

Proposed Lot 11/12, 813 Wallgrove Road, Eastern Creek

Development Application Environmental Noise Impact Assessment

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1 EXECUTIVE SUMMARY

Environmental emission assessment for the proposed Lot 11 & Lot 12 within Gazcorp Industrial Estate at 813 Wallgrove Road, Horsley Park has been reviewed based on the latest requirements by DPIE comments received by this office on 16 March 2022. The findings are summarised below:

- New background noise logging has been carried out by this office by setting up 3 additional long term noise monitors along the nearest residential dwellings adjacent to the southern boundary of the project site. Detailed the monitor locations and updated Rating Background Noise Levels have been presented in Section 7 of this report.
- Noise emission criteria for the operation of the project site has been updated based on RBL above and requirements of condition A13 of SSD-5248 development consent.
- Soundplan modelling has been carried out for the proposed operational details of Lot 11 & Lot 12. The modelling results detailed in Section 9 fully satisfy the requirements of the updated noise emission criteria in SSD-5248 development consent as modified by SSD-5248-MOD-1.
- Cumulative noise impact from overall operation of Gazcorp Industrial Estate at 813 Wallgrove Rd has been updated in Section 10 of this report by combining the operational noise of Lot 11/12 with remaining lots. The assumption of master plan report for truck movements has been adopted. The modelled overall noise level $dB(A)_{Leq}$ to the nearest residential receivers satisfy the updated noise emission criteria based on requirements of Condition A13 of SSD-5428 development consent.

2 INTRODUCTION

Acoustic Logic has been commissioned by DHL NSW to prepare an Environmental Noise Impact Assessment to support the proposed warehouse facility Lot 11 & Lot 12 located within Gazcorp Industrial Estate at 813 Wallgrove Road, Horsley Park.

This report has been updated to include an assessment of the combined noise impacts from the following:

- Onsite activities; and
- Vehicles on Wallgrove Road

Acoustic requirements by Modification of Development Consent SSD-5248-Mod-1 have been included in this assessment.

3 DESCRIPTION OF THE PROJECT SITE

The site is located at 813 Wallgrove Road, Horsley Park. It is located within Fairfield City Council's LGA. The proposed warehouse facility will comprise:

- 32,000m² of warehouse area
- 1,015m² of office area
- 180m² of VAS amenity area
- 200m² of dock office area
- 210 car parking spaces

Detailed area schedule is below:

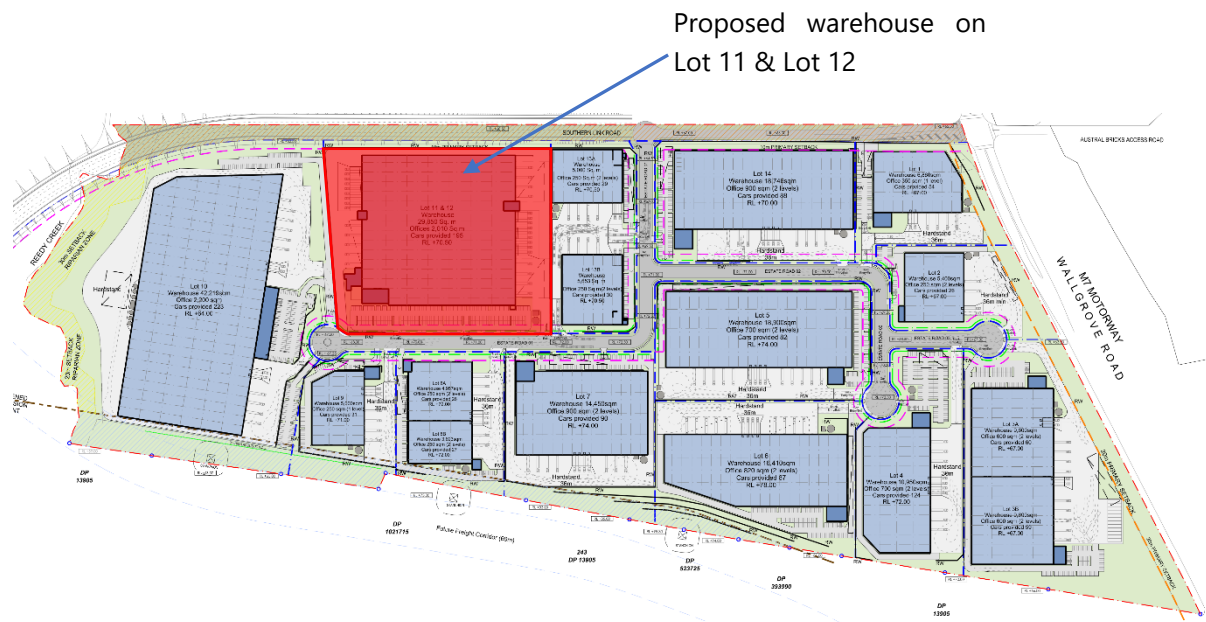


Figure 1 Area Schedule for the Project Site

The nearest residential receivers are located south of the site with industrial receivers situated to the south and north, beyond the Sydney Water Supply Pipeline Easement. The nearest receivers are detailed below:

Receiver 1: Residential receivers located at 138, 142, 144 and 146 Burley Road, Horsley Park south of the project site.

Receiver 2: Residential receivers located at 28, 34, 48, 50, 58-64 and 56-104 Burley Road, Horsley Park south of the project site.

Receiver 3: Residential receivers located at 2A, 2B & 2C Burley Road, Horsley Park south of the project site.

Receiver 4: Industrial receivers located at 1-21 Shale Place and 1-14 Clay Place, Horsley Park north of the project site.

Receiver 5: Industrial receiver located at 785-811 Wallgrove Road, Horsley Park south of the project site.

Receiver 6: Residential receiver located at 152-170 Burley Road, Horsley Park south-west of the project site.

See Figure 2 below for an aerial photo of the project site, nearest receivers and the noise measurement locations.

Approximate Location of the Project Site



Figure 2: Aerial View and Noise Measurement Locations

- Unattended Noise Monitor
- Attended Noise Measurement

- Residential Receiver
- Industrial Receiver

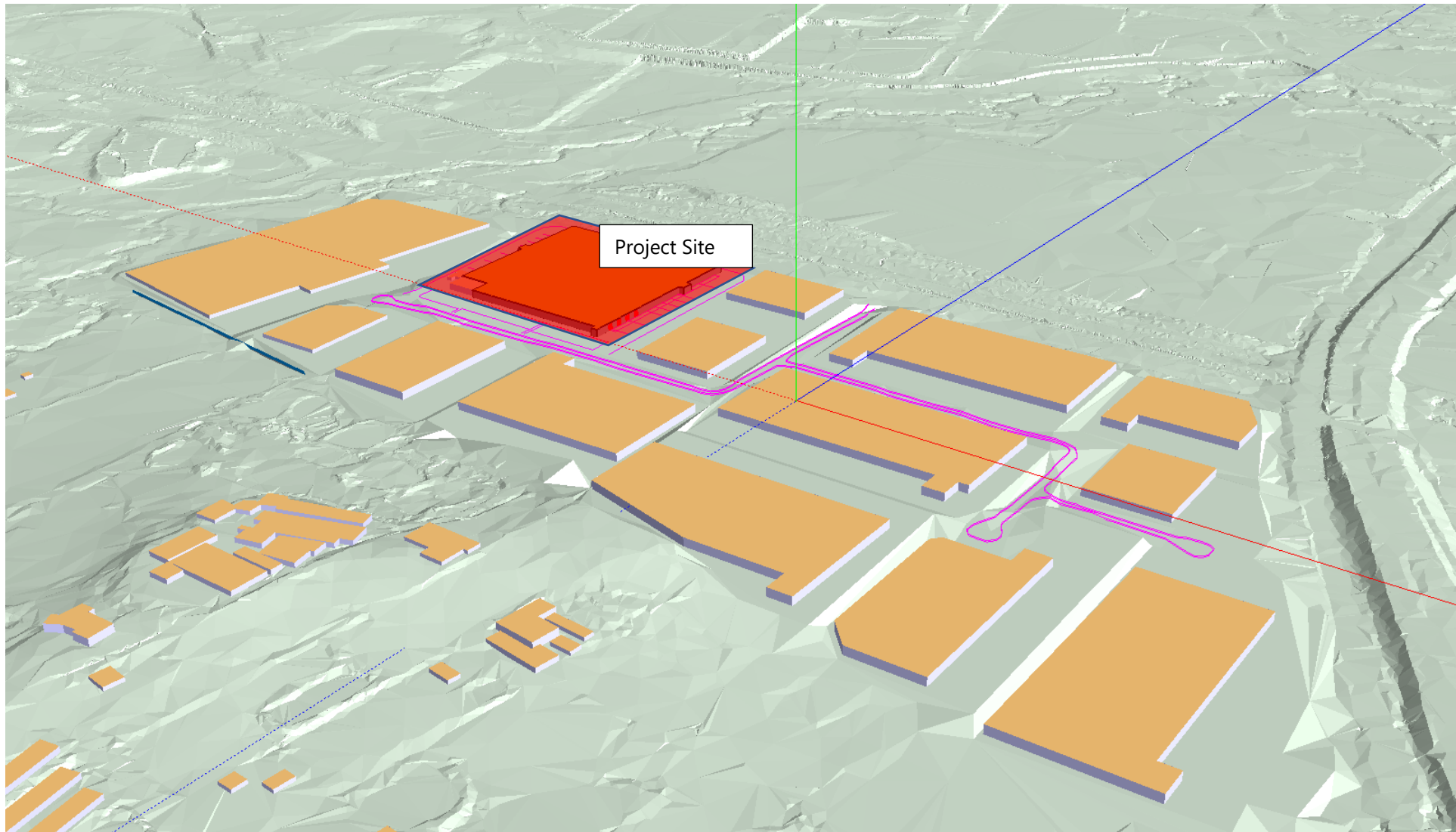


Figure 3: Topography of the Project Site and Noise Receivers

4 REQUIREMENTS BY SSDA

The following noise emission criteria have been detailed in SSD 5248 dated 11 November 2019- Part A Conditions of Consent for Concept Proposal.

NOISE LIMITS

- A13. The Applicant must ensure the Development does not exceed the noise limits provided in **Table 3** below or the project specific noise trigger levels determined by a noise verification required by condition A13A, whichever is lower, at and the receiver locations as shown in **Figure 6** in **Appendix 5**:

Table 3 Operational Noise Limits for the Concept Plan Project Specific Noise Limits dB(A)

Location	Day	Evening	Night	
	L _{Aeq} (15 minute)	L _{Aeq} (15 minute)	L _{Aeq} (15 minute)	L _{A1} (1 minute)
Residential receivers to the south-west	50-48	50-43	45-38	63-52
Industrial Developments to the south	51	51	51	

Note: Noise generated by the *Stage 1* Development is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Noise Policy for Industry (2017) (as may be updated or replaced from time to time). Refer to the plan in Appendix 5 for the location of residential receivers.

APPENDIX 5 SENSITIVE NOISE RECEIVER AND NOISE WALL LOCATIONS



5 NOISE DESCRIPTORS

In the case of environmental noise three principle measurement parameters are used, namely L_{10} , L_{90} and L_{eq} .

The L_{10} and L_{90} measurement parameters are statistical levels that represent the average maximum and average minimum noise levels respectively, over the measurement interval.

The L_{10} parameter is commonly used to measure noise produced by a particular intrusive noise source since it represents the average of the loudest noise levels produced by the source.

Conversely, the L_{90} level (which is commonly referred to as the background noise level) represents the noise level heard in the quieter periods during a measurement interval. The L_{90} parameter is used to set the allowable noise level for new, potentially intrusive noise sources since the disturbance caused by the new source will depend on how audible it is above the pre-existing noise environment, particularly during quiet periods, as represented by the L_{90} level.

The L_{eq} parameter represents the average noise energy during a measurement period. This parameter is derived by integrating the noise levels measured over the measurement period. L_{eq} is important in the assessment of traffic noise impact as it closely corresponds with human perception of a changing noise environment; such is the character of traffic noise.

Current practice favours the L_{eq} parameter as a means of measuring traffic noise, whereas the L_{10} parameter has been used in the past and is still incorporated in some codes. For the reasons outlined above, the L_{90} parameter is not used to assess traffic noise intrusion.

6 REQUIREMENTS BY MODIFICATION OF DEVELOPMENT CONSENT SSD-5248-MOD-1

A13. The Applicant must ensure the Development does not exceed noise limits in **Table 3** below or the project specific noise trigger levels determined by a noise verification required by condition A13A, whichever is lower, at the receivers shown in **Figure 6** in **Appendix 5**:

Table 3: Operational Noise Limits for the Concept Plan (dB(A))

Location	Day (L _{Aeq} , 15 min)	Evening (L _{Aeq} , 15 min)	Night (L _{Aeq} , 15 min)	Night (L _{Amax})
Residential receivers	48	43	38	52
Industrial Development to the south	51	51	51	

Note: Noise generated by the Stage 1 Development is to be measured in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the *Noise Policy for Industry (2017)* (as may be updated or replaced from time to time). Refer to the plan in Appendix 5 for the location of residential sensitive receivers.

Operational Noise Verification

A13A Prior to the commencement of bulk earthworks, the Applicant must prepare a noise verification report in accordance with the *Noise Policy for Industry (2017)* to the satisfaction of the Planning Secretary. The noise verification report must:

- (a) detail methodology for recording background noise levels, including locations of sensitive receivers
- (b) detail background noise levels at sensitive receivers; and
- (c) establish project specific noise trigger levels in accordance with the methodology set out in the *Noise Policy for Industry (2017)*.

7 ADDITIONAL BACKGROUND NOISE MEASUREMENTS

Background noise checking has been carried out by this office by setting up three noise monitors at the following locations:



Figure 6 Background Noise Checking Locations

The following tables summarise the assessment background noise levels (ABL) for each location. Where no ABL is indicated, that period was affected by adverse weather or other extraneous noise and excluded from the ABL calculation.

Table 1 – NPfl Assessment Background Noise Levels Location 1

Location	Date	ABL		
		Day	Evening	Night
L1	Thursday 13 January 2022	-	43	43
	Friday 14 January 2022	41	41	42
	Saturday 15 January 2022	40	41	42
	Sunday 16 January 2022	40	42	42
	Monday 17 January 2022	42	41	41
	Tuesday 18 January 2022	-	-	-
	Wednesday 19 January 2022	-	43	42
	Thursday 20 January 2022	-	43	42
	Friday 21 January 2022	42	42	41
	Saturday 22 January 2022	41	41	-
	Sunday 23 January 2022	39	44	-
	Monday 24 January 2022	39	43	41
	Tuesday 25 January 2022	41	41	41
	Wednesday 26 January 2022	-	-	-
	RBL	40	42	41

Table 2 – NPfl Assessment Background Noise Levels Location 2

Location	Date	ABL		
		Day	Evening	Night
L2	Thursday 13 January 2022	-	44	36
	Friday 14 January 2022	42	42	38
	Saturday 15 January 2022	40	42	40
	Sunday 16 January 2022	39	43	42
	Monday 17 January 2022	41	41	43
	Tuesday 18 January 2022	-	-	-
	Wednesday 19 January 2022	-	44	41
	Thursday 20 January 2022	-	42	38
	Friday 21 January 2022	45	40	37
	Saturday 22 January 2022	44	42	-
	Sunday 23 January 2022	41	42	-
	Monday 24 January 2022	40	44	37
	Tuesday 25 January 2022	42	42	36
	Wednesday 26 January 2022	39	42	36
	Thursday 27 January 2022	42	42	37
	Friday 28 January 2022	43	42	42
	Saturday 29 January 2022	40	40	38
	Sunday 30 January 2022	40	41	40
	Monday 31 January 2022	40	40	42
	Tuesday 01 February 2022	40	43	-
	Wednesday 02 February 2022	-	41	36
	Thursday 03 February 2022	44	-	38
	Friday 04 February 2022	-	-	37
	Saturday 05 February 2022	-	42	35
	Sunday 06 February 2022	-	-	36
	RBL	40	42	37

Table 3 – NPfl Assessment Background Noise Levels Location 3

Location	Date	ABL		
		Day	Evening	Night
L3	Thursday 13 January 2022	-	50	43
	Friday 14 January 2022	48	51	43
	Saturday 15 January 2022	44	48	42
	Sunday 16 January 2022	42	48	42
	Monday 17 January 2022	46	48	44
	Tuesday 18 January 2022	-	-	-
	Wednesday 19 January 2022	-	47	44
	Thursday 20 January 2022	-	48	43
	Friday 21 January 2022	51	48	41
	Saturday 22 January 2022	48	48	-
	Sunday 23 January 2022	44	48	-
	Monday 24 January 2022	47	51	45
	Tuesday 25 January 2022	52	51	42
	Wednesday 26 January 2022	43	50	45
	Thursday 27 January 2022	52	51	45
	Friday 28 January 2022	50	51	44
	Saturday 29 January 2022	47	47	41
	Sunday 30 January 2022	46	48	42
	Monday 31 January 2022	46	50	45
	Tuesday 01 February 2022	43	49	-
	Wednesday 02 February 2022	-	47	41
	Thursday 03 February 2022	48	-	42
	Friday 04 February 2022	-	-	-
	RBL	46	48	42

The measured background noise data have been graphed and attached to this report. Rating background noise levels have been determined based on the requirements of the NSW EPA Noise Policy for Industry. The lowest RBL of the three locations for each time period has been adopted and the summarised Rating Background noise Levels are presented in Tables below.

Table 4 – Measured Rating Background Noise Level

Time Period	Rating Background Noise Level dB(A)L90
Day	40
Evening	40
Night	37

- Day: 7am to 6pm Monday to Saturday; 8am to 6pm Sunday and Public Holidays.
- Evening: 6pm to 10pm every day
- Night: 10pm to 7am Monday to Saturday and 10pm to 8am Sunday and public holidays.

8 NOISE EMISSION OBJECTIVES

Fairfield City council does not have any specific controls for noise emissions from an industrial development, the project criteria is therefore determined based on the noise emission requirements of the NSW EPA Noise Policy for Industry and the NSW Road Noise Policy.

8.1 NSW EPA NOISE POLICY FOR INDUSTRY

The NSW EPA Noise Policy for Industry has two criteria's which need to be satisfied namely Intrusiveness and Amenity.

The EPA Noise Policy for Industry sets out acceptable noise levels for various localities. Table 2.2 on page 11 of the policy indicates 3 categories to distinguish different residential areas which are rural, suburban and urban. Under the policy, the nearest residence would be assessed against the suburban criteria.

Noise levels are to be assessed at the property boundary or nearby dwelling, or at the balcony or façade of an apartment.

8.1.1 Intrusiveness Criteria

The guideline is intended to limit the audibility of noise emissions at residential receivers and requires that noise emissions measured using the L_{eq} descriptor not exceed the background noise level by more than 5dB(A). Where applicable, the intrusive noise level should be penalised (increased) to account for any annoying characteristics such as tonality.

Background noise levels adopted are presented in Section 5 of this report. Noise emissions from the site should comply with the noise levels presented below when measured at nearby property boundary.

Intrusive criteria based on the RBL recommended by EPA for project site are detailed in table below.

Table 5 – NPfl Intrusiveness Criteria

Time of day	Background Noise Level dB(A)L₉₀	Intrusiveness Criteria (Background+5dB(A)) dB(A)L_{eq}
Day (7am-6pm)	40	45
Evening (6pm-10pm)	40*	45
Night (10pm-7am)	37	42

*Note: measured background noise level during evening is higher than day therefore the RBL of day time period is adopted for setting up noise emission criteria.

8.1.2 Project Amenity Criterion

The guideline is intended to limit the absolute noise level from all noise sources to a level that is consistent with the general environment.

For the purposes of this condition:

- Day is defined as the period from 7am to 6pm Monday to Saturday and 8am to 6pm Sundays and Public Holidays.
- Evening is defined as the period from 6pm to 10pm.
- Night is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sunday and public holidays.

The NPfl requires Project Amenity Noise Levels to be calculated below:

$$L_{Aeq, 15 \text{ min}} = \text{Recommended Amenity Noise Level} - 5 \text{ dB(A)} + 3 \text{ dB(A)}$$

Pursuant to the NPfl, the residential receivers in the vicinity would be considered suburban Corresponding Project Amenity Criteria are presented below.

Table 6 –NPfl Project Amenity Criteria

Type of Receiver	Time of Day	Recommended Amenity Noise Level dB(A) L_{eq}	Project Amenity Noise Level dB(A) $L_{eq, 15min}$
Residential (Suburban)	Day (7am-6pm)	55	53
	Evening (6pm-10pm)	45	43
	Night (10pm-7am)	40	38
Industrial	When in use	68	

8.1.3 Sleep Arousal Criteria

Section 2.5 of NPfl 2017 recommended the following noise limit to mitigate sleeping disturbance:

Where the subject development/ premises night -time noise levels at a residential location exceed:

- $L_{Aeq, 15min}$ 40 dB(A) or the prevailing RBL plus 5 dB, whichever is the greater, and/or
- L_{AFmax} 52 dB(A) or the prevailing RBL plus 15 dB, whichever is the greater,

A detailed maximum noise level even assessment should be undertaken.

Table 7 - Sleep Arousal Emergence Criteria (Night)

Location	Rating Background Noise Level (Night) - dB(A) L_{90}	Emergence Level
All Potentially Affected Residential Properties	37	42 dB(A) $L_{eq, 15min}$; 52 dB(A) $L_{max, F}$

8.1.4 Summary of Noise Emission Criteria

The noise emission criteria from the operation of the industrial warehouse facilities have been summarised below.

Table 8 - Summarised Noise Emission Criteria

Location	Time of Day	Noise Objectives*
Residential Boundaries around the Project site	Day (7am-6pm)	45 dB(A) $L_{eq, 15min}$
	Evening (6pm-10pm)	43 dB(A) $L_{eq, 15min}$
	Night (10pm-7am)	38 dB(A) $L_{eq, 15min}$ 52 dB(A) $L_{max, F}$
Industrial Boundaries	When in use	68 dB(A) L_{eq}

*Note: background noise levels during the evening time period is higher than during the daytime period, therefore; the same background noise level are used to setup noise emission criteria based on requirements of the EPA NPfl.

The operation noise on site, primarily mechanical plant and carpark/loading dock should comply with the above noise emission criteria.

8.2 NSW ROAD NOISE POLICY

This policy provides guidelines for the assessment of traffic noise generated by new developments on existing roads. Criteria set out by the RNP with regard to land use developments with potential to create additional traffic on local roads is detailed in the table below.

Table 9 - Road Noise Policy Criteria (Section 2.3 - Table 3)

Road category Type of project / land use		Assessment criteria – dB(A)	
		Day (7 a.m. – 10 p.m.)	Night 10 p.m. – 7 a.m.
Sub-Arterial	3. Existing residences affected by additional traffic on existing sub-arterial roads generated by land use developments	$L_{Aeq(15hour)}$ 60 (external)	$L_{Aeq(9hour)}$ 55 (external)

Section 3.4- Applying the assessment and relative increase criteria:

In assessing feasible and reasonable mitigation measures, an increase of up to 2 dB represents a minor impact that is considered barely perceptible to the average person

9 OPERATIONAL NOISE EMISSION ASSESSMENT OF LOT 11 & LOT 12

Noise emissions associated with the development have been assessed for vehicle movements, internal distribution and manufacturing and external loading dock activities. Predicted noise levels at residential facades have been determined using the SoundPLAN noise modelling software and the assumptions are detailed below.

The most affected sensitive receivers are the residential houses to the south-west of the site. Noise levels at the industrial receivers adjacent to the site to the south are also predicted.

Operational noise impacts have been assessed individually for each activity and combined for a worst-case accumulative noise scenario.

9.1 TRAFFIC GENERATION

The following information has been provided in Transport Assessment report prepared by Ason Group dated 29/10/21 with reference number: P1877r01

TABLE 10 PROJECTED TRAFFIC GENERATION

Period	Light Vehicles			Visitors	Heavy Vehicles			All Vehicles
	Inbound	Outbound	Total		Inbound	Outbound	Total	
12:00 AM - 1:00 AM	0	0	0	0	0	0	0	0
1:00 AM - 2:00 AM	0	0	0	0	0	0	0	0
2:00 AM - 3:00 AM	0	0	0	0	0	0	0	0
3:00 AM - 4:00 AM	0	0	0	0	0	0	0	0
4:00 AM - 5:00 AM	0	0	0	0	0	0	0	0
5:00 AM - 6:00 AM	29	0	29	3	4	1	5	37
6:00 AM - 7:00 AM	20	0	20	2	6	14	20	42
7:00 AM - 8:00 AM	5	0	5	1	6	7	13	19
8:00 AM - 9:00 AM	10	0	10	1	6	6	12	23
9:00 AM - 10:00 AM	17	0	17	2	6	5	11	30
10:00 AM - 11:00 AM	0	0	0	0	6	5	11	11
11:00 AM - 12:00 PM	0	0	0	0	6	4	10	10
12:00 PM - 1:00 PM	0	0	0	0	2	1	3	3
1:00 PM - 2:00 PM	7	0	7	1	2	4	6	14
2:00 PM - 3:00 PM	0	29	29	3	1	2	3	35
3:00 PM - 4:00 PM	0	20	20	2	1	1	2	24
4:00 PM - 5:00 PM	0	5	5	1	1	3	4	10
5:00 PM - 6:00 PM	0	10	10	1	1	2	3	14
6:00 PM - 7:00 PM	0	17	17	2	0	1	1	20
7:00 PM - 8:00 PM	0	0	0	0	0	0	0	0
8:00 PM - 9:00 PM	0	0	0	0	0	0	0	0
9:00 PM - 10:00 PM	0	7	7	1	0	0	0	8
10:00 PM - 11:00 PM	0	0	0	0	0	0	0	0
11:00 PM - 12:00 AM	0	0	0	0	0	0	0	0
TOTAL	88	88	176	20	48	56	104	300

9.2 NOISE MODELLING PARAMETERS

The assessment of noise emissions from the different operational noise activities have been assessed using the following assumptions detailed in the matrix below.

Table 10 – Assumed Operational Noise Levels

Noise Source	Sound Power Level dB(A)	Speed	Area Assessed	Operation Time Duration
Semi-trailer	105	10km/h	Loading dock	-
	110	5Km/h reverse beep	Loading dock area	-
	110	50km/h	Wallgrove Road	-
Medium rigid dual axle trucks	100	10km/h	Loading dock	-
	105	50km/h	Wallgrove Road	-
Cars/Lt Vehicles	90	20km/h	Internal Road	-
	90	70km/h	Wallgrove Road	-
Loading Dock - Forklift operation	100 per forklift assuming reversing alarms	-	Loading dock	30min / hour external to building (peak hour)

Information used for modelling:

- Day time: the worst one hour is 7am to 8am based on traffic report with 13 trucks (Semi Trailer) and 6 cars.
- Evening time: the worst one hour is 6pm to 7pm with 1 truck (semi-trailer) and 19 cars.
- Night time: the worst one hour is 6am to 7am with 2 trucks (semi-trailer) and 22 cars.
- Forklift running at loading dock area

The typical noise source location and SWL have been marked below for modelling:

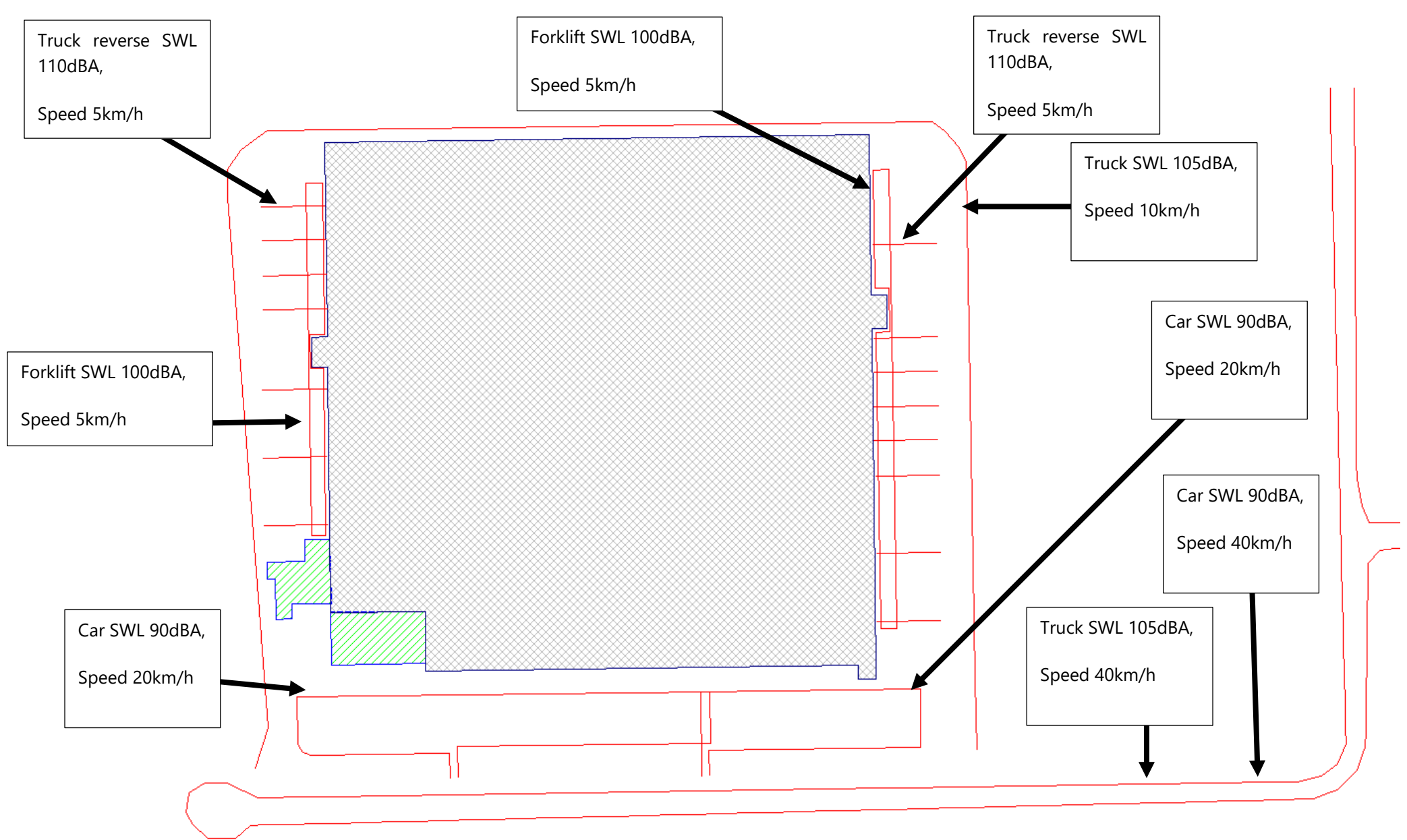


Figure 4- Sound Source Location and Data

9.3 SOUNDPLAN MODELLING

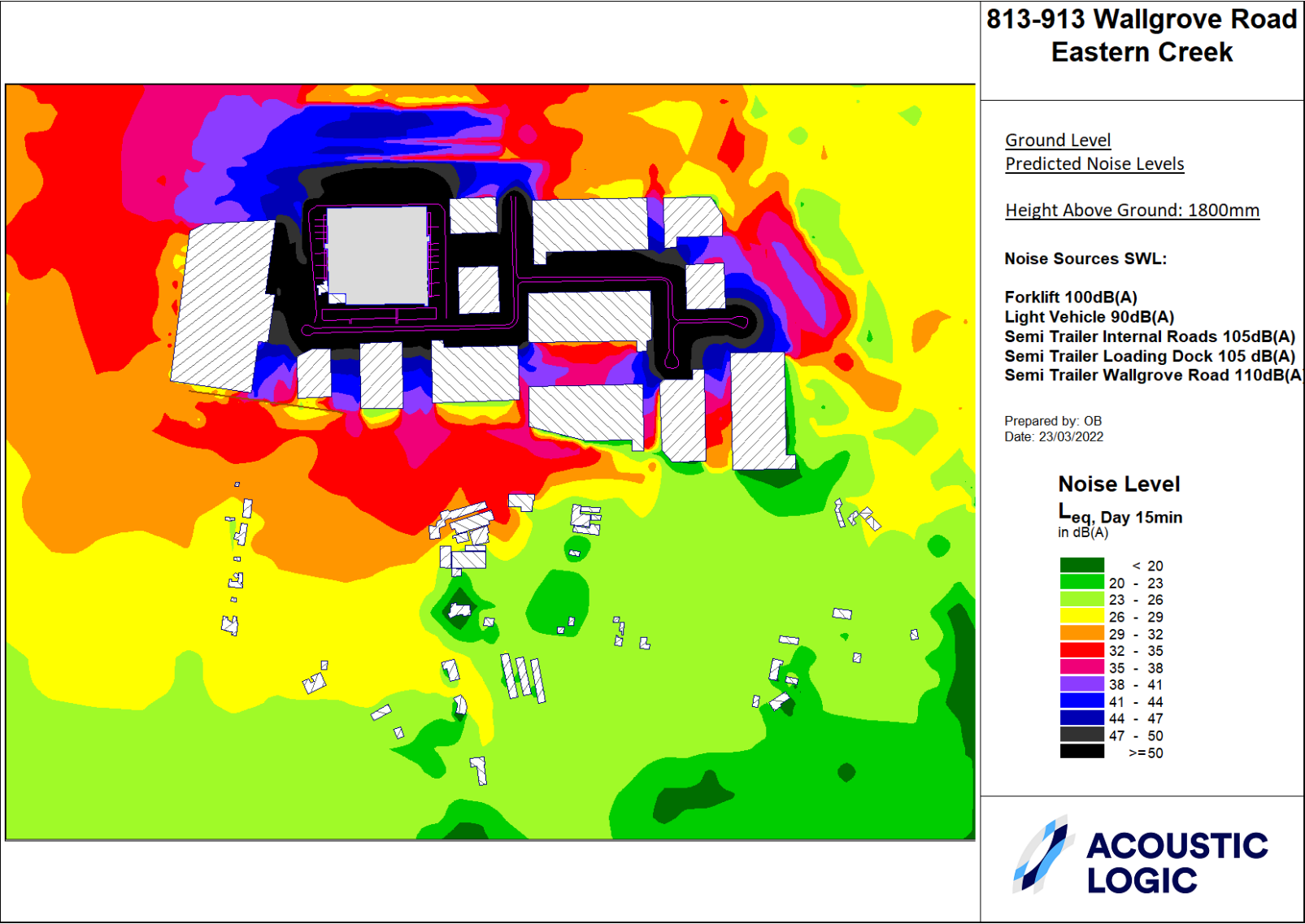
Noise emissions from the operation of the proposed operation have been predicted at the receiver locations using SoundPlan™ modelling software implementing the ISO 9613-2:1996 *"Acoustics – Attenuation of Sound During Propagation Outdoors – Part 2: General Method of Calculation"* noise propagation Standard. Sound Power Level data used in the SoundPlan™ modelling is based on measurement results by this office. The following weather conditions are included in the modelling based on the requirements of ISO9613:

- Wind speed of between 1m/s and 5m/s.
- 10 degrees with 70% relative humidity.

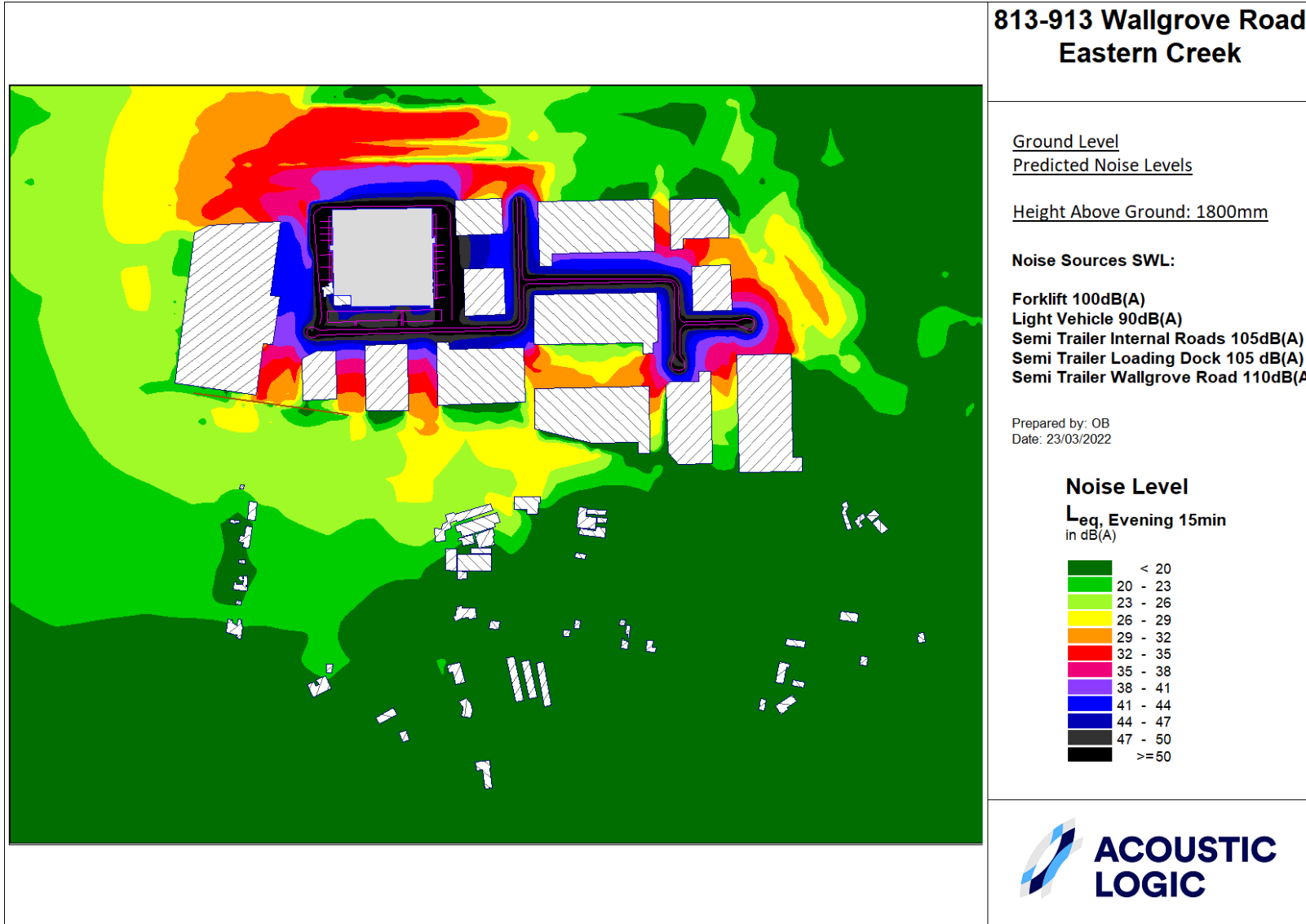
9.3.1 Onsite Operational Noise Model

The modelling results are presented below:

Day Time Operational Noise Modelling



Evening Time Operational Noise Modelling



Night Time Operational Noise Modelling

813-913 Wallgrove Road Eastern Creek

Ground Level
Predicted Noise Levels

Height Above Ground: 1800mm

Noise Sources SWL:

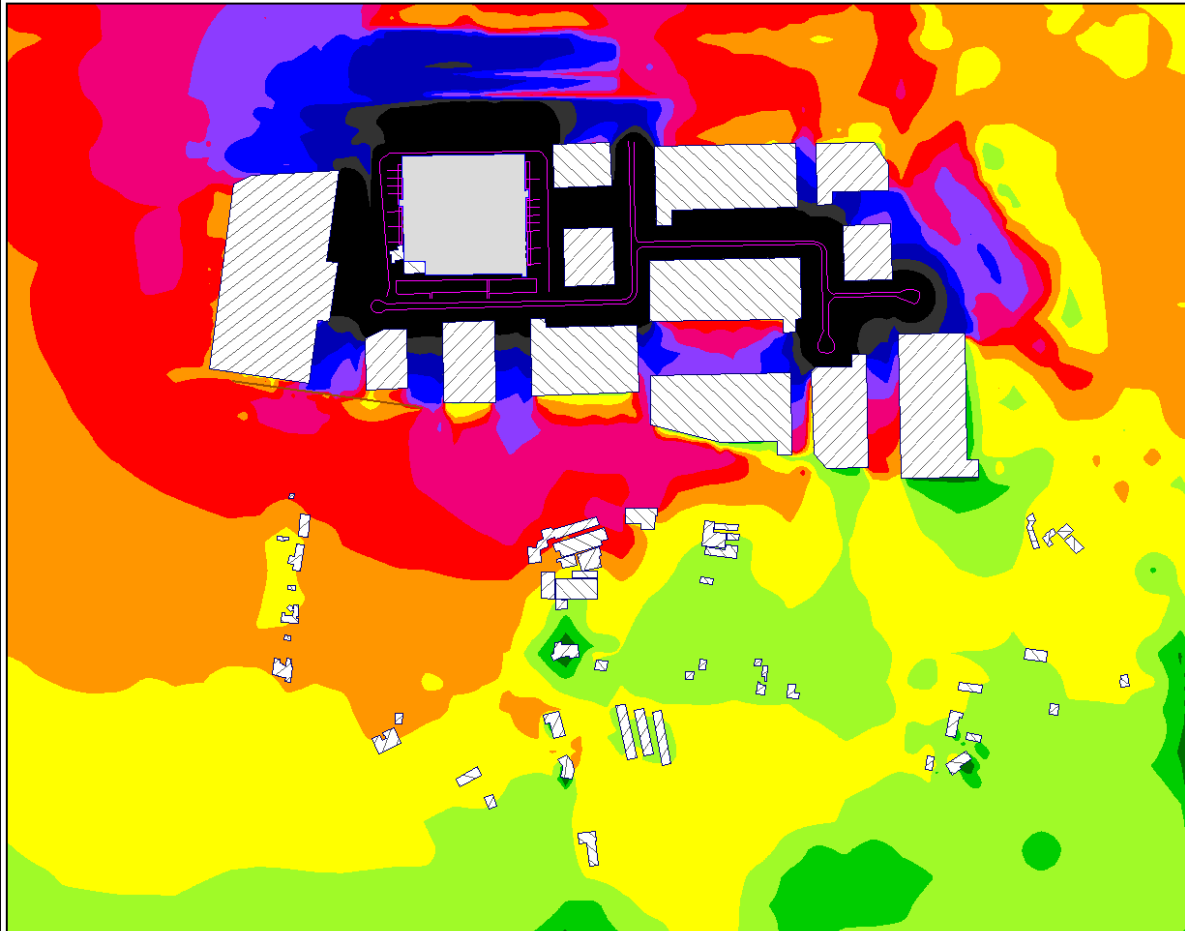
Forklift 100dB(A)
Light Vehicle 90dB(A)
Semi Trailer Internal Roads 105dB(A)
Semi Trailer Loading Dock 105 dB(A)
Semi Trailer Wallgrove Road 110dB(A)

Prepared by: OB
Date: 23/03/2022

Noise Level

L_{eq} , Night 15min
in dB(A)

< 20
20 - 23
23 - 26
26 - 29
29 - 32
32 - 35
35 - 38
38 - 41
41 - 44
44 - 47
47 - 50
>=50



The onsite operational noise modelling results are summarised below:

Table 11 – Onsite Operations Predicted Noise Levels dB(A) $L_{eq, 15min}$

Time Period	Location	Predicted Noise Level dB(A) $L_{eq, 15min}$	Criteria dB(A)$L_{eq, 15min}$	Compliance
Day	Receiver 1	<30	45	Yes
	Receiver 2	<32	45	Yes
	Receiver 3	<30	45	Yes
	Receiver 4	<47	68	Yes
	Receiver 5	<30	68	Yes
	Receiver 6	<30	46	Yes
Evening	Receiver 1	<30	43	Yes
	Receiver 2	<30	43	Yes
	Receiver 3	<30	43	Yes
	Receiver 4	<44	68	Yes
	Receiver 5	<30	68	Yes
	Receiver 6	<30	43	Yes
Night	Receiver 1	<32	38	Yes
	Receiver 2	<35	38	Yes
	Receiver 3	<30	38	Yes
	Receiver 4	<50	68	Yes
	Receiver 5	<30	68	Yes
	Receiver 6	<32	38	Yes

9.4 SLEEP DISTURBANCE ASSESSMENT FOR LOT 11/12

A sleep disturbance assessment has been undertaken based on the following noise sources and assumptions:

- The loudest typical peak noise events from the use of the car park will be from a car door closing or a car engine starting, both with an approximate sound power level of 93dB(A) $L_{1(1min)}$.
- The loudest typical peak noise events from the truck will be air brakes, with an approximate sound power level of 114 dB(A) L_{max} And reverse alarm, with an approximate sound power level of 108 dB(A) L_{max} (including 5 dB(A) for tonality).
- Recommended acoustic treatments in Section 8 are adopted.

Noise emissions from the operation of the proposed operation during night have been predicted at the receiver locations using SoundPlan™ modelling software implementing the ISO 9613-2:1996 *"Acoustics – Attenuation of Sound During Propagation Outdoors – Part 2: General Method of Calculation"* noise propagation Standard. Sound Power Level data used in the SoundPlan™ modelling is based on measurement results by this office for the same model of helicopter. The following weather conditions are included in the modelling based on the requirements of ISO9613:

- Wind speed of between 1m/s and 5m/s.
- 10 degrees with 70% relative humidity.

The modelling results of dB(A) $L_{max, F}$ are below:

813-913 Wallgrove Road Eastern Creek

Ground Level
Predicted Noise Levels

Height Above Ground: 1800mm

Noise Sources SWL Lmax:

Truck Air Brake 114dB(A)
Truck Reverse Alarm 108dB(A)

Prepared by: OB
Date: 23/03/2022

Noise Level

L_{max}
in dB(A)

	< 38
	38 - 42
	42 - 46
	46 - 50
	50 - 54
	54 - 58
	58 - 62
	62 - 66
	66 - 70
	70 - 74
	74 - 78
	>= 78



The modelling results are summarised below:

Table 12 – Predicted Noise Level dB(A) L_{max}

Location	Predicted Noise Level dB(A)L_{max}	Criteria dB(A)L_{max}	Comply ?
Receiver 1	42	52	Yes
Receiver 2	46	52	Yes
Receiver 3	40	52	Yes
Receiver 6	46	52	Yes

Predicted sleeping disturbance noise level dB(A) L_{max} is significantly lower than the requirements of NSW EPA therefore the operation of the project site (Lot 11 & 12) would not result sleeping disturbance to residential dwellings adjacent to the project site.

9.5 VEHICLES ALONG WALLGROVE ROAD

Noise from cars and trucks moving along Wallgrove Road to and from the development have been assessed against the RNP over the day/evening period as a worst case.

As a worst-case scenario, noise contribution from the operation of the development during peak hour has been assessed for the following:

- Day time: the worst one hour is 7am to 8am based on traffic report with 13 trucks (Semi Trailer) and 6 cars.
- Night time: the worst one hour is 6am to 7am with to trucks (semi-trailer) and 22 cars.

9.5.1 Vehicles Along Wallgrove Road Noise Model

Noise Modelling results are graphed next.

813-913 Wallgrove Road Eastern Creek

Ground Level
Predicted Noise Levels

Height Above Ground: 1800mm

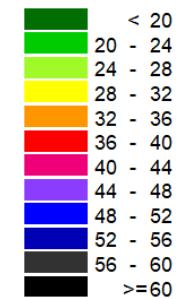
Noise Sources SWL:

Light Vehicle Wallgrove Road 90dB(A)
Semi Trailer Wallgrove Road 110dB(A)

Prepared by: OB
Date: 23/03/2022

Noise Level

L_{eq}, 15hr
in dB(A)



813-913 Wallgrove Road Eastern Creek

Ground Level
Predicted Noise Levels

Height Above Ground: 1800mm

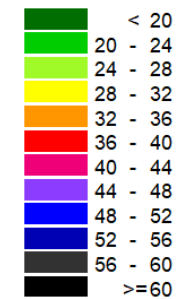
Noise Sources SWL:

Light Vehicle Wallgrove Road 90dB(A)
Semi Trailer Wallgrove Road 110dB(A)

Prepared by: OB
Date: 23/03/2022

Noise Level

L_{eq}, 9hr
in dB(A)



The predicted noise levels are summarised in Table below.

Table 13 – Vehicle Movements along Wallgrove Road

Worst Case Noise Receiver	Time	Predicted Noise Level dB(A) L_{eq} 15 hour	Noise Emission Criteria dB(A) L_{eq} 15 hour	Complies
Neighbouring lot to the south	Day	48	Day 60 dB(A) _{L_{eq}(15hour)}	Yes
	Night	44	Night 55 dB(A) _{L_{eq}(9hour)}	Yes

10 COMBINED ONSITE OPERATIONS AND ROAD TRAFFIC NOISE

Combined emissions from the onsite operational activities in Section 9.3.1 and the loading dock/ operational parameters for remaining lots of the master plan of the whole precinct has been carried out. The same assumptions in noise modelling of Master Plan Acoustic report provided by this office with reference number: 20200813.1/0804A/R2/SN have been used and repeated below:

10.1 NOISE MODELLING PARAMETERS

The assessment of noise emissions from the different operational noise activities have been assessed using the following assumptions detailed in the matrix below.

Table 14 – Assumed Operational Noise Levels

Noise Source	Sound Power Level dB(A)	Speed	Area Assessed	Operation Time Duration
Semi-trailer	105	10km/h	Loading dock	-
	110	50km/h	Wallgrove Road	-
Medium rigid dual axle trucks	100	10km/h	Loading dock	-
	105	50km/h	Wallgrove Road	-
Cars/Lt Vehicles	90	20km/h	Internal Road	-
	90	70km/h	Wallgrove Road	-
Loading Dock - Forklift operation	100 per forklift assuming reversing alarms	-	Loading dock	30min / hour external to building (peak hour)

10.2 VEHICLE MOVEMENTS WITHIN THE MASTER PLAN

Noise emissions associated with vehicle movements within the development have been assessed against the requirements of the NPI. The results from this assessment are presented in this section. Noise associated with vehicles entering and exiting the development have been assessed for the following:

- Semi-trailers and medium-rigid delivery trucks during the evening period as a worst case.
- Cars entering and exiting during the evening time period as a worst case.
- The vehicle movement numbers are based on the traffic impact report prepared by GHD ref: 21/22381.
- We have been informed the predicted generation of vehicles are: 86% light vehicles, 8.4% rigid trucks, 7.6% articulated trucks.
- We assumed that during the night-time operation, the maximum vehicle movements are at 25% capacity of the peak hour numbers.
- Recommended acoustic treatments in Section 8 are adopted.

Note: A vehicle movement constitutes a single entry or exit of the project site. That is; a truck delivery will constitute two movements.

Table 15 – Overall Vehicle Movement Details

Worst Case Noise Receiver	Time of Day	Truck Movements (vph)
Residential receivers to the south-west	Day/Evening	Day/Evening: - 45 x Semi Trailer - 50 x MRV - 516 x cars
	Night	
Industrial development to the south	When in use	Night: - 11 x Semi Trailer - 12 x MRV - 129 x cars

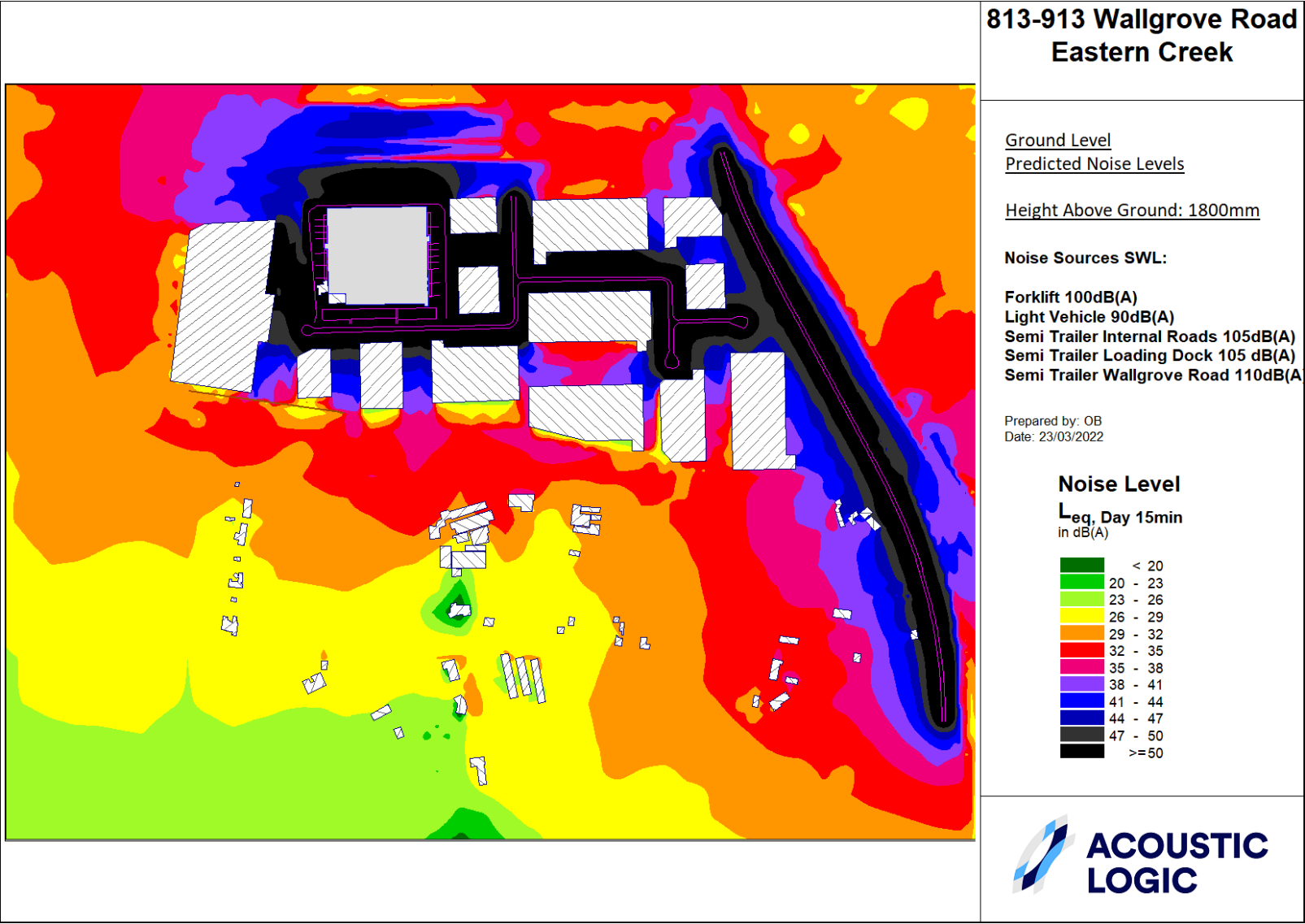
10.3 LOADING DOCK AND INTERNAL WAREHOUSE OPERATION

At this stage, the detailed use of other lots is not clear, we assume that majority of the lots will be used as warehouses. On this basis, the following has been assumed:

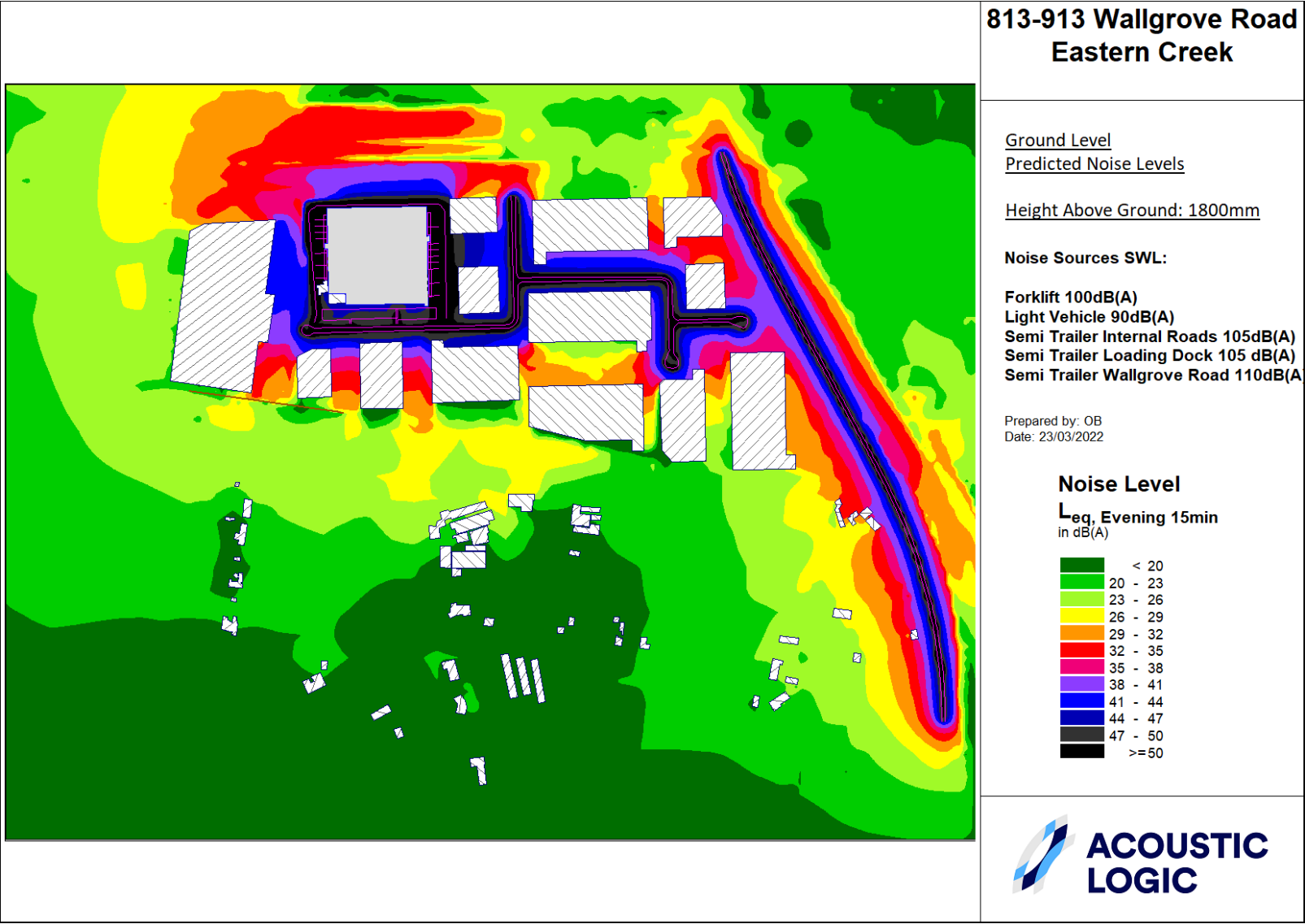
- Normal distribution activities (ie forklift operation) have been assessed with roller doors open.
- Day/Evening Time Operation:
 - For Lot 10, normal distribution levels assume a 79dB(A) sound pressure level inside based on 30 forklifts working simultaneously within 10m internally of the warehouse roller doors.
 - For other Lots, we assume the maximum capacity will be 25% of Lot 10.
- Night-time Operation:
 - For Lot 10, normal distribution levels assume a 73dB(A) sound pressure level inside based on 8 forklifts working simultaneously within 10m internally of the warehouse roller doors
 - For other Lots, we assume the maximum capacity will be 25% of Lot 10.

The SoundPLAN noise maps are presented below.

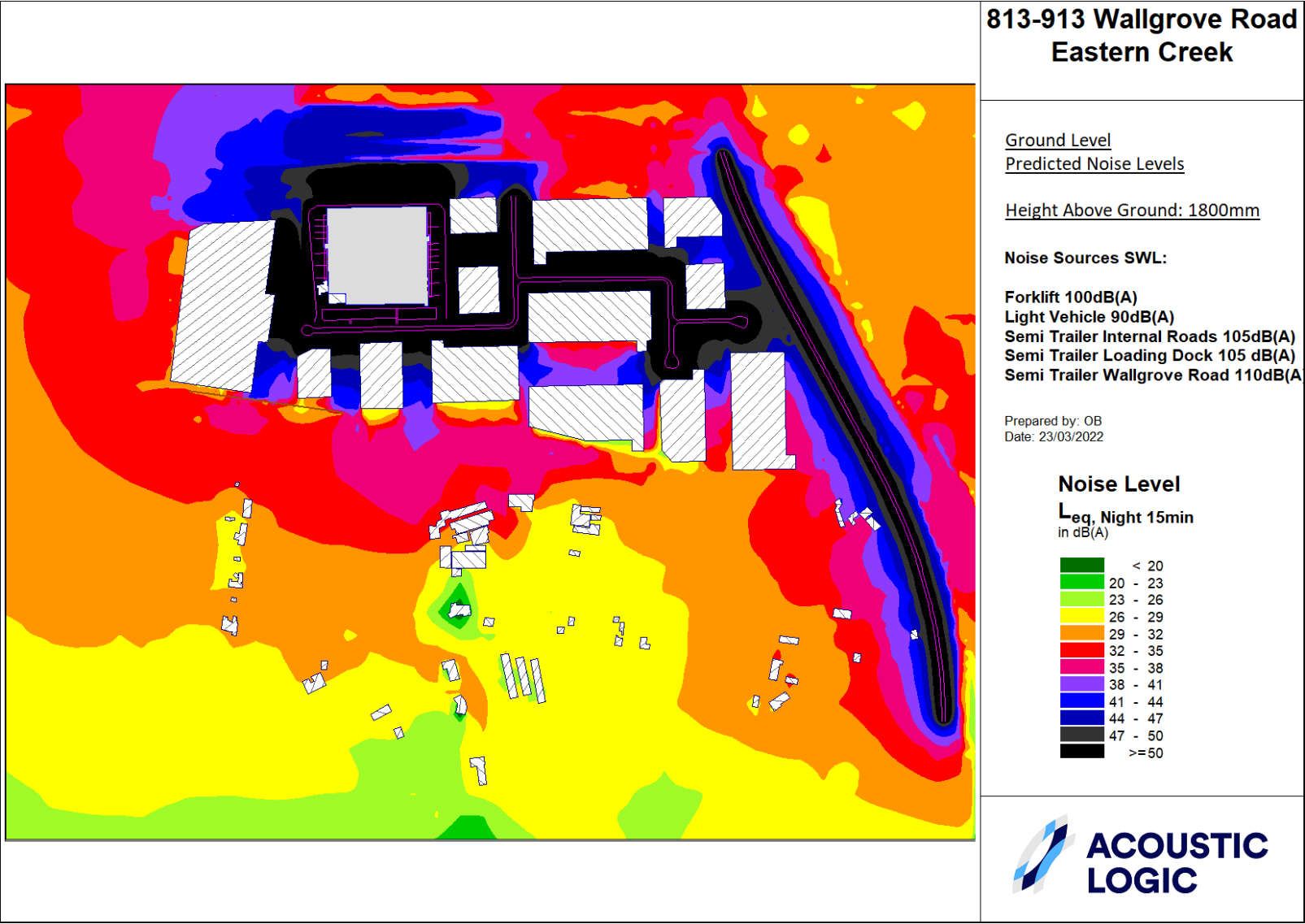
Day Time Onsite Operations and Road Traffic Noise Modelling



Evening Time Onsite Operations and Road Traffic Noise Modelling



Night Time Onsite Operations and Road Traffic Noise Modelling



The combined onsite operations and road traffic noise modelling results have been assessed against the A13 Operational Noise Limits for the Concept Plan. Refer to Table 16 below.

**Table 16 – Combined Onsite Operations and Road Traffic Predicted Noise Levels dB(A)_{Leq},
15min**

Time Period	Location	Predicted Noise Level dB(A) _{Leq} , 15min	Criteria dB(A) _{Leq} , 15min	Compliance
Day	Receiver 1	<32	45	Yes
	Receiver 2	<33	45	Yes
	Receiver 3	<35	45	Yes
	Receiver 4	<47	68	Yes
	Receiver 5	<47	68	Yes
	Receiver 6	<32	45	Yes
Evening	Receiver 1	<30	43	Yes
	Receiver 2	<30	43	Yes
	Receiver 3	<30	43	Yes
	Receiver 4	<44	68	Yes
	Receiver 5	<41	68	Yes
	Receiver 6	<30	43	Yes
Night	Receiver 1	<35	38	Yes
	Receiver 2	<36	38	Yes
	Receiver 3	<35	38	Yes
	Receiver 4	<50	68	Yes
	Receiver 5	<47	68	Yes
	Receiver 6	<35	38	Yes

11 MECHANICAL NOISE EMISSIONS

As design of the mechanical services and plant to serve the development is yet to be completed, treatment cannot be determined at this time. All plant and mechanical services including mechanical plant to service the individual lots are to be designed and operate to comply with the noise emission objectives detailed in Table 5 of this report and satisfy the noise emission requirements of the EPA 'Noise Policy for Industry' (2017) and the 'Protection of the Environment Operations Act 1997'.

12 ACOUSTIC RECOMMENDATIONS

The following treatments are recommended to the building façade for noise emissions to comply with the noise emission criteria identified in Section 6.

12.1 WAREHOUSE CONSTRUCTION

AL recommends the following construction to the warehouse buildings:

- The roof to be constructed from minimum 0.42mm sheet metal with 50mm glasswool insulation underneath.

12.2 MANAGEMENT CONTROL

The following conditions are recommended for the warehousing facility to maintain the acoustic amenity of the surrounding area.

- Truck delivery drivers should limit the use of exhaust brakes on internal roads and Wallgrove Road.
- Where practical, trucks are to be switched off whilst in the loading dock and not to be left idling. This would apply to airbrake compressors to limit discharge within the loading dock area.

13 CONCLUSION

A revised environmental noise Impact assessment for the proposed warehouse facility Lot 11 & Lot 12 located within Gazcorp Industrial Estate at 813 Wallgrove Road, Horsley Park has been carried out. The assessment included an assessment of the combined noise impacts from onsite activities and vehicles on Wallgrove Road. Provided the acoustic recommendations in Section 8 of this report are implemented, the noise emission from operation of the project site complies with the requirements of NSW EPA NPfI and SSD 5248 dated 11 November 2019.

We trust this information is satisfactory. Please contact us should you have any further queries.

Yours faithfully,

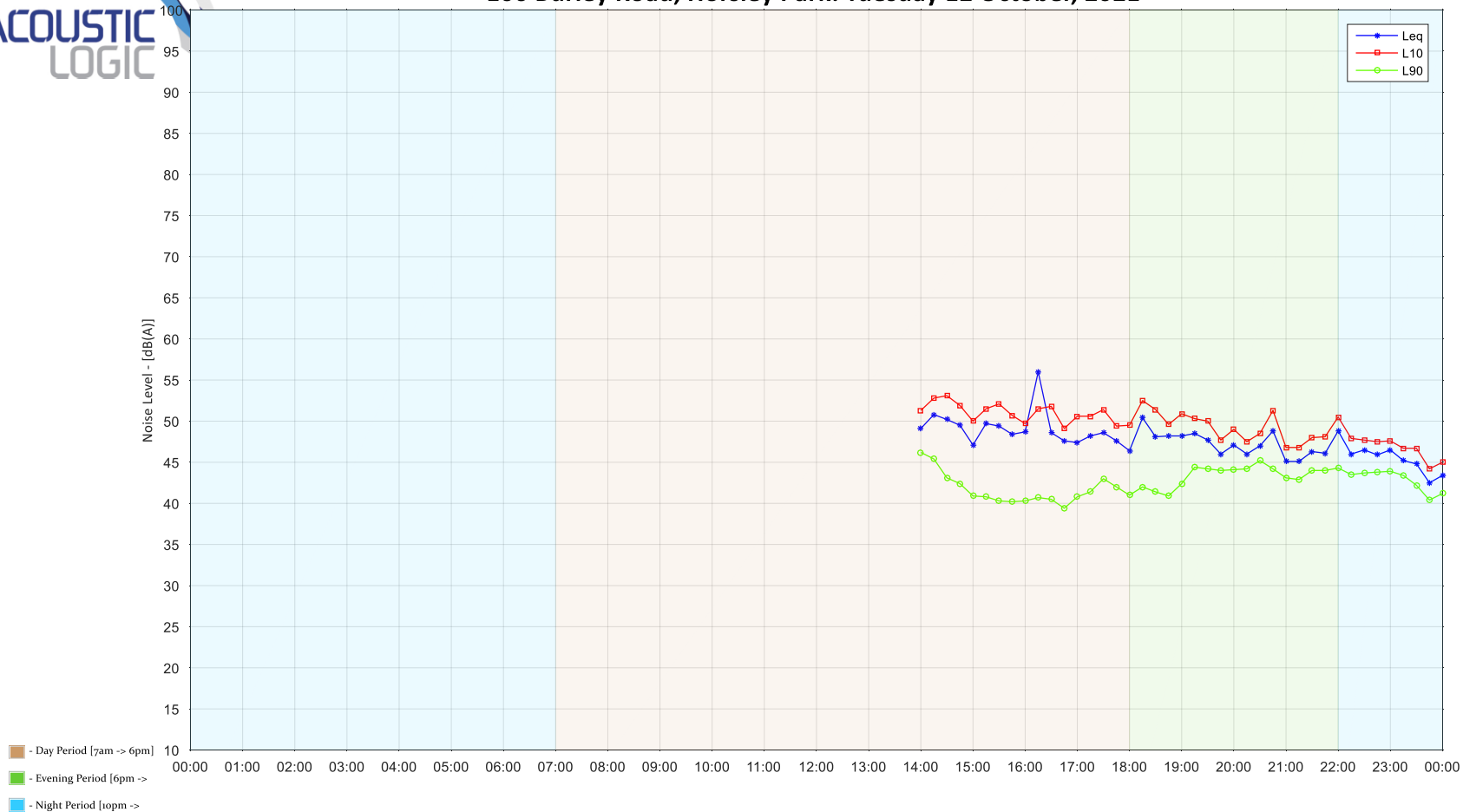


Acoustic Logic Pty Ltd
George Wei
Director, MAAS

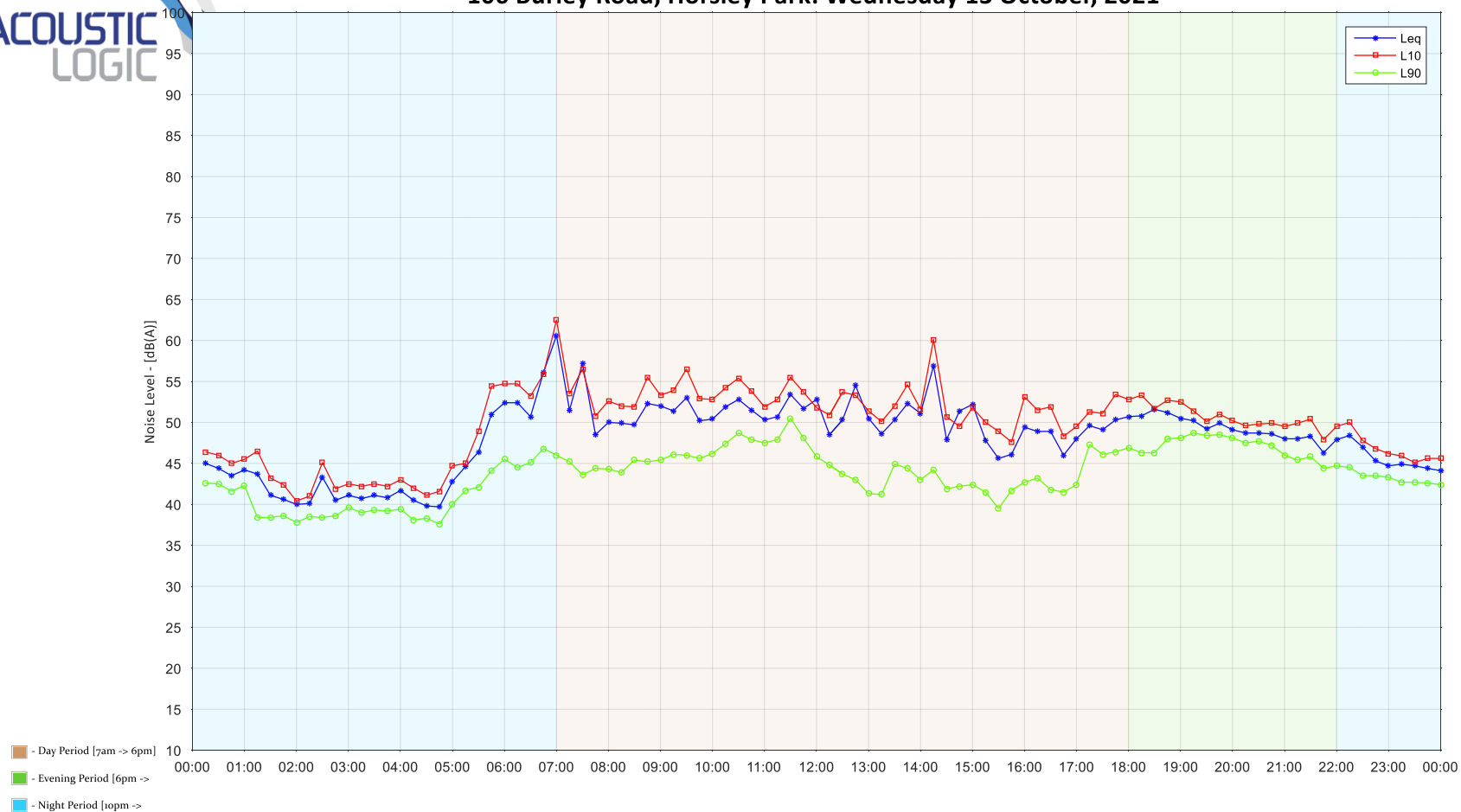
NSW Fair Trading Authorized Acoustic Certifier

APPENDIX A- BACKGROUND NOISE DATA

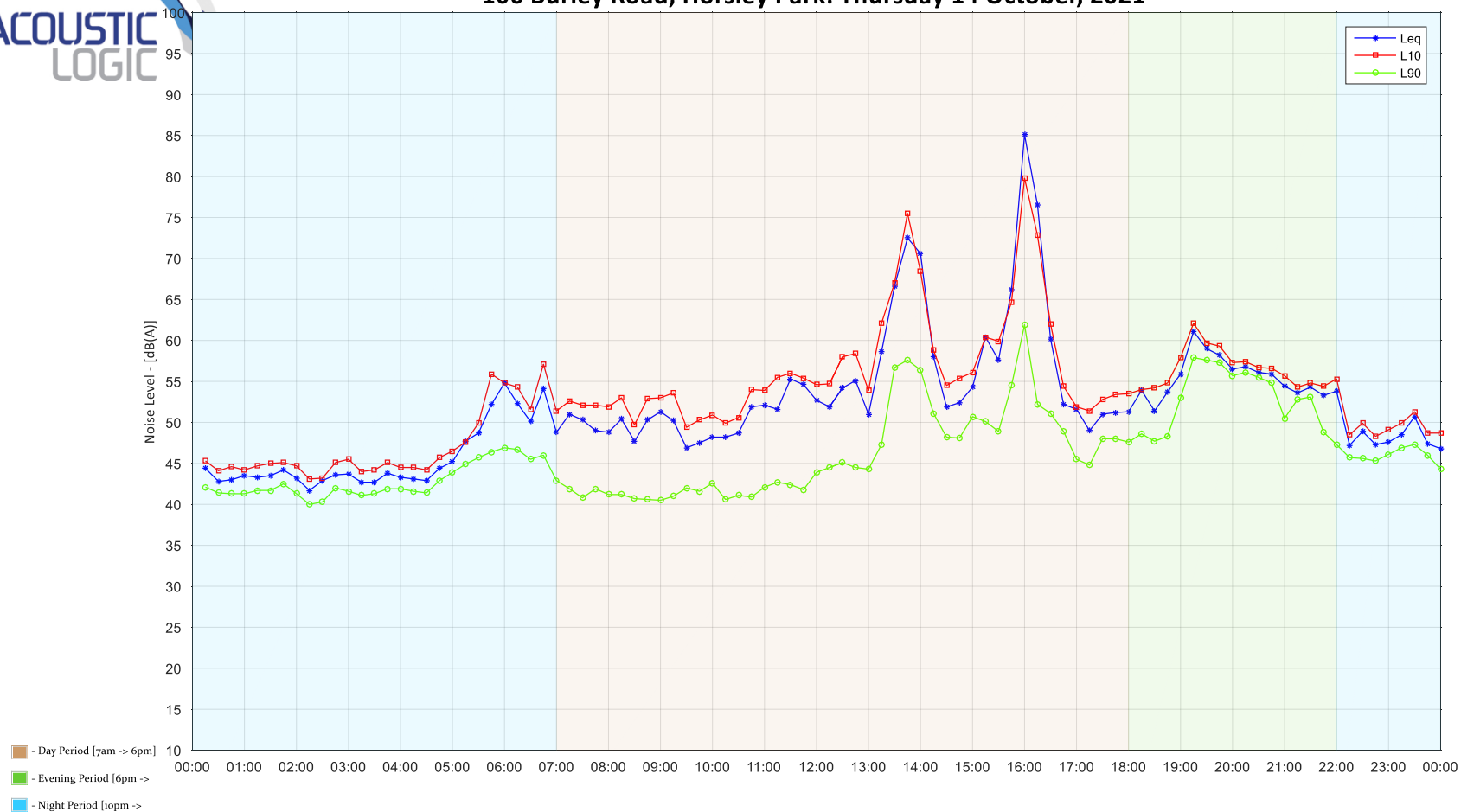
106 Burley Road, Horsley Park: Tuesday 12 October, 2021



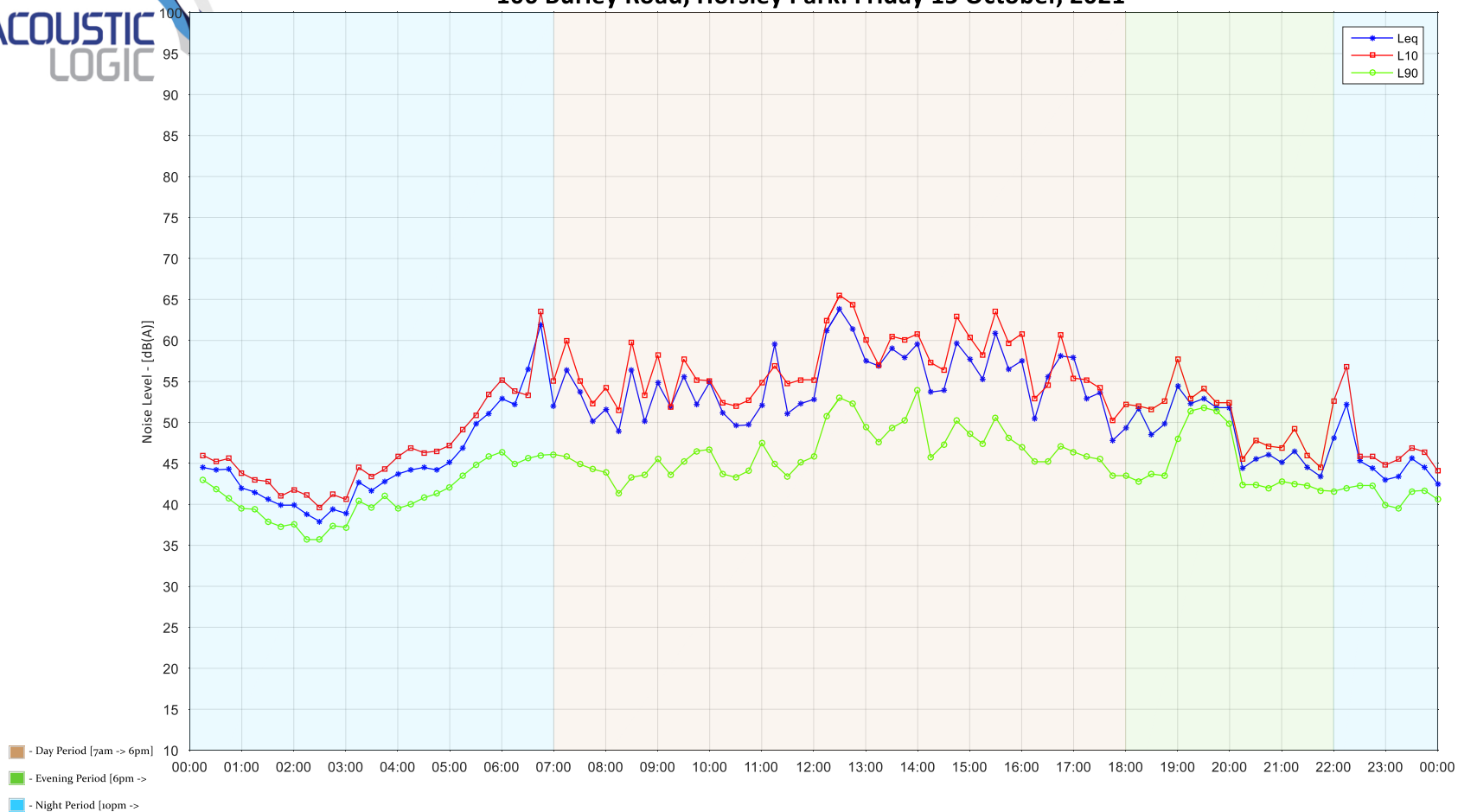
106 Burley Road, Horsley Park: Wednesday 13 October, 2021



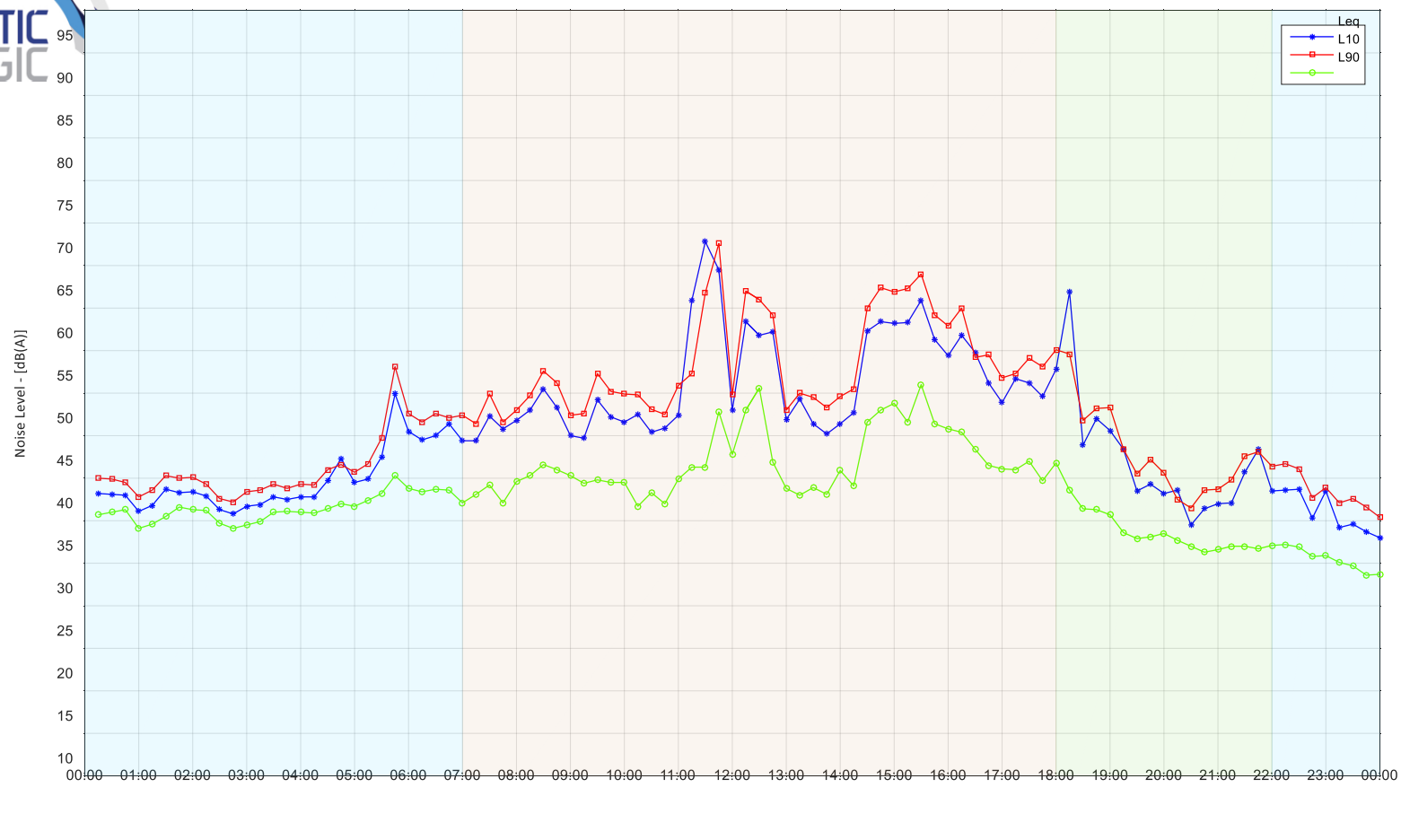
106 Burley Road, Horsley Park: Thursday 14 October, 2021



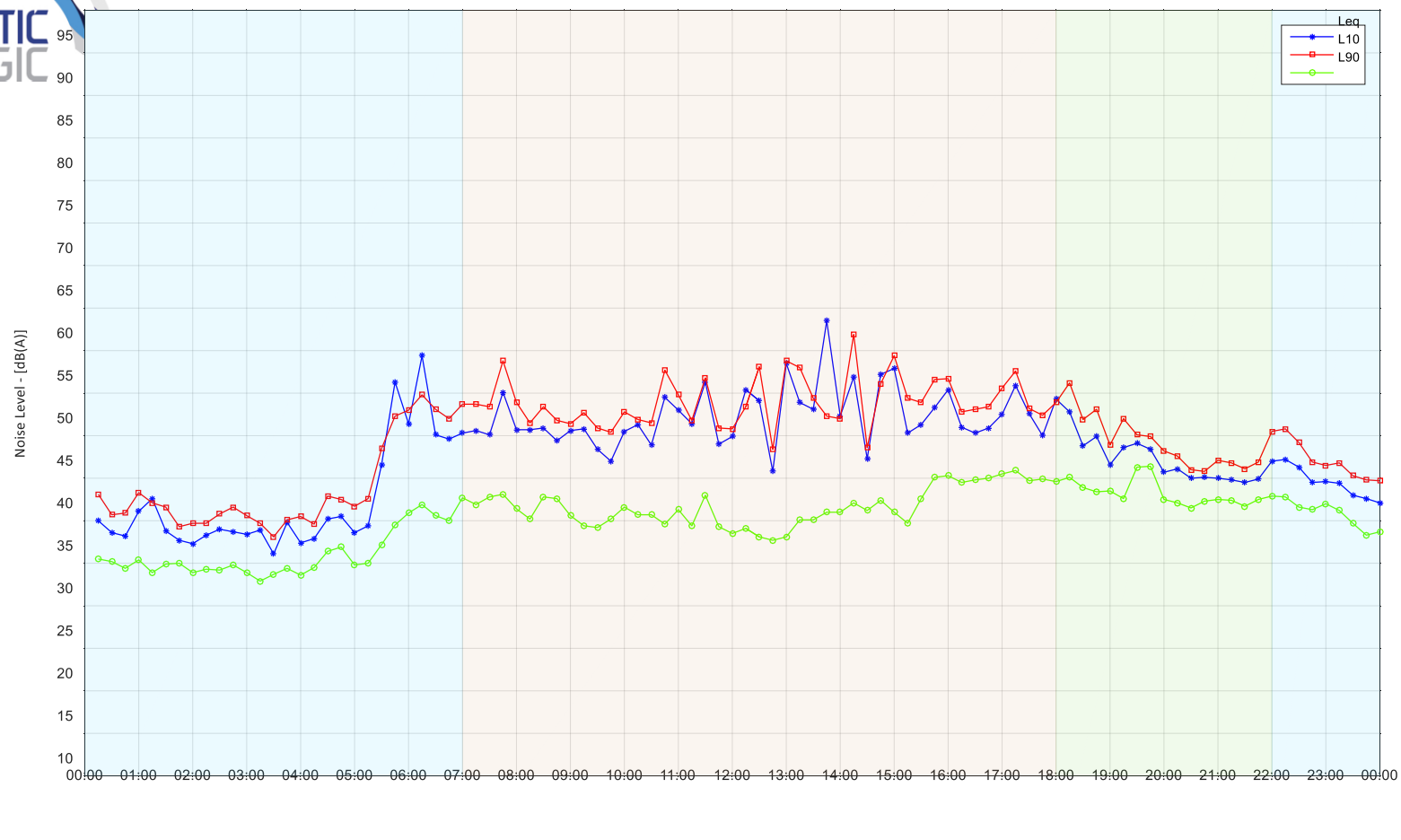
106 Burley Road, Horsley Park: Friday 15 October, 2021



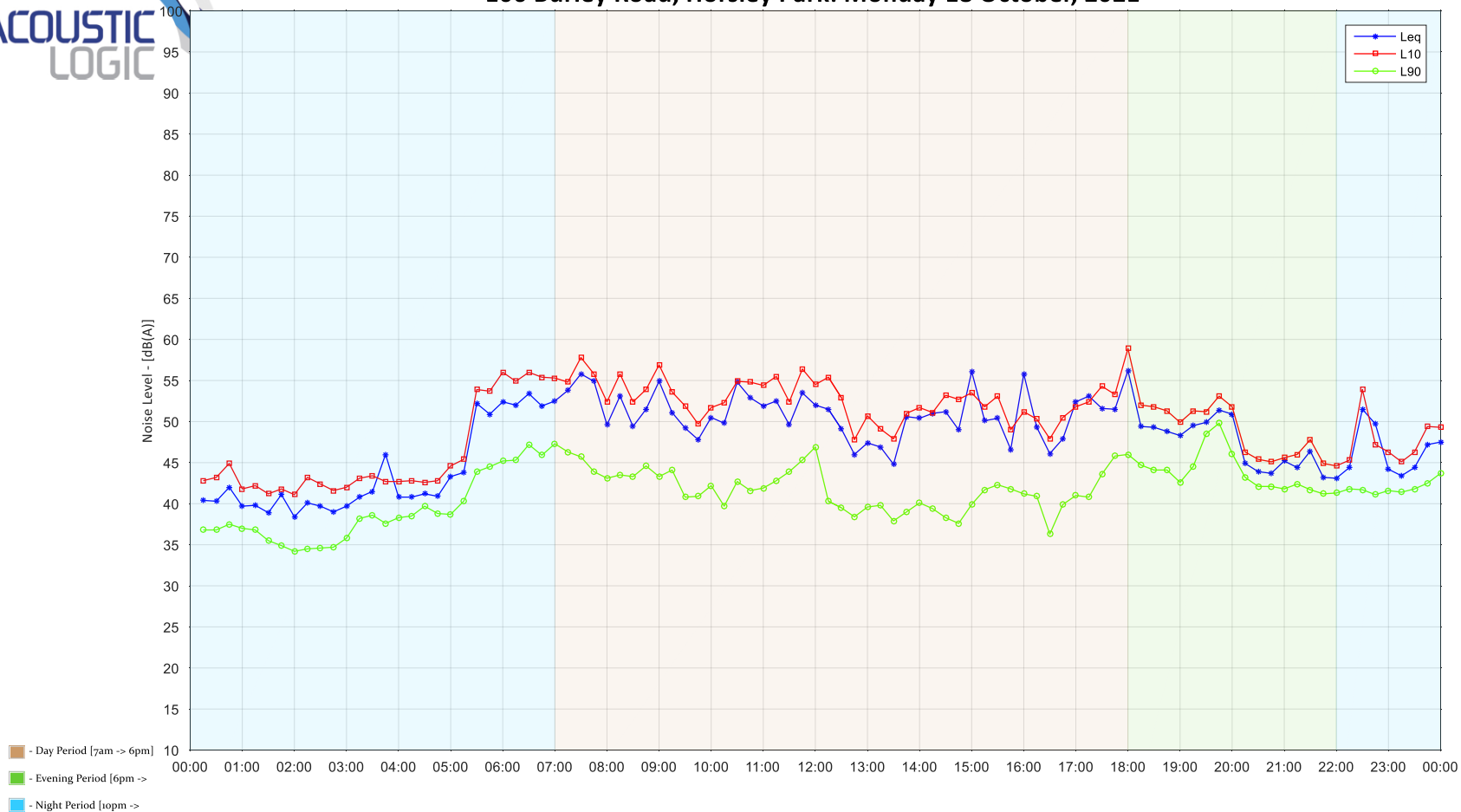
106 Burley Road, Horsley Park: Saturday 16 October, 2021



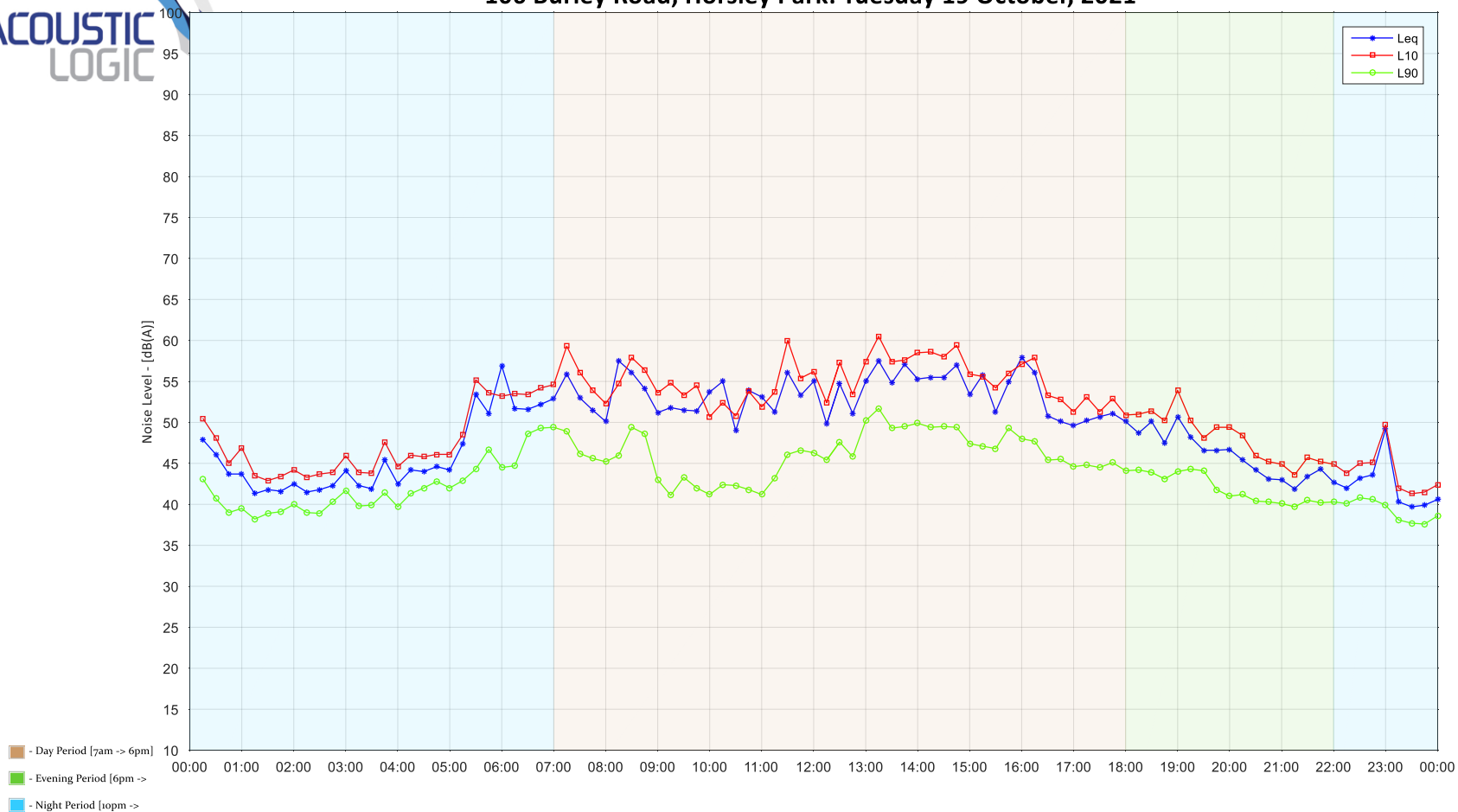
106 Burley Road, Horsley Park: Sunday 17 October, 2021



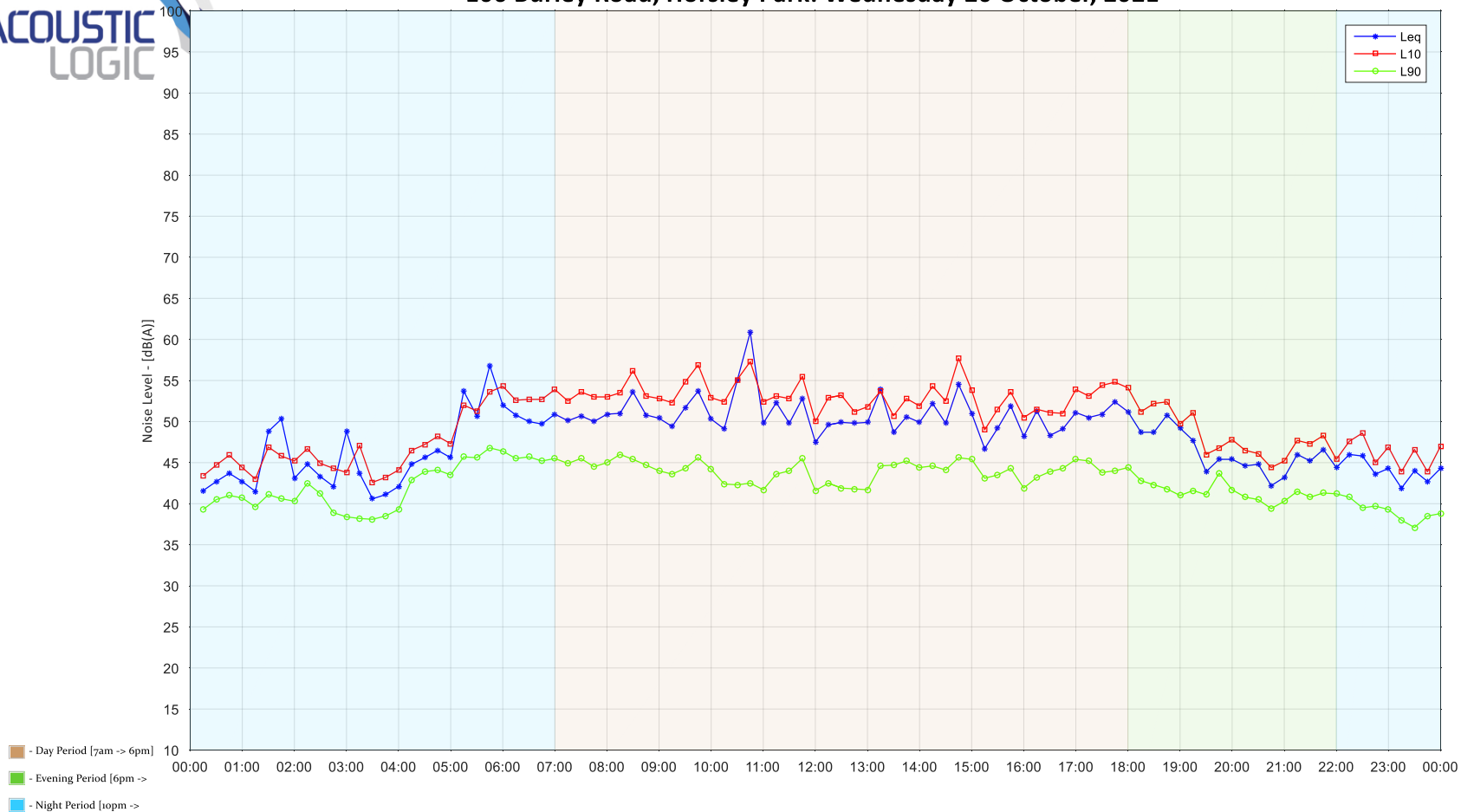
106 Burley Road, Horsley Park: Monday 18 October, 2021



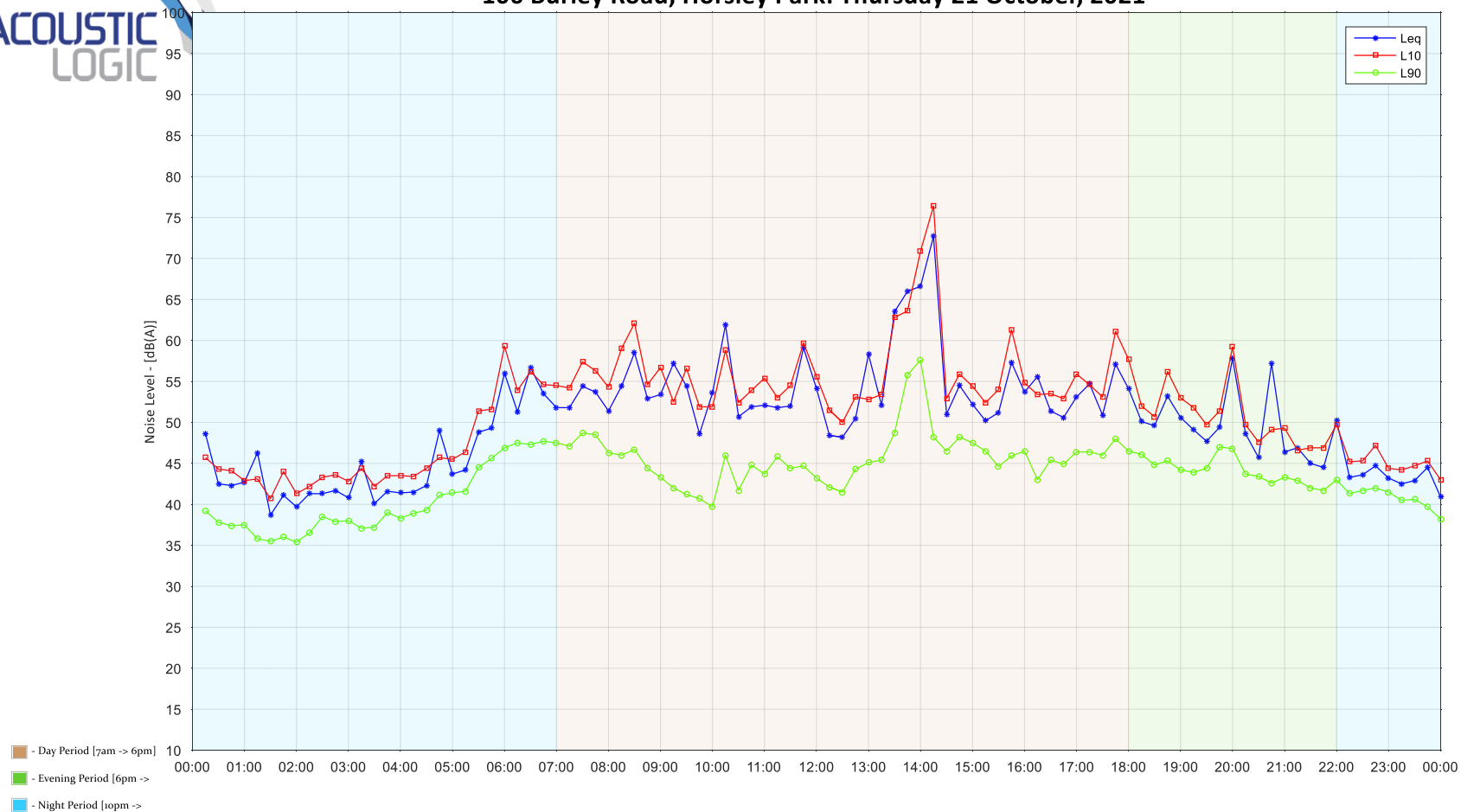
106 Burley Road, Horsley Park: Tuesday 19 October, 2021



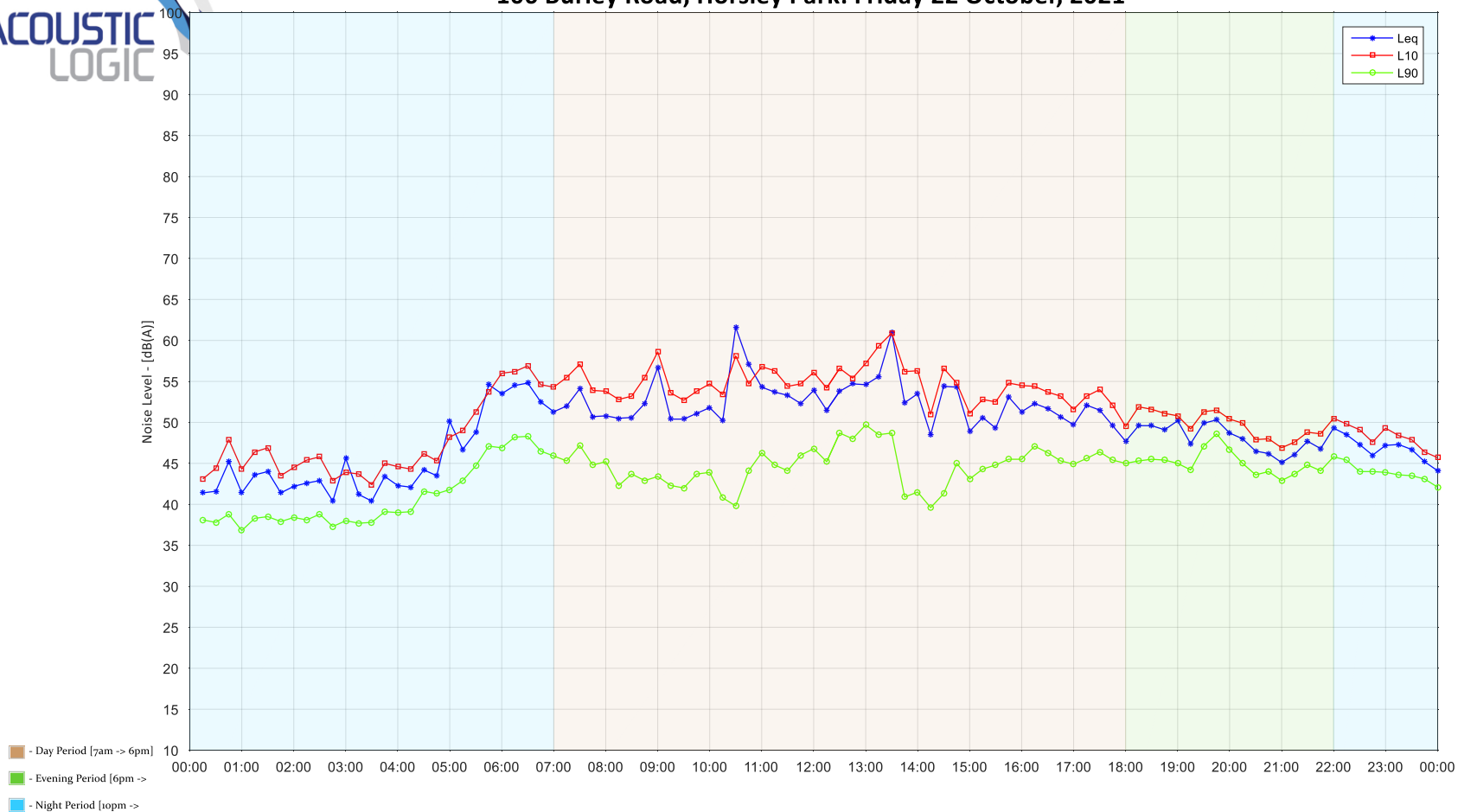
106 Burley Road, Horsley Park: Wednesday 20 October, 2021



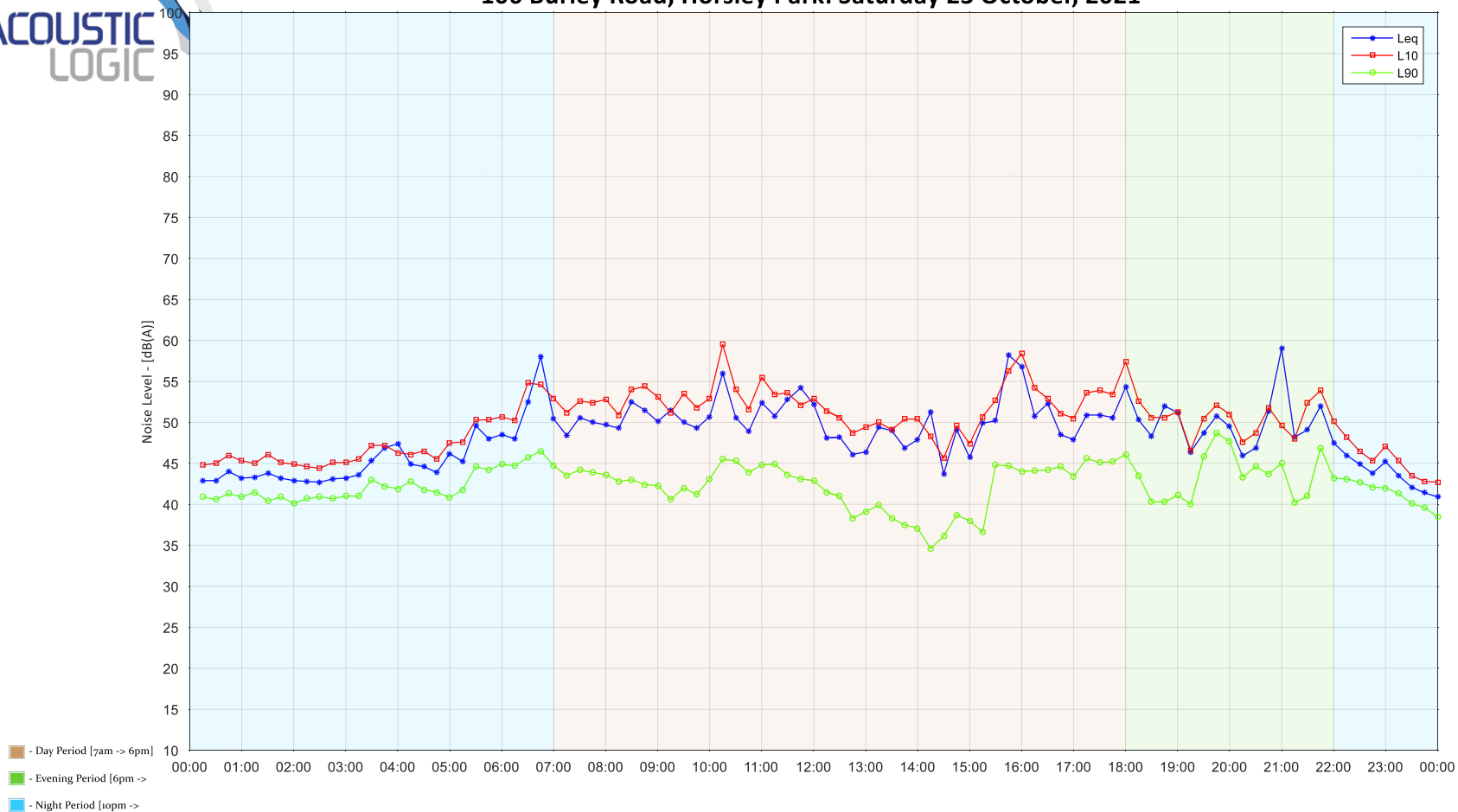
106 Burley Road, Horsley Park: Thursday 21 October, 2021



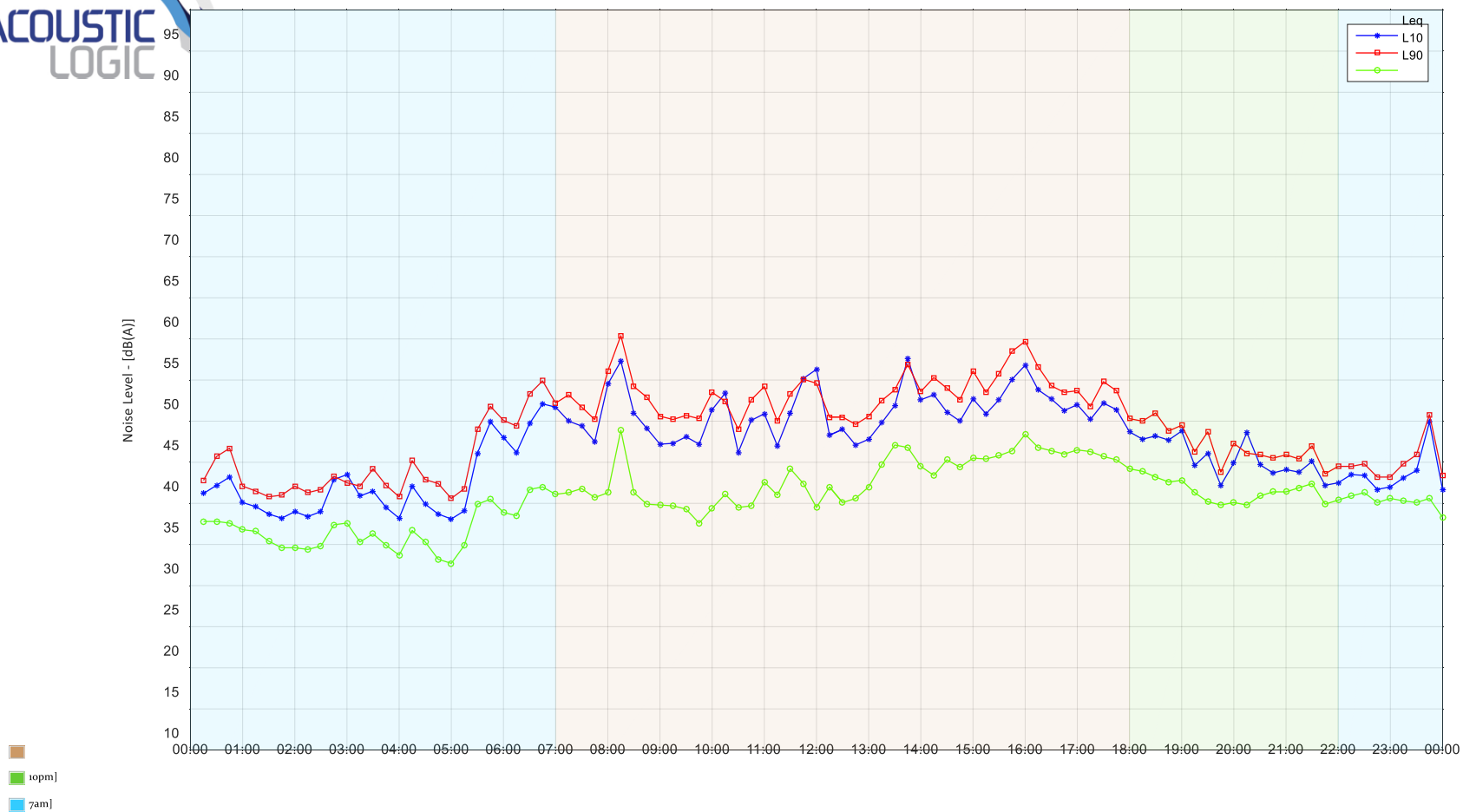
106 Burley Road, Horsley Park: Friday 22 October, 2021



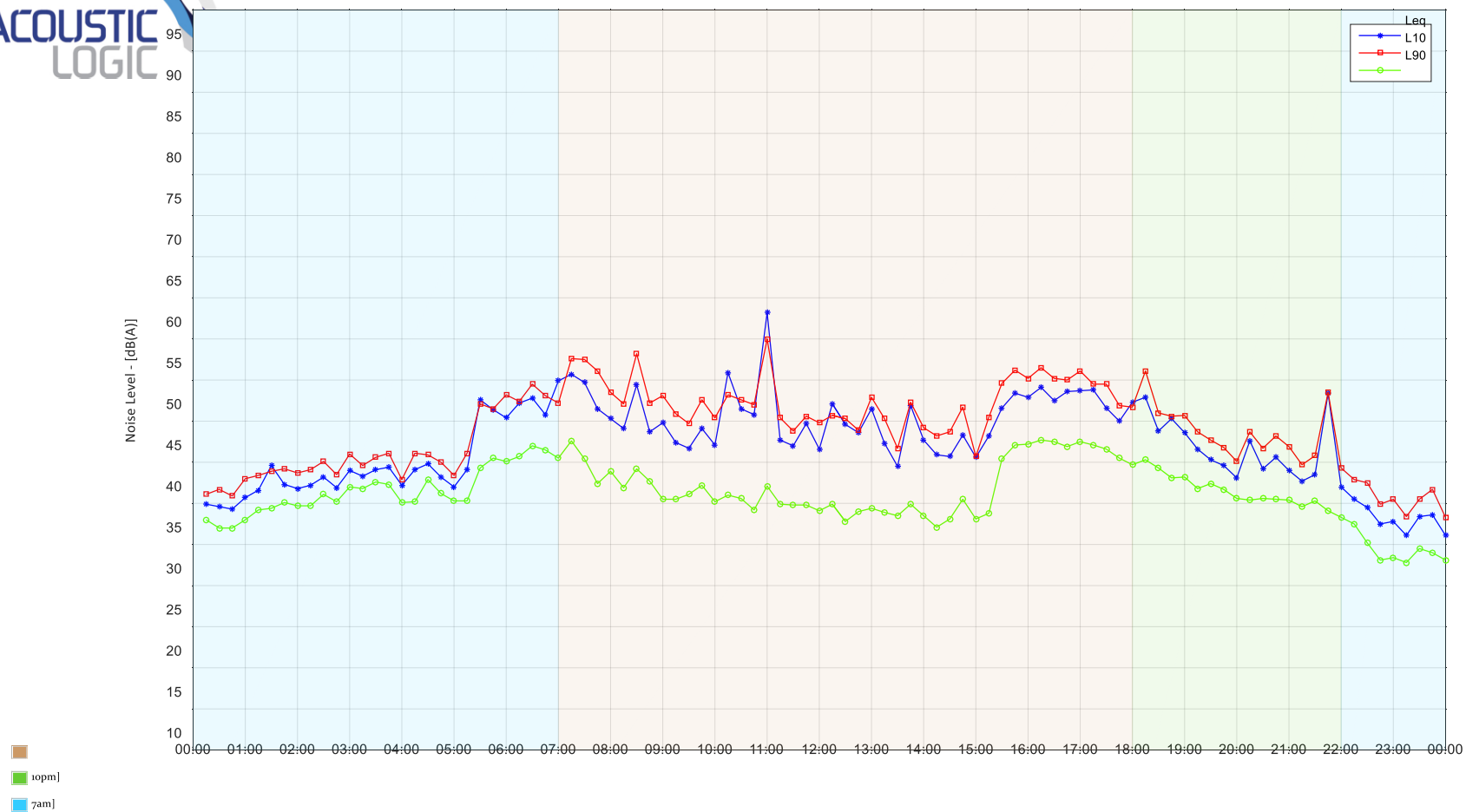
106 Burley Road, Horsley Park: Saturday 23 October, 2021



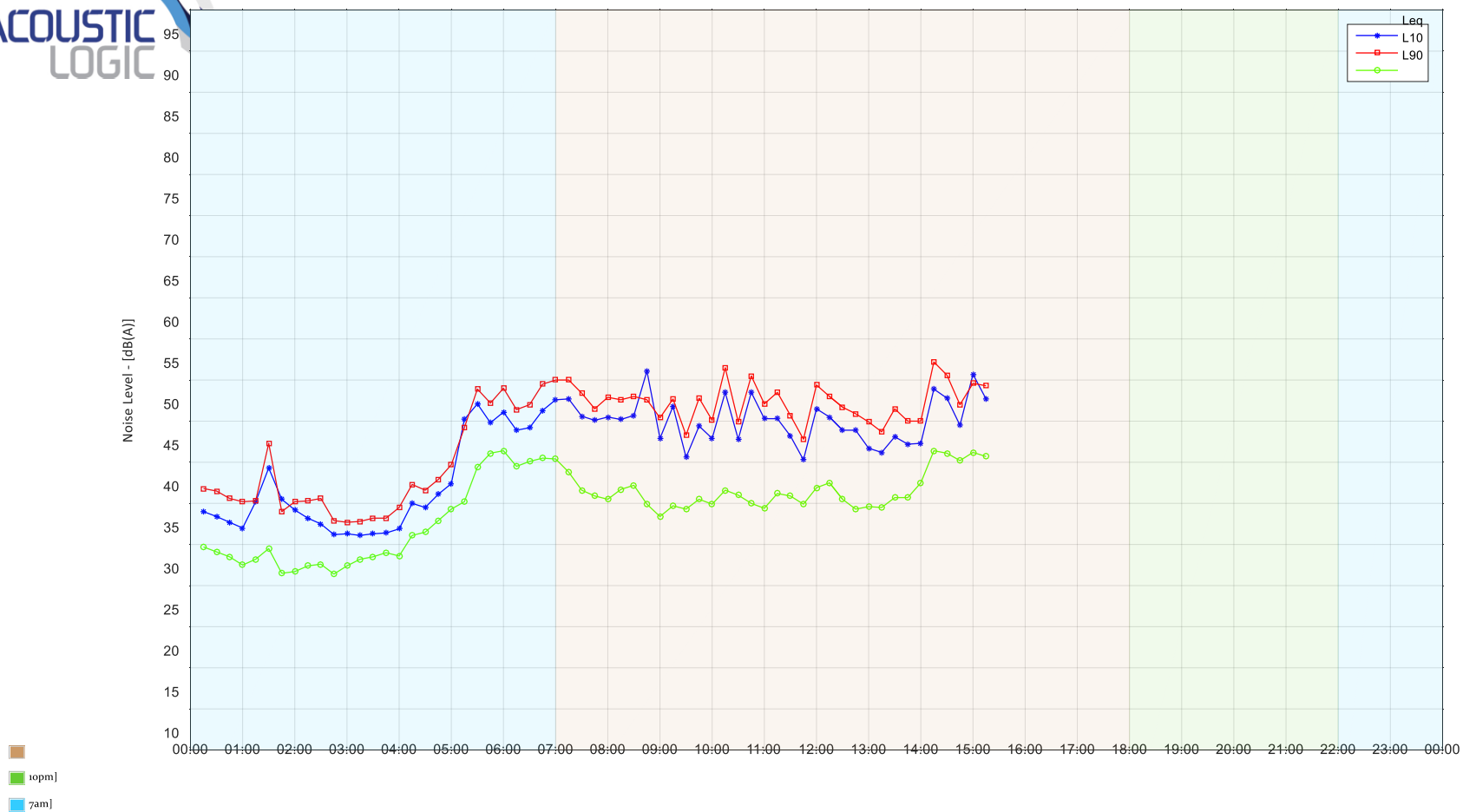
106 Burley Road, Horsley Park: Sunday 24 October, 2021



106 Burley Road, Horsley Park: Monday 25 October, 2021



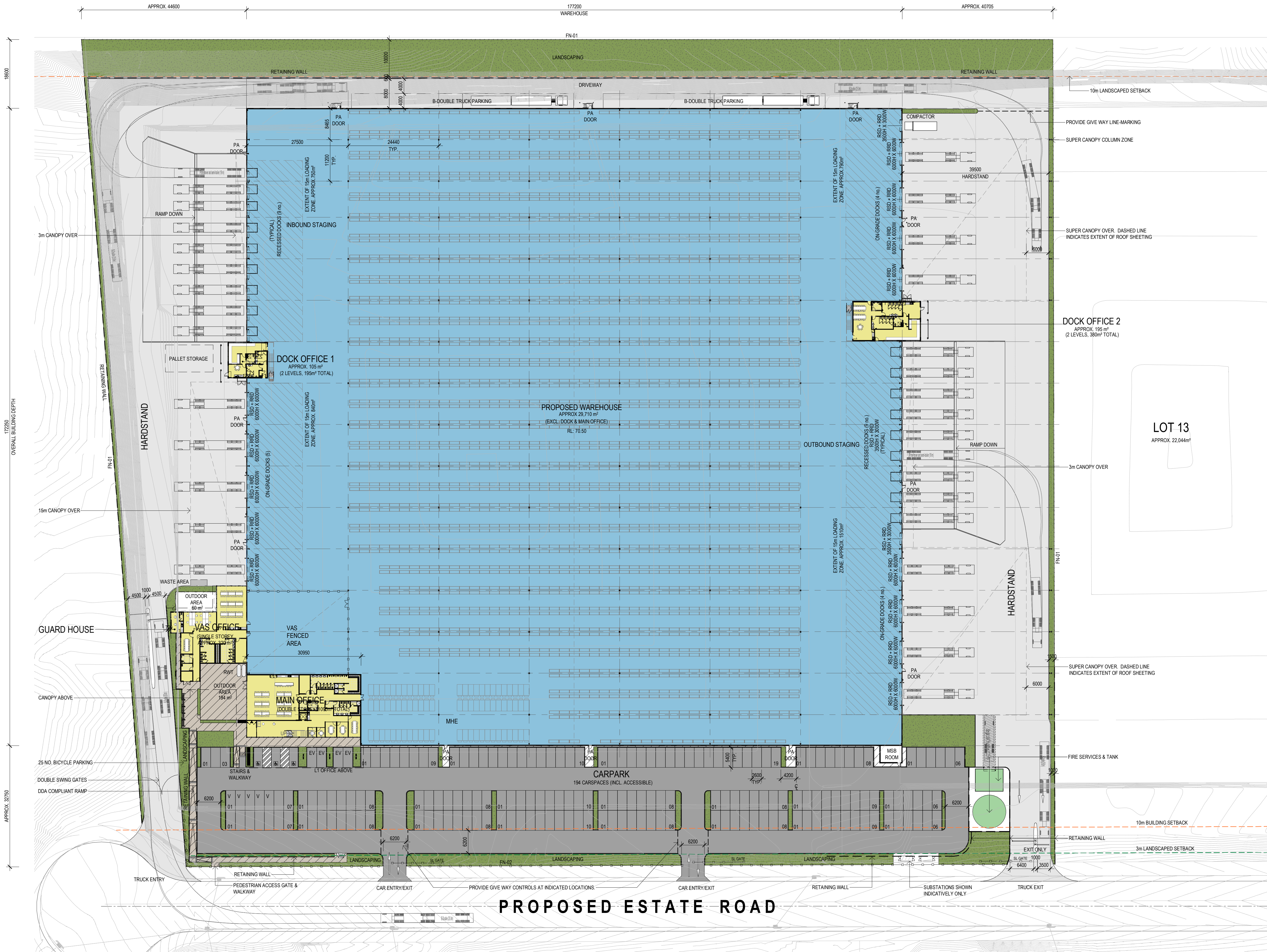
106 Burley Road, Horsley Park: Tuesday 26 October, 2021



APPENDIX B – SITE PLANS

 Site Boundary
 Lot Boundary
 20m Building Setback
 10m Building Setback
 3m Landscape Setback





NOTES

- ALL NEW CROSSOVERS IN ACCORDANCE WITH LOCAL COUNCIL REQUIREMENTS
- ALL PARKING SPACES IN ACCORDANCE WITH VICTORIAN PLANNING SCHEME
- ALL DISABLED PARKING SPACES IN ACCORDANCE WITH AUSTRALIAN STANDARD AS2890 (5.4m x 2.4m)
- SITE STORMWATER DRAINAGE IN ACCORDANCE WITH LOCAL AUTHORITY & COUNCIL REQUIREMENTS
- ALL RELATIVE LEVELS ARE SHOWN TO A.H.D. (Australian Height Datum)

LEGEND

- INDICATES EXTENT OF WAREHOUSE
- INDICATES EXTENT OF OFFICES & ANCILLARY BUILDINGS
- INDICATES EXTENT OF HEAVY DUTY HARDSTAND TO CIVIL ENGINEERS DETAILS
- INDICATES EXTENT OF LIGHT DUTY PAVEMENT TO CIVIL ENGINEERS DETAILS
- CONCRETE PAVING WITH EXPOSED AGGREGATE FINISH OR SIMILAR
- PLAIN CONCRETE WITH A BROOM FINISH OR SIMILAR
- AREA OF GRASS / LANDSCAPING, REFER TO LANDSCAPE ARCHITECTS DRAWINGS FOR LANDSCAPE LAYOUT AND DETAILS

DEVELOPMENT ANALYSIS

BUILDING	GFA
WAREHOUSE	29,710m²
OFFICE GF	520m²
OFFICE FF	575m²
DOCK OFFICE 1 GF	105m²
DOCK OFFICE 1 FF	90m²
DOCK OFFICE 2 GF	195m²
DOCK OFFICE 2 FF	185m²
VAS OFFICE	320m²
GATEHOUSE	20m²
TOTAL AREA	31,720m²

EXTERNAL AREAS (APPROX)

SUPER CANOPIES	2,992m²
CANOPIES	1,145m²
HARDSTAND	14,600m²
LIGHT DUTY PAVING	5,704m²
	397m²

PARKING

RATE REQUIRED (Not Including 15m Loading zone)- WAREHOUSE	
1 per 300m²	
GFA OFFICES	
1 per 40m²	
BAYS REQUIRED	148
BAYS PROVIDED	194
ACCESSIBLE BAYS PROVIDED	3

SITE COVERAGE

TOTAL SITE AREA	56,717m²
TOTAL BUILDING FOOTPRINT INCL. PUMP HOUSE	30,915m²
SITE COVERAGE	54.51%

NO.	DATE:	REVISION:	BY:	CHK:
P5	24.11.2021	ISSUED FOR TENDER	JO	RJ
P6	28.11.2021	PRELIMINARY ISSUE	JO	RJ
P7	15.12.2021	PRELIMINARY ISSUE	JO	RJ
P8	16.12.2021	PRELIMINARY ISSUE	JO	RJ
P9	18.01.2021	PRELIMINARY ISSUE	JO	RJ

All areas indicated are indicative for design and planning purposes only and should not be used for any contractual reasons without verification by a licensed surveyor or further design development being completed.

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PROJECT:
DHL HORSLEY PARK
813 WALLGROVE ROAD, EASTERN CREEK, NSW

TITLE:
SITE PLAN

CLIENT:



DATE: DECEMBER, 2021
DRAWN BY: AG/O
SCALE: 1 : 500 @A1
SCALE: 1 : 1000 @A3

JOB NO:	21375
DRAWING NO:	DA02
REVISION:	P9

