FF	40	45	Y
R71 GF	38	45	Y
R71 FF	39	45	Y
R72 GF	38	45	Y
R72 FF	39	45	Y
R73 GF	37	48	Y
R73 FF	38	48	Y
R74 GF	37	48	Y
R74 FF	38	48	Y
R75 GF	37	48	Y
R75 FF	38	48	Y
R76 GF	36	48	Y
R76 FF	37	48	Y
R77 GF	36	48	Y
R77 FF	37	48	Y
R78 GF	36	48	Y
R78 FF	36	48	Y
R79 GF	34	48	Y
R79 FF	35	48	Y

Receptor	Predicted Noise Levels, Day $L_{Aeq, 1\text{-hour}}$, dB(A))	Criteria, Day dB(A)	Comply (Y/N)
R80 GF	30	48	Y
R80 FF	33	48	Y
R81 GF	38	48	Y
R81 FF	38	48	Y
R82 GF	38	48	Y
R82 FF	39	48	Y
R83 GF	39	48	Y
R83 FF	39	48	Y
R84 GF	39	48	Y
R84 FF	39	48	Y
R85 GF	39	48	Y
R85 FF	39	48	Y
R86 GF	39	48	Y
R86 FF	40	48	Y
R87 GF	39	48	Y
R87 FF	40	48	Y
R88 GF	39	48	Y
R88 FF	39	48	Y
R89 GF	39	48	Y
R89 FF	39	48	Y
R90 GF	39	48	Y
R90 FF	39	48	Y
R91 GF	38	48	Y
R91 FF	38	48	Y
R92 GF	38	48	Y
R92 FF	38	48	Y
O1 GF	35	42	Y
O2 GF	29	50	Y
O3 GF	41	45	Y
O4 GF	33	45	Y

a) GF = Ground Floor; FF = First Floor, SF = Second Floor

Table 28: Full Predicted Receptor Noise Levels – Scenario 4

Receptor	Predicted Noise Levels, Day $L_{Aeq,\ 1\text{-}hour}$, dB(A))	Criteria, Day dB(A)	Comply (Y/N)
R1 GF	36	48	Y
R1 FF	39	48	Y
R2 GF	42	48	Y
R2 FF	46	48	Y
R3 GF	43	48	Y
R3 FF	47	48	Y
R4 GF	44	48	Y
R4 FF	48	48	Y
R5 GF	44	48	Y
R5 FF	48	48	Y
R6 GF	44	48	Y
R6 FF	48	48	Y
R7 GF	45	48	Y
R7 FF	48	48	Y
R8 GF	45	48	Y
R8 FF	48	48	Y
R9 GF	36	48	Y
R9 FF	39	48	Y
R10 GF	49	48	N
R10 FF	49	48	N
R11 GF	51	48	N
R11 FF	51	48	N
R12 GF	41	48	Y
R12 FF	42	48	Y
R13 GF	41	48	Y
R13 FF	42	48	Y
R14 GF	42	48	Y
R14 FF	42	48	Y
R15 GF	42	48	Y
R15 FF	42	48	Y
R16 GF	41	48	Y
R16 FF	42	48	Y
R17 GF	41	48	Y
R17 FF	42	48	Y
R18 GF	41	48	Y
R18 FF	42	48	Y
R19 GF	42	48	Y
R19 FF	42	48	Y

Receptor	Predicted Noise Levels, Day $L_{Aeq, 1\text{-hour}}$, dB(A))	Criteria, Day dB(A)	Comply (Y/N)
R20 GF	42	48	Y
R20 FF	42	48	Y
R21 GF	42	48	Y
R21 FF	42	48	Y
R22 GF	42	48	Y
R22 FF	42	48	Y
R23 GF	40	50	Y
R23 FF	41	50	Y
R24 GF	31	50	Y
R24 FF	32	50	Y
R25 GF	42	50	Y
R25 FF	42	50	Y
R26 GF	33	50	Y
R27 GF	45	50	Y
R28 GF	47	50	Y
R29 GF	48	50	Y
R30 GF	47	45	N
R31 GF	46	45	N
R32 GF	46	45	N
R33 GF	45	45	Y
R34 GF	45	45	Y
R35 GF	44	45	Y
R36 GF	45	45	Y
R37 GF	43	45	Y
R37 FF	48	45	N
R37 SF	49	45	N
R38 GF	44	45	Y
R38 FF	45	45	Y
R38 SF	50	45	N
R39 GF	43	45	Y
R39 FF	49	45	N
R39 SF	50	45	N
R40 GF	45	45	Y
R40 FF	49	45	N
R40 SF	49	45	N
R41 GF	47	45	N
R41 FF	48	45	N
R41 SF	48	45	N
R42 GF	48	45	N

Receptor	Predicted Noise Levels, Day $L_{Aeq, 1\text{-hour}}$, dB(A))	Criteria, Day dB(A)	Comply (Y/N)
R42 FF	48	45	N
R42 SF	48	45	N
R43 GF	47	45	N
R43 FF	47	45	N
R43 SF	47	45	N
R44 GF	45	45	Y
R44 FF	45	45	Y
R44 SF	45	45	Y
R45 GF	47	45	N
R45 FF	47	45	N
R46 GF	48	45	N
R46 FF	48	45	N
R47 GF	47	45	N
R47 FF	49	45	N
R48 GF	44	45	Y
R48 FF	45	45	Y
R49 GF	53	45	N
R49 FF	53	45	N
R50 GF	53	45	N
R50 FF	53	45	N
R51 GF	53	45	N
R51 FF	53	45	N
R52 GF	50	45	N
R52 FF	53	45	N
R53 GF	48	45	N
R53 FF	49	45	N
R54 GF	42	45	Y
R54 FF	46	45	N
R55 GF	50	45	N
R55 FF	41	45	Y
R56 GF	49	45	N
R56 FF	41	45	Y
R58 GF	45	45	Y
R58 FF	46	45	N
R57 GF	42	45	Y
R57 FF	45	45	Y
R59 GF	51	45	N
R59 FF	51	45	N
R60 GF	44	45	Y

Receptor	Predicted Noise Levels, Day $L_{Aeq, 1\text{-hour}}$, dB(A))	Criteria, Day dB(A)	Comply (Y/N)
R60 FF	46	45	N
R61 GF	44	45	Y
R61 FF	45	45	Y
R62 GF	43	45	Y
R62 FF	45	45	Y
R63 GF	44	45	Y
R63 FF	46	45	N
R64 GF	43	45	Y
R64 FF	45	45	Y
R65 GF	38	45	Y
R65 FF	43	45	Y
R66 GF	36	45	Y
R66 FF	41	45	Y
R67 GF	43	45	Y
R67 FF	43	45	Y
R68 GF	43	45	Y
R68 FF	44	45	Y
R69 GF	44	45	Y
R69 FF	44	45	Y
R70 GF	45	45	Y
R70 FF	45	45	Y
R71 GF	45	45	Y
R71 FF	45	45	Y
R72 GF	45	45	Y
R72 FF	45	45	Y
R73 GF	46	48	Y
R73 FF	46	48	Y
R74 GF	46	48	Y
R74 FF	46	48	Y
R75 GF	45	48	Y
R75 FF	46	48	Y
R76 GF	45	48	Y
R76 FF	46	48	Y
R77 GF	47	48	Y
R77 FF	47	48	Y
R78 GF	46	48	Y
R78 FF	46	48	Y
R79 GF	46	48	Y
R79 FF	46	48	Y

Receptor	Predicted Noise Levels, Day $L_{Aeq, 1\text{-hour}}$, dB(A))	Criteria, Day dB(A)	Comply (Y/N)
R80 GF	36	48	Y
R80 FF	43	48	Y
R81 GF	45	48	Y
R81 FF	45	48	Y
R82 GF	45	48	Y
R82 FF	45	48	Y
R83 GF	45	48	Y
R83 FF	45	48	Y
R84 GF	45	48	Y
R84 FF	45	48	Y
R85 GF	45	48	Y
R85 FF	45	48	Y
R86 GF	44	48	Y
R86 FF	44	48	Y
R87 GF	44	48	Y
R87 FF	44	48	Y
R88 GF	44	48	Y
R88 FF	44	48	Y
R89 GF	44	48	Y
R89 FF	44	48	Y
R90 GF	42	48	Y
R90 FF	44	48	Y
R91 GF	42	48	Y
R91 FF	43	48	Y
R92 GF	41	48	Y
R92 FF	42	48	Y
O1 GF	48	42	N
O2 GF	34	50	Y
O3 GF	37	45	Y
O4 GF	38	45	Y

a) GF = Ground Floor; FF = First Floor, SF = Second Floor

Table 29: Full Predicted Receptor Noise Levels – Scenario 5

Receptor	Predicted Noise Levels $L_{Aeq, 1\text{-hour}}$, dB(A))		Criteria, dB(A)		Comply (Y/N)
	Day	Evening	Day	Evening	
R1 GF	41	40	48	45	Y / Y
R1 FF	42	41	48	45	Y / Y
R2 GF	48	47	48	45	Y / N
R2 FF	49	48	48	45	N / N
R3 GF	50	49	48	45	N / N
R3 FF	50	49	48	45	N / N
R4 GF	51	50	48	45	N / N
R4 FF	51	50	48	45	N / N
R5 GF	51	50	48	45	N / N
R5 FF	51	50	48	45	N / N
R6 GF	50	49	48	45	N / N
R6 FF	51	50	48	45	N / N
R7 GF	51	50	48	45	N / N
R7 FF	51	50	48	45	N / N
R8 GF	51	50	48	45	N / N
R8 FF	51	50	48	45	N / N
R9 GF	41	41	48	45	Y / Y
R9 FF	44	43	48	45	Y / Y
R10 GF	42	38	48	45	Y / Y
R10 FF	45	43	48	45	Y / Y
R11 GF	47	43	48	45	Y / Y
R11 FF	48	44	48	45	Y / Y
R12 GF	47	43	48	45	Y / Y
R12 FF	48	44	48	45	Y / Y
R13 GF	47	43	48	45	Y / Y
R13 FF	48	45	48	45	Y / Y
R14 GF	48	44	48	45	Y / Y
R14 FF	49	46	48	45	N / N
R15 GF	48	44	48	45	Y / Y
R15 FF	49	46	48	45	N / N
R16 GF	48	45	48	45	Y / Y
R16 FF	50	47	48	45	N / N
R17 GF	48	46	48	45	N / N
R17 FF	50	47	48	45	N / N
R18 GF	49	46	48	45	N / N
R18 FF	50	48	48	45	N / N
R19 GF	49	46	48	45	N / N
R19 FF	50	48	48	45	N / N

Receptor	Predicted Noise Levels $L_{Aeq, 1\text{-hour}}$, dB(A))		Criteria, dB(A)		Comply (Y/N)
	Day	Evening	Day	Evening	
R20 GF	49	46	48	45	N / N
R20 FF	50	48	48	45	N / N
R21 GF	49	46	48	45	N / N
R21 FF	50	47	48	45	N / N
R22 GF	49	45	48	45	N / Y
R22 FF	49	46	48	45	N / N
R23 GF	46	42	50	45	Y / Y
R23 FF	48	44	50	45	Y / Y
R24 GF	39	36	50	45	Y / Y
R24 FF	39	36	50	45	Y / Y
R25 GF	39	36	50	45	Y / Y
R25 FF	40	36	50	45	Y / Y
R26 GF	41	38	50	45	Y / Y
R27 GF	44	39	50	45	Y / Y
R28 GF	45	39	50	45	Y / Y
R29 GF	48	39	50	45	Y / Y
R30 GF	44	39	45	44	Y / Y
R31 GF	42	39	45	44	Y / Y
R32 GF	42	39	45	44	Y / Y
R33 GF	42	39	45	44	Y / Y
R34 GF	42	39	45	44	Y / Y
R35 GF	42	38	45	44	Y / Y
R36 GF	44	39	45	44	Y / Y
R37 GF	39	33	45	44	Y / Y
R37 FF	41	37	45	44	Y / Y
R37 SF	43	40	45	44	Y / Y
R38 GF	40	35	45	44	Y / Y
R38 FF	42	40	45	44	Y / Y
R38 SF	44	42	45	44	Y / Y
R39 GF	41	37	45	44	Y / Y
R39 FF	44	41	45	44	Y / Y
R39 SF	45	43	45	44	Y / Y
R40 GF	42	38	45	44	Y / Y
R40 FF	45	42	45	44	Y / Y
R40 SF	45	43	45	44	Y / Y
R41 GF	43	40	45	44	Y / Y
R41 FF	44	41	45	44	Y / Y
R41 SF	45	42	45	44	Y / Y
R42 GF	44	41	45	44	Y / Y

Receptor	Predicted Noise Levels $L_{Aeq, 1\text{-hour}}$, dB(A))		Criteria, dB(A)		Comply (Y/N)
	Day	Evening	Day	Evening	
R42 FF	44	41	45	44	Y / Y
R42 SF	44	41	45	44	Y / Y
R43 GF	42	40	45	44	Y / Y
R43 FF	42	40	45	44	Y / Y
R43 SF	42	40	45	44	Y / Y
R44 GF	41	38	45	44	Y / Y
R44 FF	41	38	45	44	Y / Y
R44 SF	41	38	45	44	Y / Y
R45 GF	41	40	45	44	Y / Y
R45 FF	42	40	45	44	Y / Y
R46 GF	41	40	45	44	Y / Y
R46 FF	42	41	45	44	Y / Y
R47 GF	41	41	45	44	Y / Y
R47 FF	42	41	45	44	Y / Y
R48 GF	41	40	45	44	Y / Y
R48 FF	42	41	45	44	Y / Y
R49 GF	46	46	45	44	N / N
R49 FF	46	46	45	44	N / N
R50 GF	46	46	45	44	N / N
R50 FF	46	46	45	44	N / N
R51 GF	45	45	45	44	Y / N
R51 FF	45	45	45	44	Y / N
R52 GF	45	44	45	44	Y / Y
R52 FF	45	44	45	44	Y / N
R53 GF	44	43	45	44	Y / Y
R53 FF	44	44	45	44	Y / Y
R54 GF	39	38	45	44	Y / Y
R54 FF	43	42	45	44	Y / Y
R55 GF	37	36	45	44	Y / Y
R55 FF	40	39	45	44	Y / Y
R56 GF	35	35	45	44	Y / Y
R56 FF	39	39	45	44	Y / Y
R58 GF	36	36	45	44	Y / Y
R58 FF	39	38	45	44	Y / Y
R57 GF	38	38	45	44	Y / Y
R57 FF	40	39	45	44	Y / Y
R59 GF	38	38	45	44	Y / Y
R59 FF	40	39	45	44	Y / Y
R60 GF	39	38	45	44	Y / Y

Receptor	Predicted Noise Levels $L_{Aeq, 1\text{-hour}}$, dB(A))		Criteria, dB(A)		Comply (Y/N)
	Day	Evening	Day	Evening	
R60 FF	41	39	45	44	Y / Y
R61 GF	39	38	45	44	Y / Y
R61 FF	41	39	45	44	Y / Y
R62 GF	40	37	45	44	Y / Y
R62 FF	41	39	45	44	Y / Y
R63 GF	40	36	45	44	Y / Y
R63 FF	41	38	45	44	Y / Y
R64 GF	40	35	45	44	Y / Y
R64 FF	41	38	45	44	Y / Y
R65 GF	41	40	45	44	Y / Y
R65 FF	43	41	45	44	Y / Y
R66 GF	38	38	45	44	Y / Y
R66 FF	41	40	45	44	Y / Y
R67 GF	39	39	45	44	Y / Y
R67 FF	41	41	45	44	Y / Y
R68 GF	40	40	45	44	Y / Y
R68 FF	42	42	45	44	Y / Y
R69 GF	41	41	45	44	Y / Y
R69 FF	42	42	45	44	Y / Y
R70 GF	42	42	45	44	Y / Y
R70 FF	43	42	45	44	Y / Y
R71 GF	42	42	45	44	Y / Y
R71 FF	43	43	45	44	Y / Y
R72 GF	42	42	45	44	Y / Y
R72 FF	43	43	45	44	Y / Y
R73 GF	43	42	48	45	Y / Y
R73 FF	43	43	48	45	Y / Y
R74 GF	42	42	48	45	Y / Y
R74 FF	43	43	48	45	Y / Y
R75 GF	42	42	48	45	Y / Y
R75 FF	43	42	48	45	Y / Y
R76 GF	42	42	48	45	Y / Y
R76 FF	42	42	48	45	Y / Y
R77 GF	41	41	48	45	Y / Y
R77 FF	42	41	48	45	Y / Y
R78 GF	41	41	48	45	Y / Y
R78 FF	41	41	48	45	Y / Y
R79 GF	40	40	48	45	Y / Y
R79 FF	41	40	48	45	Y / Y

Receptor	Predicted Noise Levels $L_{Aeq, 1\text{-hour}}$, dB(A))		Criteria, dB(A)		Comply (Y/N)
	Day	Evening	Day	Evening	
R80 GF	34	34	48	45	Y / Y
R80 FF	39	38	48	45	Y / Y
R81 GF	42	42	48	45	Y / Y
R81 FF	43	42	48	45	Y / Y
R82 GF	42	42	48	45	Y / Y
R82 FF	43	42	48	45	Y / Y
R83 GF	43	42	48	45	Y / Y
R83 FF	43	42	48	45	Y / Y
R84 GF	43	42	48	45	Y / Y
R84 FF	43	42	48	45	Y / Y
R85 GF	42	42	48	45	Y / Y
R85 FF	43	42	48	45	Y / Y
R86 GF	42	42	48	45	Y / Y
R86 FF	43	42	48	45	Y / Y
R87 GF	42	41	48	45	Y / Y
R87 FF	43	42	48	45	Y / Y
R88 GF	42	41	48	45	Y / Y
R88 FF	42	41	48	45	Y / Y
R89 GF	42	41	48	45	Y / Y
R89 FF	42	41	48	45	Y / Y
R90 GF	41	40	48	45	Y / Y
R90 FF	42	40	48	45	Y / Y
R91 GF	41	40	48	45	Y / Y
R91 FF	41	40	48	45	Y / Y
R92 GF	41	40	48	45	Y / Y
R92 FF	41	40	48	45	Y / Y
O1 GF	43	41	42	41	N / Y
O2 GF	43	39	50	50	Y / Y
O3 GF	43	42	45	44	Y / Y
O4 GF	37	36	45	44	Y / Y

b) GF = Ground Floor; FF = First Floor, SF = Second Floor