MATTHEW PALAVIDIS
VICTOR FATTORETTO
MATTHEW SHIELDS

20200346.6/1810A/R1/TA

20/06/2023

Heliport Developers Pty Ltd
89-151 Old Castlereagh Rd
OLD CASTLEREAGH NSW 2749

Attn: Mark Harrold

Sydney Helicopters - Longs Cottage – Noise Impact Assessment

1 INTRODUCTION

This letter has been prepared to provide an additional assessment of the proposed change of use of Longs Cottage located at 100 Castlereagh Road, Castlereagh to a café and wine bar. Previous assessments of the Sydney Helicopters site operations have been conducted and presented within Noise Impact Assessment revision 2 prepared by this office and dated 13 April 2022. This report has been adopted as part of the planning submission, and is referenced within DA21/15298 Development Consent.

This letter has been prepared to address Pre DA Advice provided by Department of Planning and Environment Letter in their letter dated 23 January 2023 which states:

> *Noise and Vibration*
>
> *Prepare a noise and vibration assessment in accordance with the relevant EPA guidelines. This assessment must:*
>
> - *detail construction and operational noise impacts on nearby sensitive receivers*
> - *consider the impacts of surrounding land uses on the operation of the proposed café and wine bar and*
> - *outline the proposed management and mitigation measures that would be implemented.*

At the time of completing the original assessment for Sydney Helicopters, specific operational and architectural details for Longs Cottage were not sufficiently detailed to allow for this assessment. However, the project has now developed to a point where this can be undertaken.

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The proposed Longs Cottage is proposed to operate as follows:

- Operational hours of the cottage are between the hours of 7am to 10pm;
- Up to a total of 70 patrons across internal and external cottage spaces;
- Up to 20 patrons externally on the verandah;
- Background amplified music of up to 75 dB(A) L_{10} within the internal areas.

Noise emissions from the above have been predicted to the nearest residential property located at 47-65 Old Castlereagh Road residential receiver identified in the original noise impact assessment, approximately 445m from Longs Cottage. Compliance at this location demonstrates compliance at all receiver locations identified within the original Noise Impact Assessment.

There is no new mechanical plant associated with the development.

Construction works are minor, internal, and fewer than three weeks in duration.

A floor plan of the cottage is presented in Figure 1.

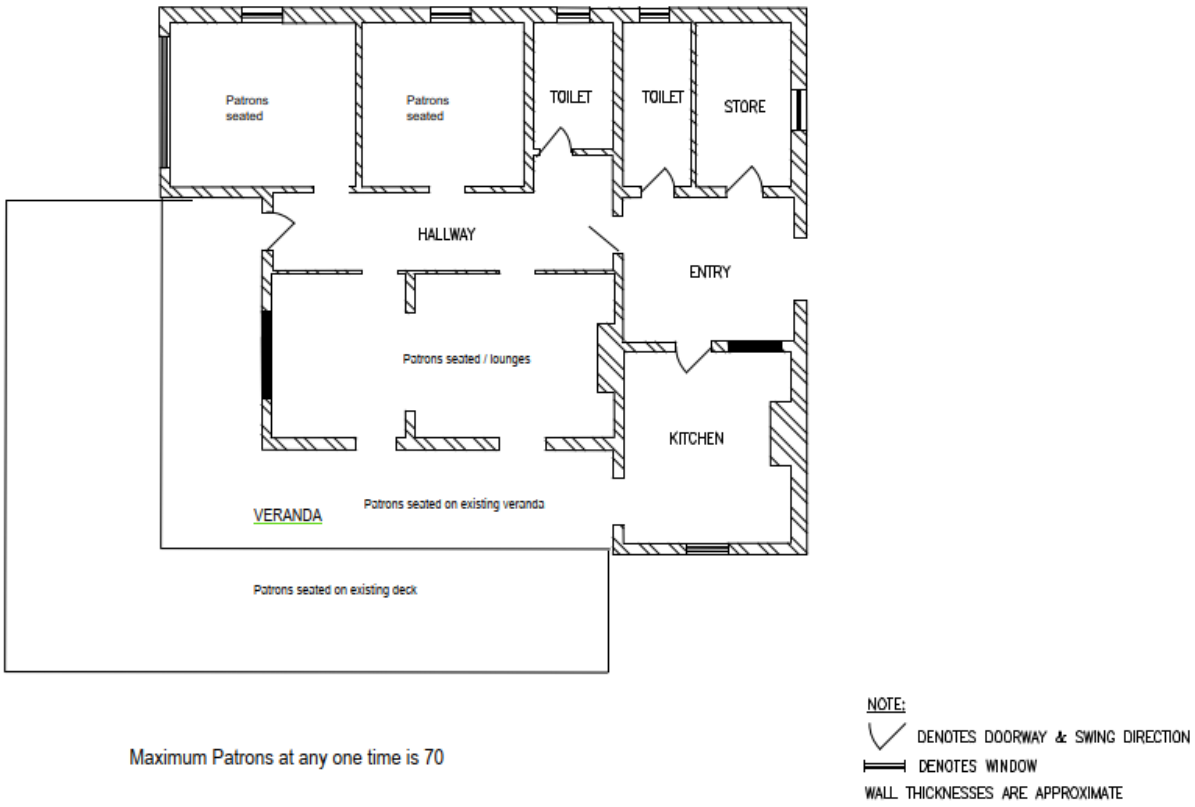


Figure 1 – Longs Cottage Floor Plan

2 ACOUSTIC CRITERIA

There is no new mechanical plant associated with the development, which would be subject to the requirements of the NSW EPA Noise Policy for Industry. The car park and driveway have been assessed to these requirements to ensure compliance with EPA criteria.

The construction works are minor, internal and fewer than three weeks in duration, the scope of works is considered to be "short term" as defined within the EPA Interim Construction Noise Guideline (ICNG). Short term works are defined as:

> *Short-term means that the works are not likely to affect an individual or sensitive land use for more than three weeks in total….*
>
> *Small construction projects in rural areas may not generate significant noise at surrounding residences due to the typically large distances involved.*

As such, the primary assessable noise source associated with the development is café and wine bar operational noise (ie patrons and background music). The relevant criteria for the assessment of café operational noise emissions are the Liquor & Gaming NSW standard noise conditions.

2.1 EPA NOISE POLICY FOR INDUSTRY

For use of the driveway and carpark, the EPA NPFI has two criteria which both are required to be satisfied, namely Intrusiveness and amenity. The following assessment criteria have been determined based on these noise levels. For a residence, the project noise trigger level and maximum noise levels are to be assessed at the reasonably most-affected point on or within the residential property boundary or, if that is more than 30 metres from the residence, at the reasonably most affected point within 30 metres of the residence.

Based on the measured background noise levels at residential receivers, the noise emission criteria presented below apply during the late evening period (6pm – 10pm). This assessment time period (evening) has been selected as it is the most stringent time period for the operation of the proposed car park / driveway, with background noise levels of 36dB(A) L_{90} during this time.

Table 1 - EPA Car Park / Driveway Noise Emission Criteria

Location	Time Period	Project Amenity Criteria dB(A) $L_{eq,15min}$	Intrusiveness Criteria dB(A) $L_{eq,15min}$
	Evening	43	**41**

2.2 LIQUOR & GAMING NSW

Liquor & Gaming NSW provide standard noise conditions. These apply to noise generated by patrons and by music when assessed at residential receivers.

- *"The LA10* noise level emitted from the licensed premises shall not exceed the background noise level in any Octave Band Centre Frequency (31.5Hz -8kHz inclusive) by more than 5dB between 7:00am and 12:00 midnight at the boundary of any affected residence."*
- *The LA10* noise level emitted from the licensed premises shall not exceed the background noise level in any Octave Band Centre Frequency (31.5Hz -8kHz inclusive) between 12:00midnight and 7:00am at the boundary of any affected residence).*

- *Notwithstanding compliance with the above, the noise from the licensed premises shall not be audible within any habitable room in any residential premises between the hours of 12:00 midnight and 7:00am"*

- *LA10 is the average maximum deflection of the noise emission from the licensed premises"*

Assessment criteria has been determined based on noise measurements previously conducted on site as part of the original noise impact assessment, and additional monitoring conducted by Renzo Tonin and Associates at 47-65 Old Castlereagh Road between 5 and 14 June 2023, appended to this letter.

The following assessment criteria have been determined based on these noise levels. These apply when measured outside the open window of a residential façade. Based on the measured noise levels at residential receivers, the noise emission presented in Table 2 apply during the late evening period (6pm – 10pm). This assessment time period (evening) has been selected as it is the most stringent time period for the operation of the café, with background noise levels of 36dB(A) L_{90} during this time.

Table 2 - Summarised Operation Noise (Music/Patron) Noise Emission Criteria dB L_{10}

Receivers	Time	31.5Hz	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	A-wt
47-65 Old Castlereagh Road	Evening (6pm – 10pm)	58	58	50	40	37	33	31	29	25	**41**

3 NOISE EMISSIONS ASSESSMENT

An assessment of noise emissions from the use of the café/ wine bar during the period of 6pm – 10pm has been conducted, considering the proposed operation between these hours.

An assessment of patron and music noise has been conducted and the predicted noise levels are shown below. Noise emissions will be predicted based on the following adopted modelling parameters:

- Patron noise in indoor and outdoor areas are of a sound power level of 77 dB(A)$L_{10,}$ representative of a raised voice, with one in two patrons speaking at any one time and a total of 50 patrons within the cottage and 20 patrons externally.
- Music within the cottage area is to be an internal sound pressure level of 75 dB(A)$_{L10}$. This is representative of amplified "background" music.
- Windows have been assessed as to be open to 5% of the floor area of the room within the cottage.
- Usage of driveway and car park has been assessed at the time of peak usage to be 30 vehicle movements in the PM peak hour. It is noted that the above peak usage corresponds to the highest predicted usage of the associated car parking facilities, and in general use at other times is expected to be significantly lower. Based on this, compliance at predicted peak usage would indicate that acoustic compliance would be readily achieved at all other times.

3.1 PREDICTED NOISE LEVELS FROM COTTAGE

Predicted noise levels from the cottage internal and external spaces to surrounding residents are present below.

Table 3 – Patron/Music Noise Emission

Receivers	f (Hz)	31.5	63	125	250	500	1k	2k	4k	8k	A-wt
47-65 Old Castlereagh Road	Predicted Noise Level dB(A)L_{10}	<20	<20	20	20	26	23	18	<10	<10	**27**
	Noise Emission Goal (Late Evening)	58	58	50	40	37	33	31	29	25	**41**
	Compliance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

3.2 PREDICTED NOISE EMISSIONS FROM DRIVEWAY AND CAR PARK

The average ($L_{eq(15min)}$) noise level generated by a peak period of car park and driveway use is predicted and assessed below.

Table 4 – Predicted Average Noise Levels from Driveway & Carpark

Noise Source	Receiver	Time of Operation	Predicted Sound Level dB(A)$L_{eq(15min}$	Criteria	Compliance
Cars Entering and Leaving Carpark	47-65 Old Castlereagh Road	PM Peak	<30 dB(A) $L_{eq(15min)}$	≤ 41 dB(A) $L_{eq(15mins)}$ (NPI Evening Intrusiveness Criteria)	Yes

3.3 SUMMARY AND DISCUSSION

Based on the above predicted noise levels, we note that internal use of Long Cottage between the hours of 7am – 10pm is acceptable acoustically and is able to comply with the requirements the NSW Liquor & Gaming for the proposed hours of operation.

Whilst the development is compliant without specific additional treatment, we recommend the following to ensure ongoing compliance:

- Music is to be located within the cottage internally and is to be background music only;
- Operational hours of the cottage are between the hours of 7am to 10pm;
- Up to a total of 70 patrons across internal and external cottage spaces;
- Up to 20 patrons externally on the verandah;
- Garbage collection is governed by Council, however removal of Long's Cottage waste to the waste area and refuse is only to be conducted between the hours of 7am and 6pm to reduce noise to residences.
- Hours of internal fit-out construction works are to be limited to:
    - Monday to Friday 7am to 6 pm
    - Saturday 8 am to 1 pm
    - No work on Sundays or public holidays

4 CONCLUSION

This letter has been prepared to provide an additional detailed assessment of the proposed café and wine bar to be located at Longs Cottage as part of the Sydney Helicopters existing development located at 89-151 Old Castlereagh Rd, Castlereagh NSW 2749.

It can be concluded that provided that the recommendations in Section 3.3 of this report are adopted, operational noise emissions of the proposed Longs Cottage will be compliant with the requirements NSW Liquor & Gaming.

Please contact us should you have any further queries.

Yours faithfully,

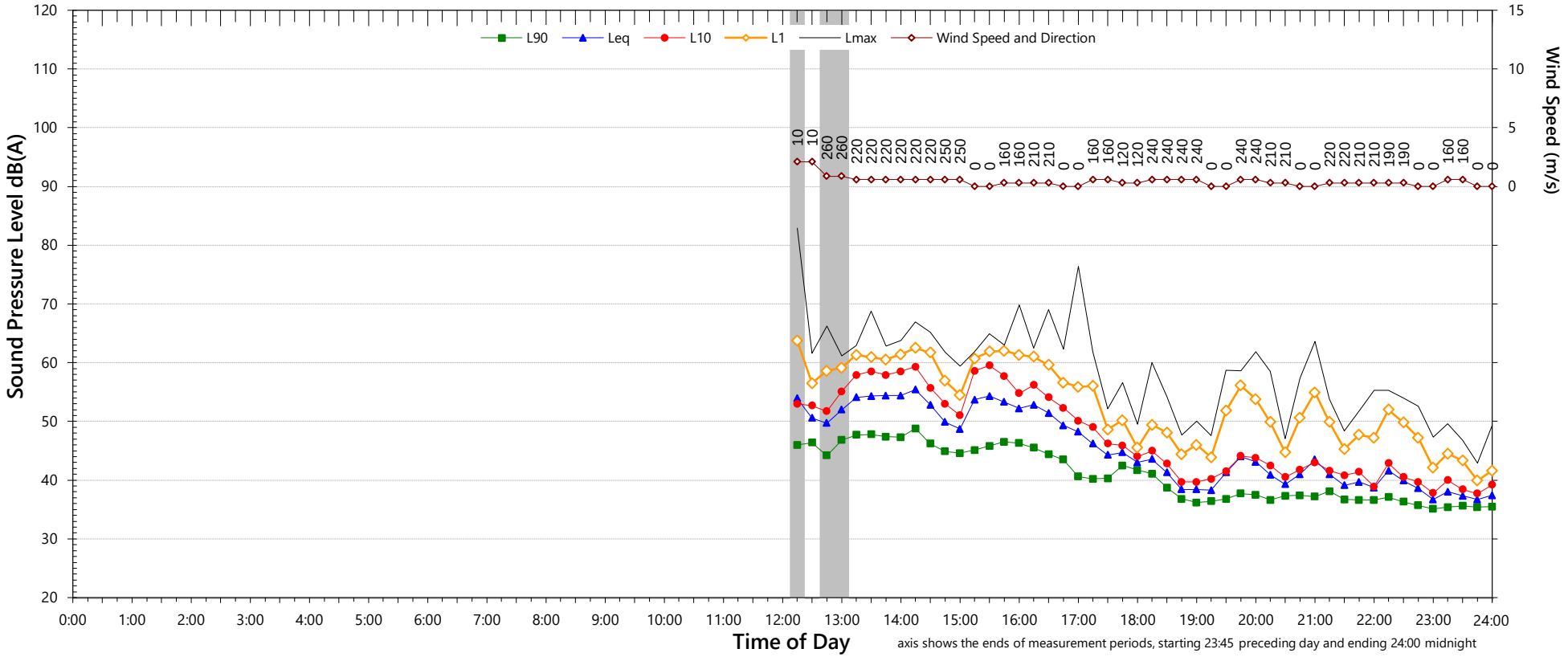
Acoustic Logic Consultancy Pty Ltd
Thomas Aubusson
MAAS

APPENDIX ONE – UNATTENDED NOISE MONITORING

Unattended Noise Monitoring Results

47-65 Old Castlereagh Road

Monday, 5 June 2023



NSW Noise Policy for Industry (Free Field)			
Descriptor	**Day[2]**	**Evening[3]**	**Night[4 5]**
L_{A90} ABL	-	37	31
L_{Aeq}	-	41	39

Night Time Maximum Noise Levels			(see note 7)
L_{AFMax} (Range)	-	to	-
L_{AFMax} - L_{Aeq} (Range)	16	to	19

NSW Road Noise Policy (1m from facade)		(see note 6)
Descriptor	**Day**	**Night[5]**
	7am-10pm	**10pm-7am**
$L_{Aeq\ 15\ hr}$ and $L_{Aeq\ 9\ hr}$	-	42
$L_{Aeq\ 1hr}$ upper 10 percentile	-	43
$L_{Aeq\ 1hr}$ lower 10 percentile	-	37

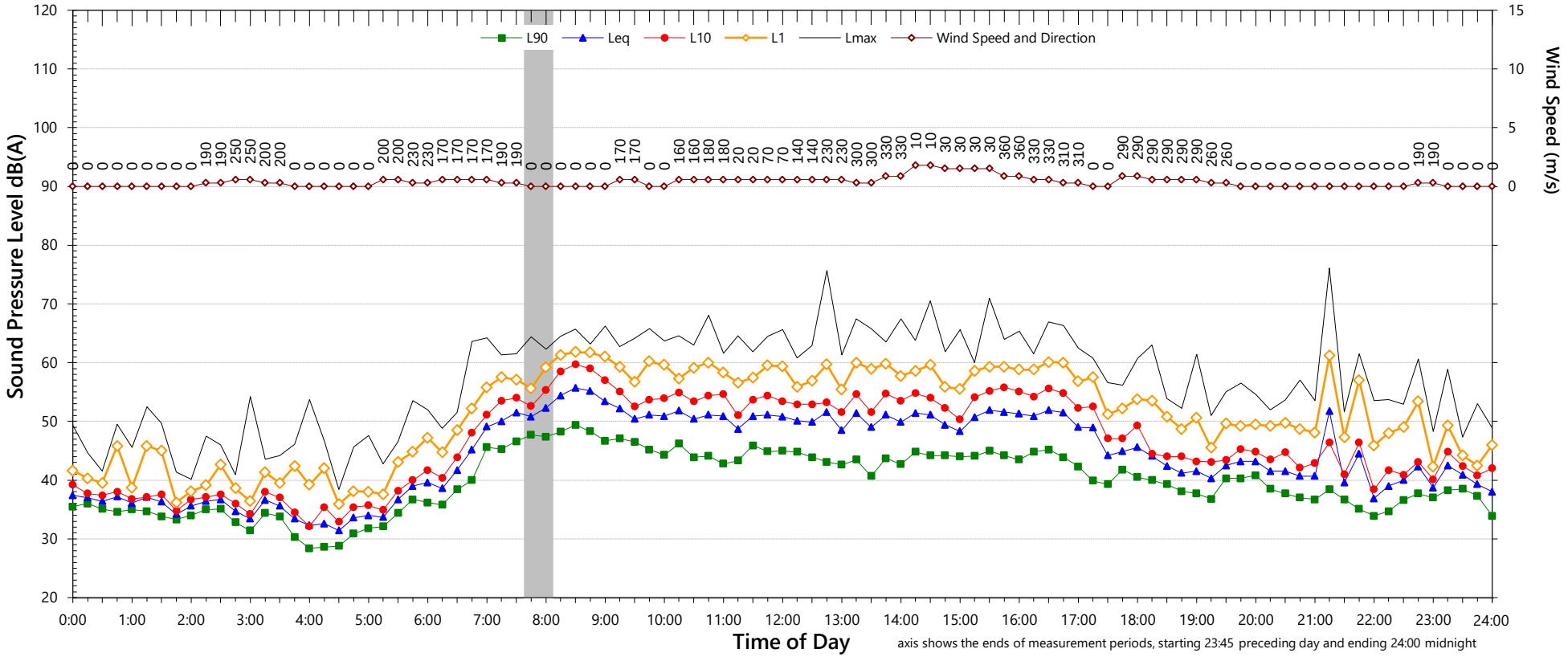
Notes:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Day" is the period from 8am till 6pm on Sundays and 7am till 6pm on other days
3. "Evening" is the period from 6pm till 10pm
4. "Night" relates to the remaining periods
5. "Night" relates to period from 10pm on this graph to morning on the following graph.
6. Graphed data measured in free-field; tabulated results facade corrected
7. 1-hour values for L_{AFMax} are shown only where L_{AFMax} >65dB(A) and where L_{AFMax} - L_{Aeq} ≥15dB(A)

Unattended Noise Monitoring Results

47-65 Old Castlereagh Road

Tuesday, 6 June 2023



NSW Noise Policy for Industry (Free Field)			
Descriptor	**Day[2]**	**Evening[3]**	**Night[4 5]**
L_{A90} ABL	42	36	30
L_{Aeq}	51	44	39

NSW Road Noise Policy (1m from facade)		(see note 6)
Descriptor	**Day**	**Night[5]**
	7am-10pm	**10pm-7am**
$L_{Aeq\ 15\ hr}$ and $L_{Aeq\ 9\ hr}$	53	42
$L_{Aeq\ 1hr}$ upper 10 percentile	54	44
$L_{Aeq\ 1hr}$ lower 10 percentile	45	36

Night Time Maximum Noise Levels			(see note 7)
L_{AFMax} (Range)	65	to	65
L_{AFMax} - L_{Aeq} (Range)	16	to	21

Notes:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
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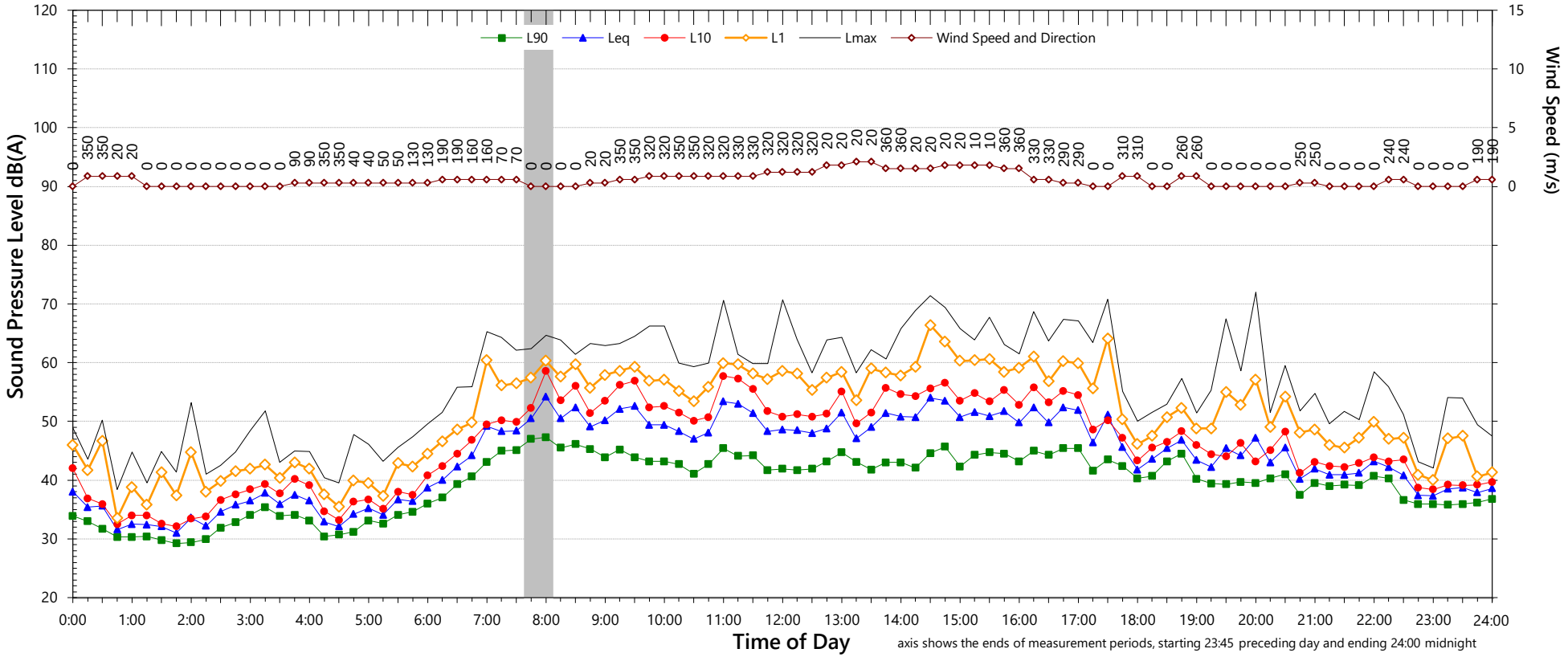
5. "Night" relates to period from 10pm on this graph to morning on the following graph.
6. Graphed data measured in free-field; tabulated results facade corrected
7. 1-hour values for L_{AFMax} are shown only where L_{AFMax} >65dB(A) and where L_{AFMax}- L_{Aeq} ≥15dB(A)

Unattended Noise Monitoring Results

47-65 Old Castlereagh Road

Wednesday, 7 June 2023



axis shows the ends of measurement periods, starting 23:45 preceding day and ending 24:00 midnight

NSW Noise Policy for Industry (Free Field)			
Descriptor	**Day[2]**	**Evening[3]**	**Night[4 5]**
L_{A90} ABL	42	39	34
L_{Aeq}	51	44	39

NSW Road Noise Policy (1m from facade)		(see note 6)
Descriptor	**Day**	**Night[5]**
	7am-10pm	**10pm-7am**
$L_{Aeq\ 15\ hr}$ and $L_{Aeq\ 9\ hr}$	52	42
$L_{Aeq\ 1hr}$ upper 10 percentile	54	43
$L_{Aeq\ 1hr}$ lower 10 percentile	46	40

Night Time Maximum Noise Levels			(see note 7)
L_{AFMax} (Range)	-	to	-
L_{AFMax} - L_{Aeq} (Range)	16	to	22

Notes:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
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3. "Evening" is the period from 6pm till 10pm
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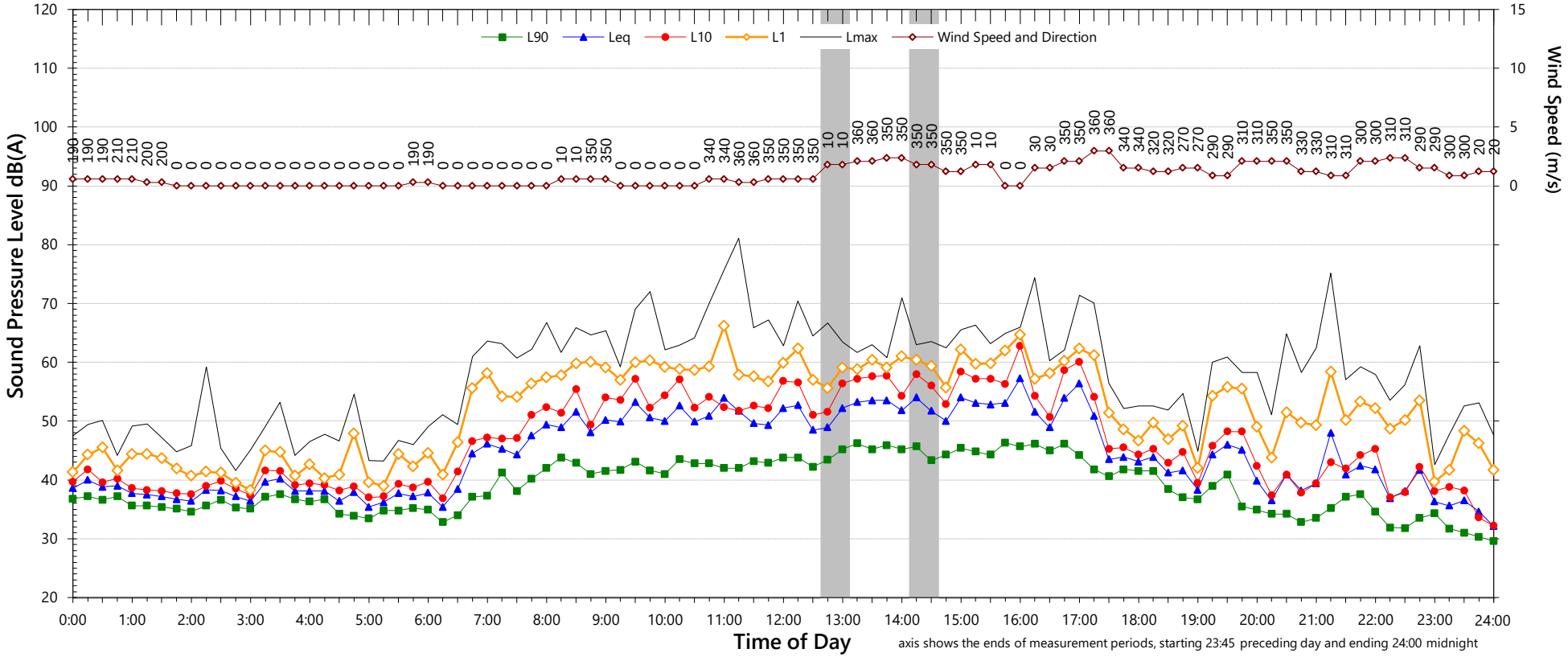
6. Graphed data measured in free-field; tabulated results facade corrected
7. 1-hour values for L_{AFMax} are shown only where L_{AFMax} >65dB(A) and where L_{AFMax}- L_{Aeq} ≥15dB(A)

Unattended Noise Monitoring Results

47-65 Old Castlereagh Road

Thursday, 8 June 2023



axis shows the ends of measurement periods, starting 23:45 preceding day and ending 24:00 midnight

NSW Noise Policy for Industry (Free Field)			
Descriptor	**Day[2]**	**Evening[3]**	**Night[4 5]**
L_{A90} ABL	41	34	30
L_{Aeq}	52	43	43

NSW Road Noise Policy (1m from facade)		(see note 6)
Descriptor	**Day**	**Night[5]**
	7am-10pm	**10pm-7am**
$L_{Aeq\ 15\ hr}$ and $L_{Aeq\ 9\ hr}$	53	45
$L_{Aeq\ 1hr}$ upper 10 percentile	56	50
$L_{Aeq\ 1hr}$ lower 10 percentile	45	37

Night Time Maximum Noise Levels			(see note 7)
L_{AFMax} (Range)	69	to	77
L_{AFMax} - L_{Aeq} (Range)	17	to	35

Notes:

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3. "Evening" is the period from 6pm till 10pm
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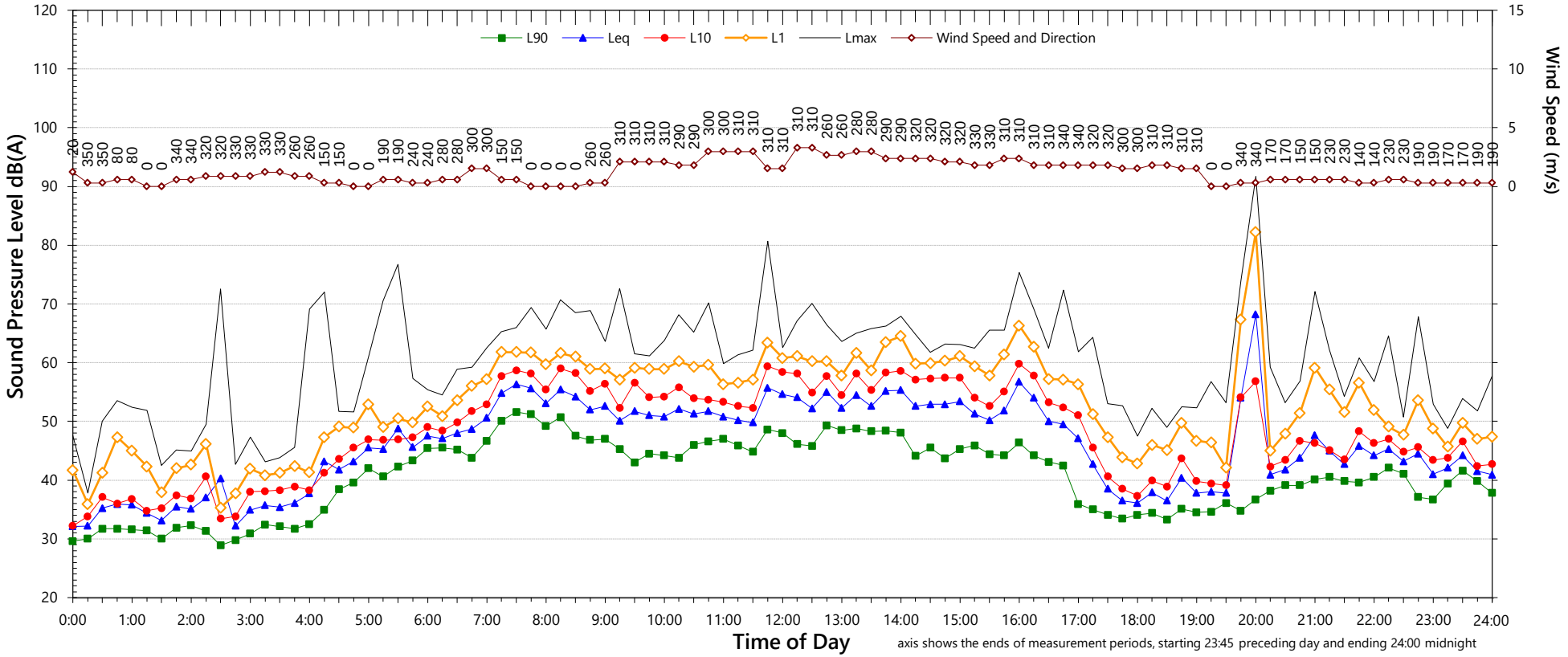
5. "Night" relates to period from 10pm on this graph to morning on the following graph.
6. Graphed data measured in free-field; tabulated results facade corrected
7. 1-hour values for L_{AFMax} are shown only where L_{AFMax} >65dB(A) and where L_{AFMax}- L_{Aeq} ≥15dB(A)

Unattended Noise Monitoring Results

47-65 Old Castlereagh Road

Friday, 9 June 2023



axis shows the ends of measurement periods, starting 23:45 preceding day and ending 24:00 midnight

NSW Noise Policy for Industry (Free Field)			
Descriptor	**Day[2]**	**Evening[3]**	**Night[4 5]**
L_{A90} ABL	38	34	34
L_{Aeq}	53	56	42

Night Time Maximum Noise Levels			(see note 7)
L_{AFMax} (Range)	66	to	78
L_{AFMax} - L_{Aeq} (Range)	15	to	35

NSW Road Noise Policy (1m from facade)		(see note 6)
Descriptor	**Day**	**Night[5]**
	7am-10pm	**10pm-7am**
$L_{Aeq\ 15\ hr}$ and $L_{Aeq\ 9\ hr}$	57	45
$L_{Aeq\ 1hr}$ upper 10 percentile	57	47
$L_{Aeq\ 1hr}$ lower 10 percentile	44	40

Notes:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
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3. "Evening" is the period from 6pm till 10pm
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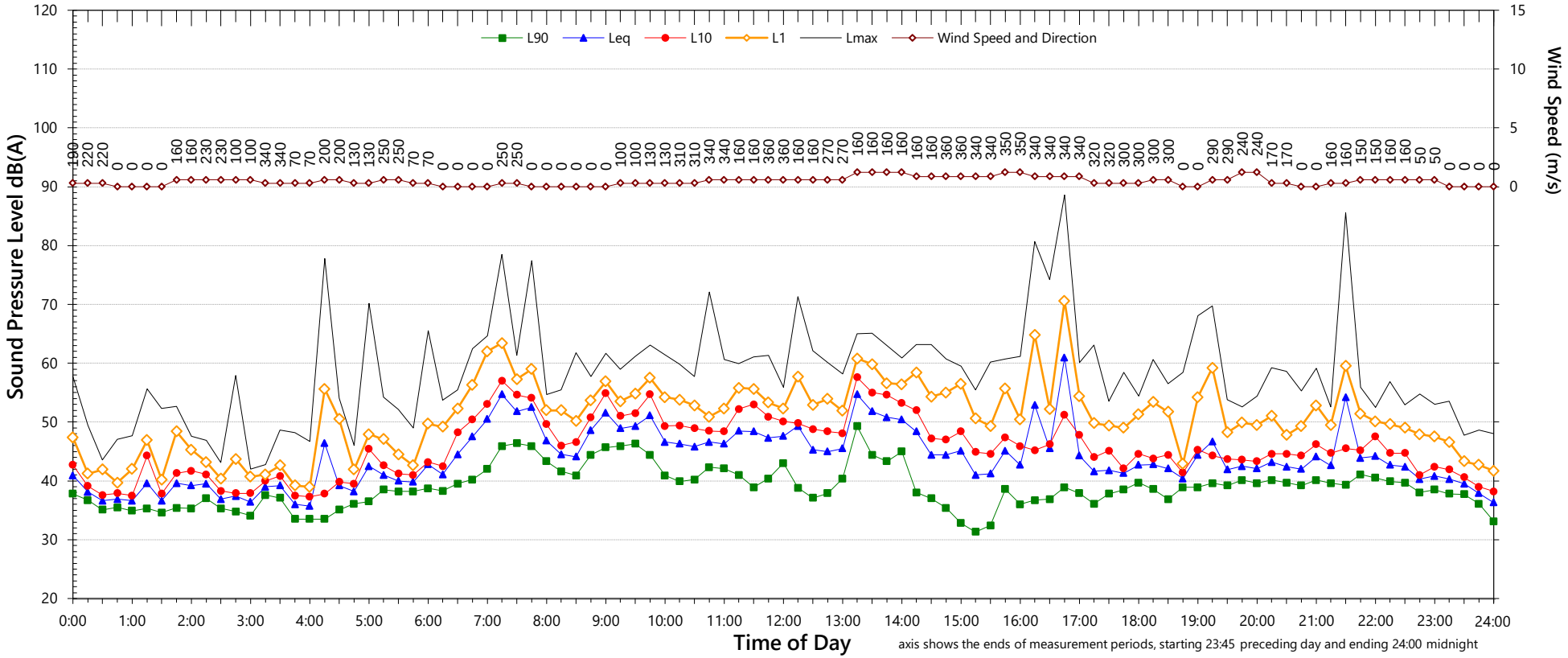
5. "Night" relates to period from 10pm on this graph to morning on the following graph.
6. Graphed data measured in free-field; tabulated results facade corrected
7. 1-hour values for L_{AFMax} are shown only where L_{AFMax} >65dB(A) and where L_{AFMax}- L_{Aeq} ≥15dB(A)

Unattended Noise Monitoring Results

47-65 Old Castlereagh Road

Saturday, 10 June 2023



axis shows the ends of measurement periods, starting 23:45 preceding day and ending 24:00 midnight

NSW Noise Policy for Industry (Free Field)			
Descriptor	**Day[2]**	**Evening[3]**	**Night[4 5]**
L_{A90} ABL	36	39	31
L_{Aeq}	50	46	43

NSW Road Noise Policy (1m from facade)		(see note 6)
Descriptor	**Day**	**Night[5]**
	7am-10pm	**10pm-7am**
$L_{Aeq\ 15\ hr}$ and $L_{Aeq\ 9\ hr}$	52	41
$L_{Aeq\ 1hr}$ upper 10 percentile	55	44
$L_{Aeq\ 1hr}$ lower 10 percentile	45	38

Night Time Maximum Noise Levels			(see note 7)
L_{AFMax} (Range)	-	to	-
L_{AFMax} - L_{Aeq} (Range)	15	to	23

Notes:

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3. "Evening" is the period from 6pm till 10pm
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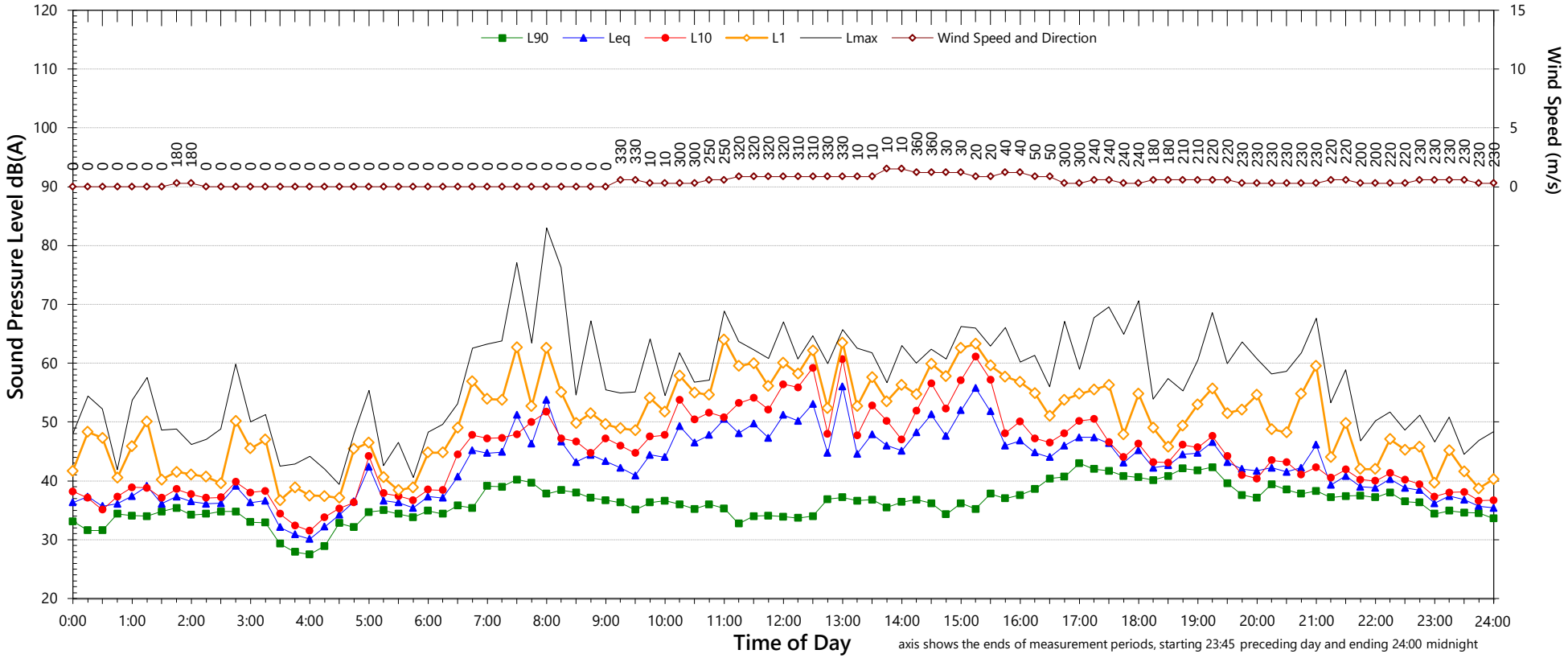
7. 1-hour values for L_{AFMax} are shown only where L_{AFMax} >65dB(A) and where L_{AFMax}- L_{Aeq} ≥15dB(A)

Unattended Noise Monitoring Results

47-65 Old Castlereagh Road

Sunday, 11 June 2023



NSW Noise Policy for Industry (Free Field)			
Descriptor	**Day[2]**	**Evening[3]**	**Night[4 5]**
L_{A90} ABL	34	37	29
L_{Aeq}	49	43	36

Night Time Maximum Noise Levels			(see note 7)
L_{AFMax} (Range)	-	to	-
L_{AFMax} - L_{Aeq} (Range)	16	to	26

NSW Road Noise Policy (1m from facade)		(see note 6)
Descriptor	**Day**	**Night[5]**
	7am-10pm	**10pm-7am**
$L_{Aeq\ 15\ hr}$ and $L_{Aeq\ 9\ hr}$	51	39
$L_{Aeq\ 1hr}$ upper 10 percentile	54	41
$L_{Aeq\ 1hr}$ lower 10 percentile	46	34

Notes:

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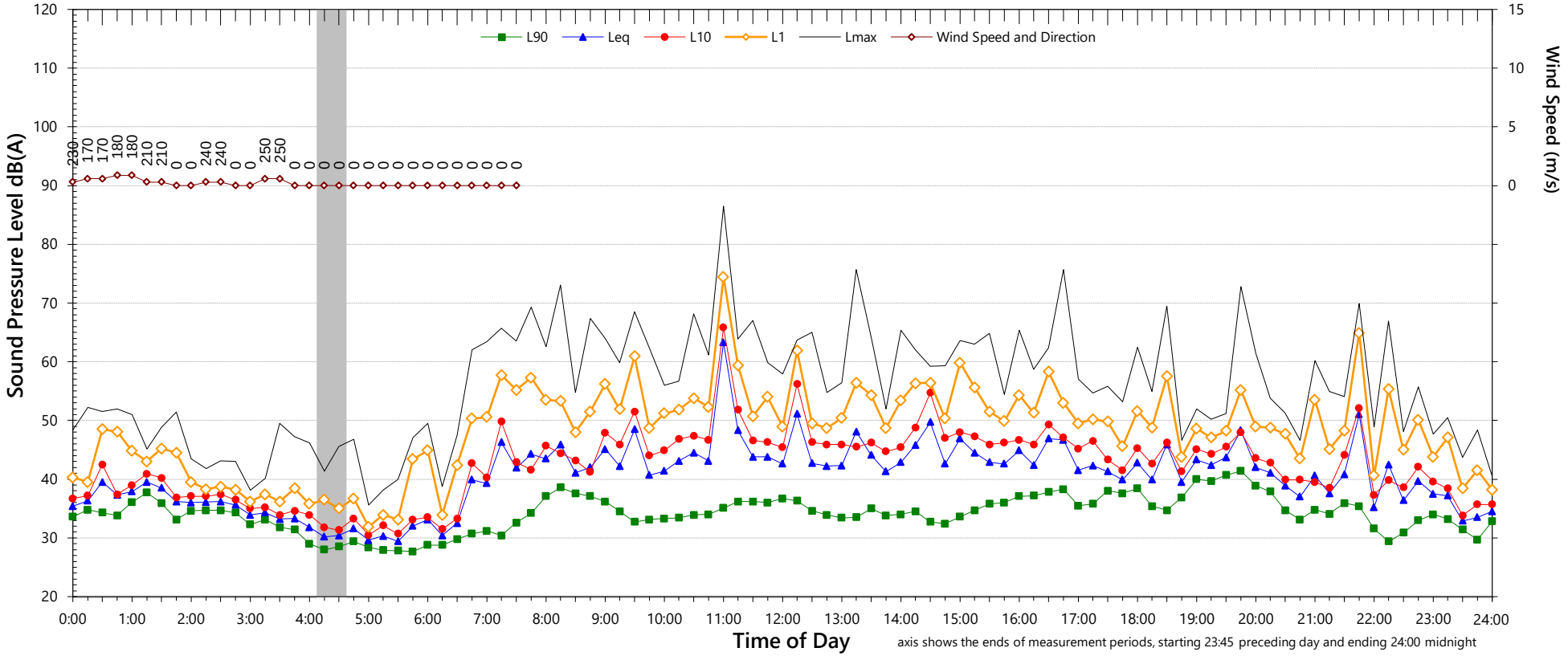
7. 1-hour values for L_{AFMax} are shown only where L_{AFMax} >65dB(A) and where L_{AFMax}- L_{Aeq} ≥15dB(A)

Unattended Noise Monitoring Results

47-65 Old Castlereagh Road

Monday, 12 June 2023



axis shows the ends of measurement periods, starting 23:45 preceding day and ending 24:00 midnight

NSW Noise Policy for Industry (Free Field)			
Descriptor	**Day[2]**	**Evening[3]**	**Night[4 5]**
L_{A90} ABL	33	34	32
L_{Aeq}	49	44	42

Night Time Maximum Noise Levels			(see note 7)
L_{AFMax} (Range)	65	to	67
L_{AFMax} - L_{Aeq} (Range)	16	to	27

NSW Road Noise Policy (1m from facade)		(see note 6)
Descriptor	**Day**	**Night[5]**
	7am-10pm	**10pm-7am**
$L_{Aeq\ 15\ hr}$ and $L_{Aeq\ 9\ hr}$	51	45
$L_{Aeq\ 1hr}$ upper 10 percentile	49	47
$L_{Aeq\ 1hr}$ lower 10 percentile	45	38

Notes:

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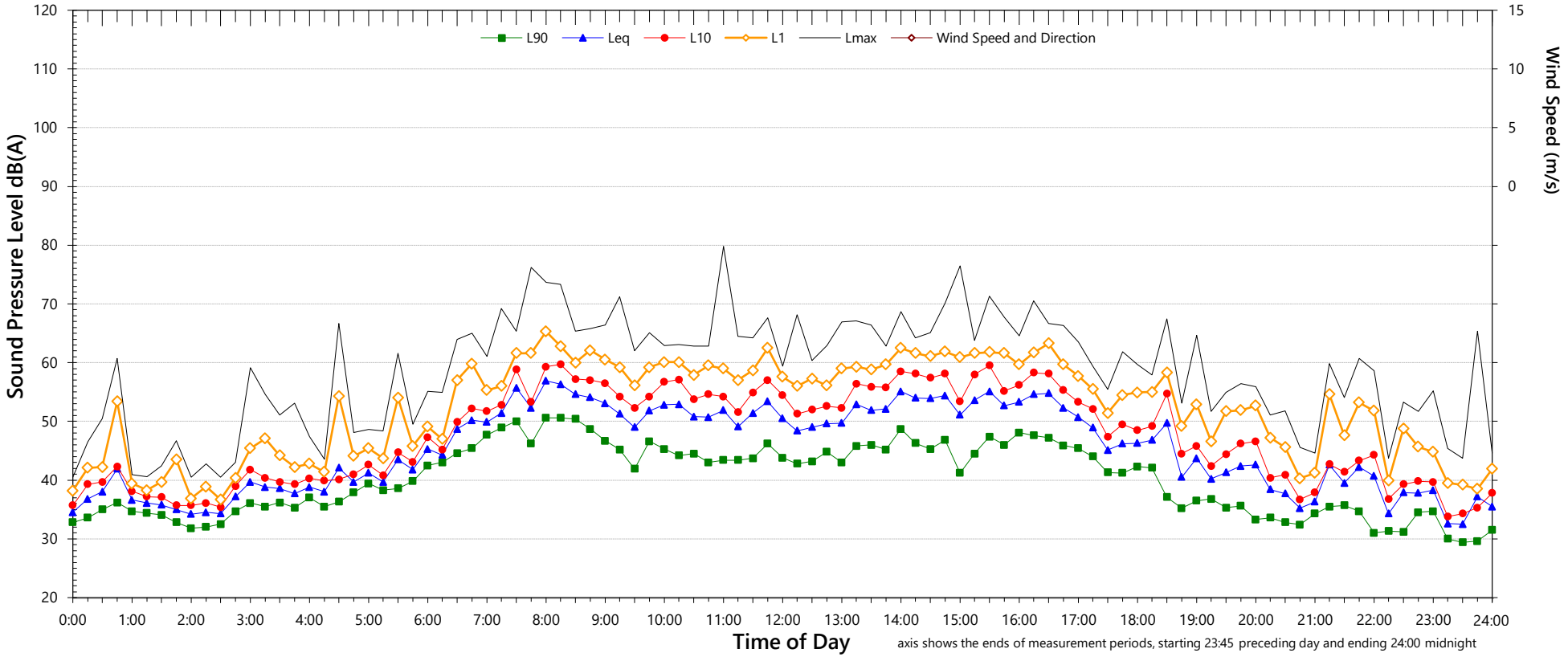
Unattended Noise Monitoring Results

47-65 Old Castlereagh Road

Tuesday, 13 June 2023



NSW Noise Policy for Industry (Free Field)			
Descriptor	**Day[2]**	**Evening[3]**	**Night[4 5]**
L_{A90} ABL	42	33	30
L_{Aeq}	53	43	46

Night Time Maximum Noise Levels			(see note 7)
L_{AFMax} (Range)	65	to	65
L_{AFMax} - L_{Aeq} (Range)	16	to	30

NSW Road Noise Policy (1m from facade)		(see note 6)
Descriptor	**Day**	**Night[5]**
	7am-10pm	**10pm-7am**
$L_{Aeq\ 15\ hr}$ and $L_{Aeq\ 9\ hr}$	54	48
$L_{Aeq\ 1hr}$ upper 10 percentile	57	49
$L_{Aeq\ 1hr}$ lower 10 percentile	44	38

Notes:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Day" is the period from 8am till 6pm on Sundays and 7am till 6pm on other days
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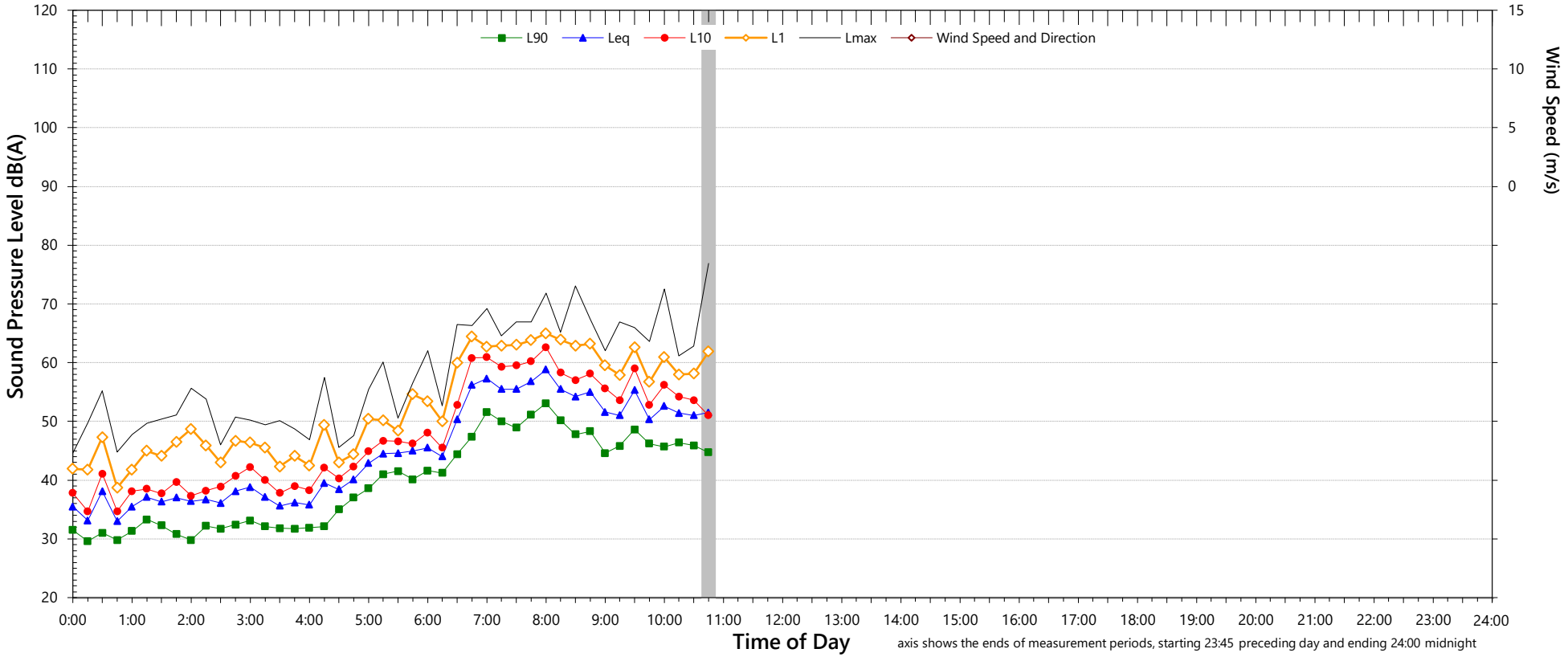
Unattended Noise Monitoring Results

47-65 Old Castlereagh Road

Wednesday, 14 June 2023



NSW Noise Policy for Industry (Free Field)			
Descriptor	**Day[2]**	**Evening[3]**	**Night[4 5]**
L_{A90} ABL	-	-	-
L_{Aeq}	-	-	-

Night Time Maximum Noise Levels			(see note 7)
L_{AFMax} (Range)	-	to	-
L_{AFMax} - L_{Aeq} (Range)	-	to	-

NSW Road Noise Policy (1m from facade)		(see note 6)
Descriptor	**Day**	**Night[5]**
	7am-10pm	**10pm-7am**
$L_{Aeq\ 15\ hr}$ and $L_{Aeq\ 9\ hr}$	-	-
$L_{Aeq\ 1hr}$ upper 10 percentile	-	-
$L_{Aeq\ 1hr}$ lower 10 percentile	-	-

Notes:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Day" is the period from 8am till 6pm on Sundays and 7am till 6pm on other days
3. "Evening" is the period from 6pm till 10pm
4. "Night" relates to the remaining periods
5. "Night" relates to period from 10pm on this graph to morning on the following graph.
6. Graphed data measured in free-field; tabulated results facade corrected
7. 1-hour values for L_{AFMax} are shown only where L_{AFMax} >65dB(A) and where L_{AFMax} - L_{Aeq} ≥15dB(A)