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Royal Far West, 14-22 Wentworth Street & 19-21 South Steyne, Manly

DA Acoustic Assessment

Document Number AC-RPT-0001

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TABLE OF CONTENTS

1 INTRODUCTION

Acoustic Logic (AL) has been engaged to conduct an acoustic assessment of potential noise impacts associated with the proposed mixed-use development at Royal Far West, 14-22 Wentworth Street & 19-21 South Steyne, Manly.

This document addresses noise impacts associated with the following:

- Noise intrusion to project site from adjacent roadways, and
- Noise emissions from mechanical plant to service the project site (in principle).

AL have utilised the following documents and regulations in the noise assessment of the development:

- Northern Beaches Council *Manly Development Control Plan* (DCP) 2013
- Australian Standard AS2107:2016 *Recommended Design Sound Levels and Reverberation Times for Building Interiors*, and
- NSW Environmental Protection Authority (EPA) *Noise Policy for Industry* (NPI) 2017.

This assessment has been conducted using the Murcutt Candalapas architectural drawings (Job *No.: 5899*, Issue 1, dated 10th of June 2022).

2 SITE DESCRIPTION

The project sees the implementation of Stages 3 and 4 of the Concept Approval as modified (Application #MP10_0159 MOD 1) and involves the retention and alterations to the previously constructed Stages 1 and 2 (hospital facility "Centre for Excellence" now known as the ;CCK; building) as well as alterations and additions to Drummond House and the construction of mixed-use buildings which incorporate tourist and visitor accommodation, residential apartments and retail/ commercial uses with basement parking and landscaping.

Investigation has been carried out by this office in regard to the existing properties and noise impacts surrounding the proposed change of use development, which is detailed below:

- Existing residential receivers surrounding the site
- Existing educational receiver to the west, and
- Existing commercial receivers surrounding the site.

Noise monitoring was previously conducted by Renzo Tonin & Associates (RT&A) for the Client in an earlier iteration of the proposed development (*Ref: TL633-01F02*, dated 11th December 2020). Though this proposal is now superseded, the noise monitoring data is still valid for the current proposal. AL have utilised the noise monitoring conducted by RT&A and have conducted a new acoustic assessment. The graphical representation of the monitoring conducted by RT&A has been extracted and replicated in Appendix One – RT&A Noise Monitoring Data.

A site map, measurement description and surrounding receivers are presented in Figure 1 below.

Figure 1 – Project Site
Source: NSW Six Maps

3 NOISE DESCRIPTORS

Environmental noise constantly varies. Accordingly, it is not possible to accurately determine prevailing environmental noise conditions by measuring a single, instantaneous noise level.

To accurately determine the environmental noise a 15-minute measurement interval is utilised. Over this period, noise levels are monitored on a continuous basis and statistical and integrating techniques are used to determine noise description parameters.

In analysing environmental noise, three principal 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 intervals.

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 15-minute period. L_{eq} is important in the assessment of environmental noise impact as it closely corresponds with human perception of a changing noise environment; such is the character of environmental noise.

4 ENVIRONMENTAL NOISE SURVEY

NSW EPA's Rating Background Noise Level (RBL) assessment procedure requires determination of background noise level for each day (the ABL) then the median of the individual days as set out for the entire monitoring period.

Unattended noise monitoring was conducted at the project site previously by RT&A. The processed RBL (lowest 10th percentile noise levels during operation time period) are presented in Table 4-1. Unattended noise monitoring was conducted by RT&A from 10th September 2020 to 18th September 2020. Monitoring data has been extracted and presented in Appendix One – RT&A Noise Monitoring Data.

Attended short term measurements of traffic noise were undertaken by this office to supplement and verify the unattended noise monitoring. The unattended noise monitoring data was deemed to be valid.

4.1 MEASURED RATING BACKGROUND NOISE LEVELS

Summarised rating background noise levels for the project site and immediate surroundings are presented below.

Table 4-1 – Measured Noise Levels

Monitor	Time of day	Rating Background Noise Level dB(A)$L_{90(Period)}$
22 South Steyne, Manly Receiver **R3**	Day (7am – 6pm)	54
	Evening (6pm – 10pm)	56*
	Night (10pm – 7am)	53
22 Wentworth Street, Manly Receiver **R2**	Day (7am – 6pm)	52
	Evening (6pm – 10pm)	51
	Night (10pm – 7am)	49
Rear of Drummond House at 22 Wentworth Street, Manly Receiver **R1**	Day (7am – 6pm)	43
	Evening (6pm – 10pm)	43
	Night (10pm – 7am)	40

*Will be adjusted down to the daytime RBL of 54 per the NSW EPA NPI requirements.

4.2 MEASURED TRAFFIC NOISE LEVELS

The measured traffic noise levels below are based on the unattended noise monitoring conducted by RT&A and verified by AL.

Table 4-2 – Measured Traffic Noise Levels

Location	Time of Day	Traffic Noise Level dB(A)$L_{eq(Period)}$
22 South Steyne, Manly	Day (7am – 6pm)	56
	Evening (6pm – 10pm)	56
	Night (10pm – 7am)	55
22 Wentworth Street, Manly	Day (7am – 6pm)	60
	Evening (6pm – 10pm)	58
	Night (10pm – 7am)	56
Rear of Drummond House at 22 Wentworth Street, Manly	Day (7am – 6pm)	48
	Evening (6pm – 10pm)	44
	Night (10pm – 7am)	41

4.3 PREDICTED TRAFFIC NOISE LEVELS AT FAÇADE

The following noise levels for the site were predicted by RT&A based on long-term noise monitoring attended noise measurements. Attended measurements conducted by this office correlate with the noise monitoring conducted. The predicted traffic noise levels below are based on measurements corrected to a façade noise level. Presented noise level are without façade reflections, i.e., the noise level incident on the façade.

Table 4-3 – Predicted Traffic Noise Levels at Façades

Location	Time of Day	Noise Level – L_{eq}
Eastern Façade of Building D (along 22 South Steyne)	Daytime 7am – 10pm	59 dB(A) $L_{eq\ (15hr)}$
	Night Time 10pm – 7am	57 dB(A) $L_{eq\ (9hr)}$
Northern Façade of Buildings A-D (along 22 Wentworth Street)	Daytime 7am – 10pm	62 dB(A) $L_{eq\ (15hr)}$
	Night Time 10pm – 7am	58 dB(A) $L_{eq\ (9hr)}$

5 EXTERNAL NOISE INTRUSION ASSESSMENT

Site investigation indicates that the major external noise sources around project site are from traffic movements along Wentworth Street, South Steyne and ambient noise from the ocean adjacent to the eastern boundary of the site.

5.1 NOISE INTRUSION CRITERIA

A noise intrusion assessment has been conducted based on the requirements of the following acoustic noise criteria and standards:

- Northern Beaches Council *Manly Development Control Plan* (DCP) 2013, and
- Australian Standard AS2107:2016 *Recommended Design Sound Levels and Reverberation Times for Building Interiors*.

It is noted that the development is not bounding a road considered to be assessed under SEPP Transport and Infrastructure 2021 (formerly ISEPP 2007), therefore AS2107:2016 has been adopted.

5.1.1 Northern Beaches Council *Manly Development Control Plan* 2013

Part 3.4.2.3 of the Manly Precincts DCP states the following with regard to acoustic privacy and applicable criteria and controls relevant to this site:

3.4.2.3 Acoustical Privacy (Noise Nuisance)

See also Noise Guide for Local Government prepared by NSW Department of Environment, Climate Change and Water in 2010.

a) Consideration must be given to the protection of acoustical privacy in the design and management of development.

b) Proposed development and activities likely to generate noise including certain outdoor living areas like communal areas in Boarding Houses, outdoor open space, driveways, plant equipment including pool pumps and the like should be located in a manner which considers the acoustical privacy of neighbours including neighbouring bedrooms and living areas.

c) Council may require a report to be prepared by a Noise Consultant that would assess likely Noise and vibration impacts and may include Noise and vibration mitigation strategies and measures.

As no specific controls are outlined by the DCP, AS2107:2016 shall be adopted.

5.1.2 Australian Standard AS2107:2016 *Recommended Design Sound Levels and Reverberation Times for Building Interiors*

AS2107:2016: Recommended design sound levels and reverberation times for building interiors specifies allowable internal noise levels for internal spaces within residential and commercial buildings. Table 1, in Section 5 of AS2107:2016, gives the following maximum internal noise levels for commercial buildings and residential buildings near major roads.

Table 5-1 – Recommended Design Sound Levels

Space /Activity Type	Recommended Design Sound Levels
Sleeping Areas	35-40 dB(A) $L_{eq\ (10pm\text{-}7am)}$
Living Areas	35-45 dB(A) $L_{eq\ (anytime)}$
Foyers/ Lobbies/ Lift Lobbies	45-50 dB(A) $L_{eq\ (anytime)}$
Function Areas (Multipurpose Space)	40-45 dB(A) $L_{eq\ (when\ in\ use)}$
General Offices (Commercial)	40-45 dB(A) $L_{eq\ (when\ in\ use)}$
Coffee Shops/ Restaurants	40-50 dB(A) $L_{eq\ (when\ in\ use)}$

5.1.3 Summarised External Noise Intrusion Criteria

The internal noise criteria adopted for each internal space is therefore summarised below based on the relevant State, Council and Australian Standard requirements.

Table 5-2 – Adopted Internal Noise Levels

Space /Activity Type	Adopted Internal Noise Levels
Sleeping Areas	35 dB(A) $L_{eq\ (10pm\text{-}7am)}$
Living Areas	40 dB(A) $L_{eq\ (anytime)}$
Foyers/ Lobbies/ Lift Lobbies	45 dB(A) $L_{eq\ (anytime)}$
Function Areas (Multipurpose Space)	45 dB(A) $L_{eq\ (when\ in\ use)}$
General Offices (Commercial)	45 dB(A) $L_{eq\ (when\ in\ use)}$
Coffee Shops/ Restaurants	50 dB(A) $L_{eq\ (when\ in\ use)}$

5.2 COMPLYING CONSTRUCTIONS

Assessment of façade requirements to achieve required indoor noise levels has been undertaken. Dimensions of rooms, setbacks from roadways, window openings and floor areas have been used. Discussion has been made with regard to the existing constructions onsite. The complying constructions below take into account constructions that are being retained based on the architectural plans.

5.2.1 Glazed Windows and Doors

The following constructions will comply with the project noise objectives. Aluminium framed/sliding glass doors and windows will be satisfactory provided they meet the following criteria. All external windows and doors listed are to meet the minimum constructions and Rw values as defined in Table 5-3 and Table 5-4. If existing glazing cannot be replaced due to heritage issues, it is recommended to apply new acoustic seals to current glazed elements if feasible.

Thicker glazing may be required for structural, safety or other purposes. Where it is required to use thicker glazing than scheduled, this will also be acoustically acceptable. The complying constructions are detailed in Table 5-3.

Table 5-3 – Complying Glazing Construction

<table>
<tr><th>Building</th><th>Room</th><th>Glazing Thickness</th></tr>
<tr><td rowspan="2">B (Drummond House)</td><td>Lobby, Lounges, Activities Room</td><td>4mm Float</td></tr>
<tr><td>Guest Rooms</td><td>6.38mm Laminated</td></tr>
<tr><td rowspan="8">C</td><td>Café</td><td rowspan="2">4mm Float</td></tr>
<tr><td>Lobbies</td></tr>
<tr><td>Commercial</td><td>6mm Float</td></tr>
<tr><td>Bedrooms</td><td rowspan="7">6.38mm Laminated</td></tr>
<tr><td>Living Rooms</td></tr>
<tr><td>Multipurpose Space</td></tr>
<tr><td rowspan="2">Restaurants</td></tr>
<tr><td rowspan="3">D</td></tr>
<tr><td>Bedrooms</td></tr>
<tr><td>Skylights</td></tr>
<tr><td>Living Rooms</td><td>6mm Float</td></tr>
</table>

It is recommended that only window systems having test results indicating compliance with the required ratings obtained in a certified laboratory be used.

In addition to complying with the minimum scheduled glazing thickness, the R_w rating of the glazing fitted into open-able frames and fixed into the building opening should not be lower than the values listed in Table 5-4 for all areas. The frame will need to be sealed into the building opening using a flexible sealant.

Table 5-4 – Minimum R_w of Glazing Assembly

Glazing Assembly	Minimum R_w of Installed Window
4mm Float	27
6mm Float	29
6.38mm Laminated	31

Note: Façade constructions to be reviewed at CC stage based on construction drawings. The glazing types listed above are indicative and for authority approvals purposes only

5.2.2 External Roof/Ceiling Construction

The existing external roof construction is constructed from concrete/ terracotta tiles with metal deck construction at the rear of the site. Internal ceilings are assumed to be 10mm thick plasterboard from the on-site inspection. Based on measurements conducted within the worst affected bedroom (bedroom 1), no acoustic upgrading is required. In the event that any new penetrations are required through the external skin, an acoustic sealant should be used to minimise all gaps.

5.2.3 External Wall Construction

The existing wall construction is masonry, therefore acoustic upgrading is not required. There should not be vents on the internal skin of external walls. In the event that any penetrations are required through the external skin, an acoustic sealant should be used to minimise all gaps.

5.2.4 Natural Ventilation

Though this development does not require assessment under SEPP *Transport & Infrastructure* 2021 and in extension the NSW Department of Planning *Development Near Rail Corridors and Busy Roads – Interim Guideline* 2008, a natural ventilation assessment is presented below.

With respect to natural ventilation of a dwelling, the NSW Department of Planning *Development near Busy Roads and Rail Corridors – Interim Guideline* dictates that:

> *"If internal noise levels with windows or doors open exceed the criteria by more than 10dB(A), the design of the ventilation for these rooms should be such that occupants can leave windows closed, if they so desire, and also to meet the ventilation requirements of the Building Code of Australia."*

With windows open, the allowable internal noise goal is permitted to be 10dB(A) higher than when the windows are closed (i.e. – allowable level in bedrooms becomes 45dB(A) $L_{eq(9hr)}$ and 50dB(A) $L_{eq(anytime)}$for living rooms).

Assessment of internal noise levels in an open window scenario has been undertaken. Dimensions of rooms, setbacks from roadways, window openings, floor areas and directivity have been used.

Table 5-5 – Natural Ventilation Predictions

Building	Worst Affected Room	Period	Predicted External Noise Level L_{Aeq}	Predicted Internal Noise Level L_{Aeq}	Internal Noise Level Criteria L_{Aeq}	Complies?
B	Guest Rooms facing Wentworth Street	Day (7am-10pm)	59	49	50	Yes
		Night (10pm-7am)	55	45	45	Yes
C	Living Rooms facing Wentworth Street	Day (7am-10pm)	57	47	50	Yes
	Bedrooms facing Wentworth Street	Night (10pm-7am)	53	43	45	Yes
D	Living Rooms facing Wentworth Street	Day (7am-10pm)	58	48	50	Yes
	Bedrooms facing Wentworth Street	Night (10pm-7am)	54	44	45	Yes

As the worst affected rooms in each building have been assessed to comply, all external façades will be able to achieve required internal noise levels with windows or doors open.

6 NOISE EMISSION CRITERIA

The noise emission from the project site shall comply with the requirements of the following documents:

- Northern Beaches Council *Manly Development Control Plan* (DCP) 2013, and
- NSW Environmental Protection Authority (EPA) *Noise Policy for Industry* (NPI) 2017.

6.1 NORTHERN BEACHES COUNCIL *MANLY DEVELOPMENT CONTROL PLAN* 2013

Part 3.9.3 of the Manly DCP 2013 states the following with regard to mechanical noise emissions and applicable criteria and controls relevant to this site:

3.9.3 Noise from Mechanical Plant

External mechanical plant systems (for pools, air conditioning and the like) must be acoustically enclosed and located centrally and away from neighbours living areas of neighbouring properties and side and rear boundaries.

Note: Excessive noise from the operation of mechanical plant such as air conditioning units, swimming pool pumps, and ventilation and refrigeration systems can disturb residents, disrupt sleep, interfere with normal daily activities or significantly impact on people's health.

As no specific controls are outlined by the DCP, the NSW EPA NPI 2017 shall be adopted.

6.2 NSW EPA NOISE POLICY FOR INDUSTRY (NPI) 2017

The EPA NPI has two criteria which both are required to be satisfied, namely Intrusiveness and amenity. The NPI sets out acceptable noise levels for various localities. The policy indicates four categories to assess the appropriate noise level at a site. They are rural, suburban, urban and urban/industrial interface. Under the policy the nearest residential receivers would be assessed against the urban criteria.

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

6.2.1 Intrusiveness Criterion

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 Table 4-1. Noise emissions from the site should comply with the noise levels presented below when measured at nearby property boundary.

6.2.2 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.

The EPA's NPI sets out acceptable noise levels for various localities. The recommended noise amenity area is based upon the measured background noise levels at the sensitive receiver. Based on the measured background noise levels detailed in Table 4-1, the Noise Policy for Industry suggests the adoption of the 'urban' categorisation.

It is noted that receivers **R2** and **R3** are zoned in B2 Local Centre, and that receiver **R1** is zoned within an R3 medium density residential zone. As measured background noise levels exceed 35 dB(A) at night time, the urban categorisation is most appropriate per the NPI.

The NPI requires project amenity noise levels to be calculated in the following manner:

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

The amenity levels appropriate for the receivers surrounding the site are presented in Table 6-1.

Table 6-1 – EPA Amenity Noise Levels

Type of Receiver	Time of day	Recommended Noise Level dB(A)$L_{eq(period)}$	Project Amenity Noise Level dB(A)$L_{eq(15\ minute)}$
Residential – Urban	Day	60	58
	Evening	50	48
	Night	45	43

The NSW EPA Noise Policy for Industry (2017) defines:

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

6.2.3 Sleep Arousal Criteria

The Noise Policy for Industry recommends the following noise limits to mitigate sleeping disturbance:

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

- *$L_{eq,15min}$ 40 dB(A) or the prevailing RBL plus 5 dB, whichever is the greater, and/or*
- *L_{Fmax} 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 6-2 – Sleep Arousal Criteria for Residential Receivers

Receiver	Rating Background Noise Level (Night) dB(A)L_{90}	Emergence Level
R1 Residential Receiver Night (10pm – 7am)	40 dB(A) L_{90}	45 dB(A)$L_{eq, 15min}$; 55 dB(A)L_{Fmax}
R2 Residential Receiver Night (10pm – 7am)	49 dB(A) L_{90}	44 dB(A)$L_{eq, 15min}$; 54 dB(A)L_{Fmax}
R3 Residential Receiver Night (10pm – 7am)	53 dB(A) L_{90}	58 dB(A)$L_{eq, 15min}$; 68 dB(A)L_{Fmax}

6.3 SUMMARISED NOISE EMISSION CRITERIA

Table 6-3 – Noise Emission Criteria (Current Residents Surrounding Project Site)

Residential Receiver	Time Period	Assessment Background Noise Level dB(A)L_{90}	Project Amenity Criteria dB(A) L_{eq}	Intrusiveness Criteria $L_{eq(15min)}$	NPI Criteria for Sleep Disturbance
R1	Day	43	58	**48**	N/A
	Evening	43	48	**48**	N/A
	Night	40	43	**43**	**45 dB(A)$L_{eq, 15min}$; 55 dB(A)L_{Fmax}**
R2	Day	52	58	**57**	N/A
	Evening	51	**48**	56	N/A
	Night	49	**43**	54	**44 dB(A)$L_{eq, 15min}$; 54 dB(A)L_{Fmax}**
R3	Day	54	**58**	59	N/A
	Evening	54*	**48**	59	N/A
	Night	53	**43**	58	**58 dB(A)$L_{eq, 15min}$; 68 dB(A)L_{Fmax}**

*Adjusted down to the daytime RBL of 54 per the NSW EPA NPI requirements.

The project noise trigger levels are indicated by the bolded values in the table above.

7 NOISE EMISSION ASSESSMENT

7.1 NOISE FROM MECHANICAL PLANT WITHIN PROPOSED SITE GENERALLY

Detailed plant selection and location has been preliminarily undertaken at this stage. Satisfactory levels will be achievable through appropriate plant selection, location and if necessary, standard acoustic treatments such as duct lining, acoustic silencers and enclosures.

Noise emissions from all mechanical services to the closest residential receiver should comply with the requirements of Section 6.

Detailed acoustic review should be undertaken at CC stage to determine acoustic treatments to control noise emissions to satisfactory levels. The below comments are preliminary in nature to aid in design for potential treatments, however are not to be conditioned to due to the preliminary nature of the design.

7.1.1 Building B Rooftop Condensers and Mechanical Plant

Kitchen exhaust fans shall **indicatively** include Q-Seal attenuators and minimum 1m of 25mm internally lined rigid ducting with Melinex or Acoustituff to both intake and discharge sides and be appropriately vibration isolated. Fan to be wrapped in one layer of 25mm thick 5kg/,^{2} Acoustic Supplies Vibralag or equivalent and further boxed with a layer of 9mm FC sheet including flexible connections. Further treatments may be required depending on fan selections and shall be further reviewed in CC Stage.

All condensers to include a Stage 2 night mode card and be appropriately vibration isolated. Condenser decks to have minimum 2.1m high acoustic barriers from local roof height with absorptive insulation attached. Architectural planters adjacent to plant decks to be minimum 1m high and are relied upon for acoustic attenuation.

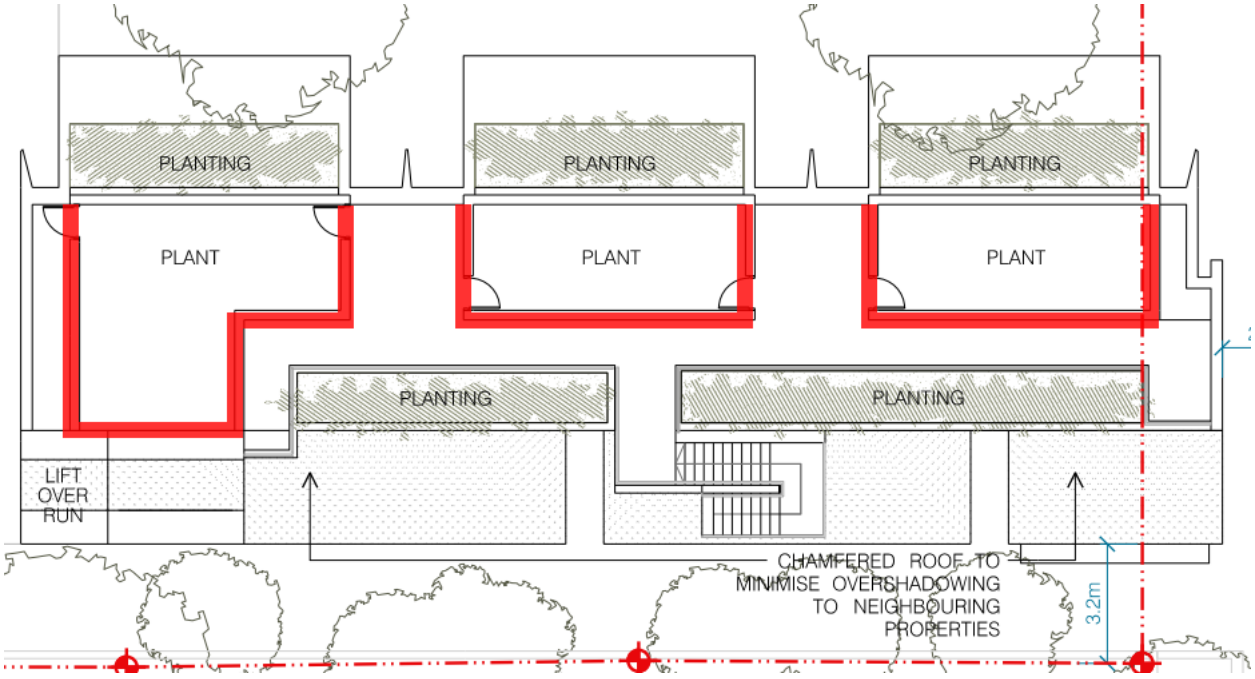


Figure 2 – 2.1m High Barriers

7.1.2 Building C Rooftop Condensers and Mechanical Plan

Kitchen exhaust fan shall **indicatively** include a 2.4m long 45% open area attenuator with Melinex or Acoustituff lining on the intake side and a Fantech C1-080QS Q-Seal attenuator to the discharge side and be appropriately vibration isolated. All condensers to include a night mode card and be appropriately vibration isolated. Further review to be conducted in CC Stage.

7.1.3 Building D Rooftop Condenser Banks

All condensers to include a Stage 2 night mode card and be appropriately vibration isolated. Further review to be conducted in CC Stage.

7.1.4 Carpark Air Supply

Carpark supply fan shall **indicatively** include a rectangular attenuator with 43% open area to the intake side, lined ducting to the discharge side and be appropriately vibration isolated. Further treatments may be required depending on fan selections and shall be further reviewed in CC Stage.

7.1.5 Carpark Exhaust

Carpark exhaust fan shall **indicatively** include a 1-d unpodded circular attenuator and lined ducting to the discharge side and be appropriately vibration isolated. Fan to be wrapped in one layer of 25mm thick 5kg/,^{2} Acoustic Supplies Vibralag or equivalent and further boxed with 2 layers of 9mm FC sheet including flexible connections. Further treatments may be required depending on fan selections and shall be further reviewed in CC Stage.

7.2 GROUND FLOOR COMMERCIAL/ RETAIL

Though the ground floor commercial/ retail tenancies will be subject to their own DA. Preliminary constructions that will minimise acoustic impacts to nearby residents include the addition of acoustically absorptive lining or material to the underside/ soffit of the individual tenancies, however, will be subject to each individual DA assessment tailored to their individual tenancy types.

7.3 COMMUNAL OPEN SPACE

Noise generated by usage of the communal open space has been assessed with regard to the communal rooftop outdoor area on the northern end of the roof of building C. The current roof plan indicates a total of 34 seats. An assessment has been conducted assuming one in two patrons are talking and the following noise source levels for male and female voice. It is assumed that around half of the patrons will be male and the other half female.

Table 7-1 – L_{eq} Sound Power Level Spectrum of Communal Area Noise Sources, dB

	Octave Band Centre Frequency (Hz)						
	250	**500**	**1000**	**2000**	**4000**	**8000**	**A-wt dB(A)L_{10}**
Male normal voice (dB)	66	68	62	57	54	49	**69**
Female normal voice	62	65	60	55	54	50	**66**

Table 7-2 – Predicted Noise Level at R1

Receiver	**Operating Conditions**	**Predicted Noise Level (L_{Aeq})**	**Project Noise Trigger Level at Night (L_{Aeq})**	**Complies?**
R1	34 patrons on roof communal area with 17 patrons (9 males & 8 females) talking simultaneously at normal voice levels (while others are listening)	24 dB(A)	< 45 dB(A)	Yes

8 CONCLUSION

This report presents an acoustic assessment of noise impacts associated with the development to be located at Royal Far West, 14-22 Wentworth Street & 19-21 South Steyne, Manly.

Provided that the complying constructions presented in Section 5.2 are adopted, internal noise levels for the development will comply with the acoustic requirements of the following documents:

- Northern Beaches Council *Manly Development Control Plan* (DCP) 2013, and
- Australian Standard AS2107:2016 *Recommended Design Sound Levels and Reverberation Times for Building Interiors*.

External noise emissions criteria have been established in this report to satisfy the requirements from the following documents:

- Northern Beaches Council *Manly Development Control Plan* (DCP) 2013, and
- NSW Environmental Protection Authority (EPA) *Noise Policy for Industry* (NPI) 2017.

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

Yours faithfully,

Acoustic Logic Pty Ltd
Weber Yeh

APPENDIX ONE – RT&A NOISE MONITORING DATA

The following pages have been extracted from the now superseded acoustic report prepared for the Client for a previous iteration of this development (*Ref: TL633-01F02*, dated 11th December 2020).

APPENDIX E Results of Noise Survey

E.1 Ambient Noise Survey

Unattended noise monitoring location L1: 22 South Steyne, Manly
Survey Period: 10/09/2020 to 18/09/2020

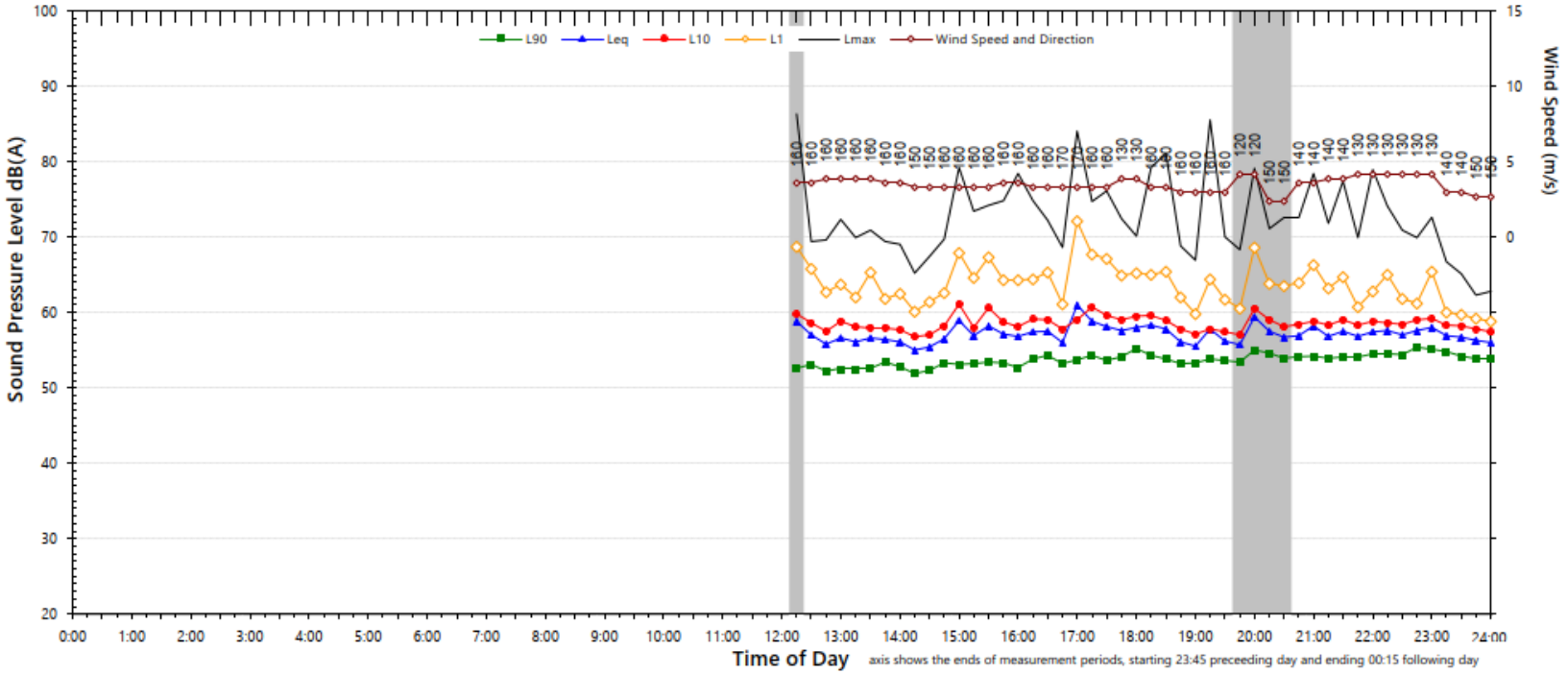
Unattended noise monitoring location L2: 22 Wentworth Street, Manly
Survey Period: 10/09/2020 to 17/09/2020

Unattended noise monitoring location L3: Rear of Drummond House at 22 Wentworth Street, Manly
Survey Period: 10/09/2020 to 16/09/2020

Unattended Noise Monitoring Results

22 South Steyne, Manly

Thursday, 10 September 2020



NSW Noise Policy for Industry (Free Field)			
Descriptor	Day[2]	Evening[3]	Night[4 5]
L_{90}	-	-	54
LAeq (see note 6)	-	-	55

Night Time Maximum Noise Levels			(see note 7)
L_{Max} (Range)	74	to	81
L_{Max} - L_{eq} (Range)	17	to	24

NSW Road Noise Policy (1m from facade)		
Descriptor	Day	Night[5]
	7am-10pm	10pm-7am
$L_{eq\ 15\ hr}$ and $L_{eq\ 9\ hr}$	57	57
$L_{eq\ 1hr}$ upper 10 percentile	58	58
$L_{eq\ 1hr}$ lower 10 percentile	56	56

Notes:

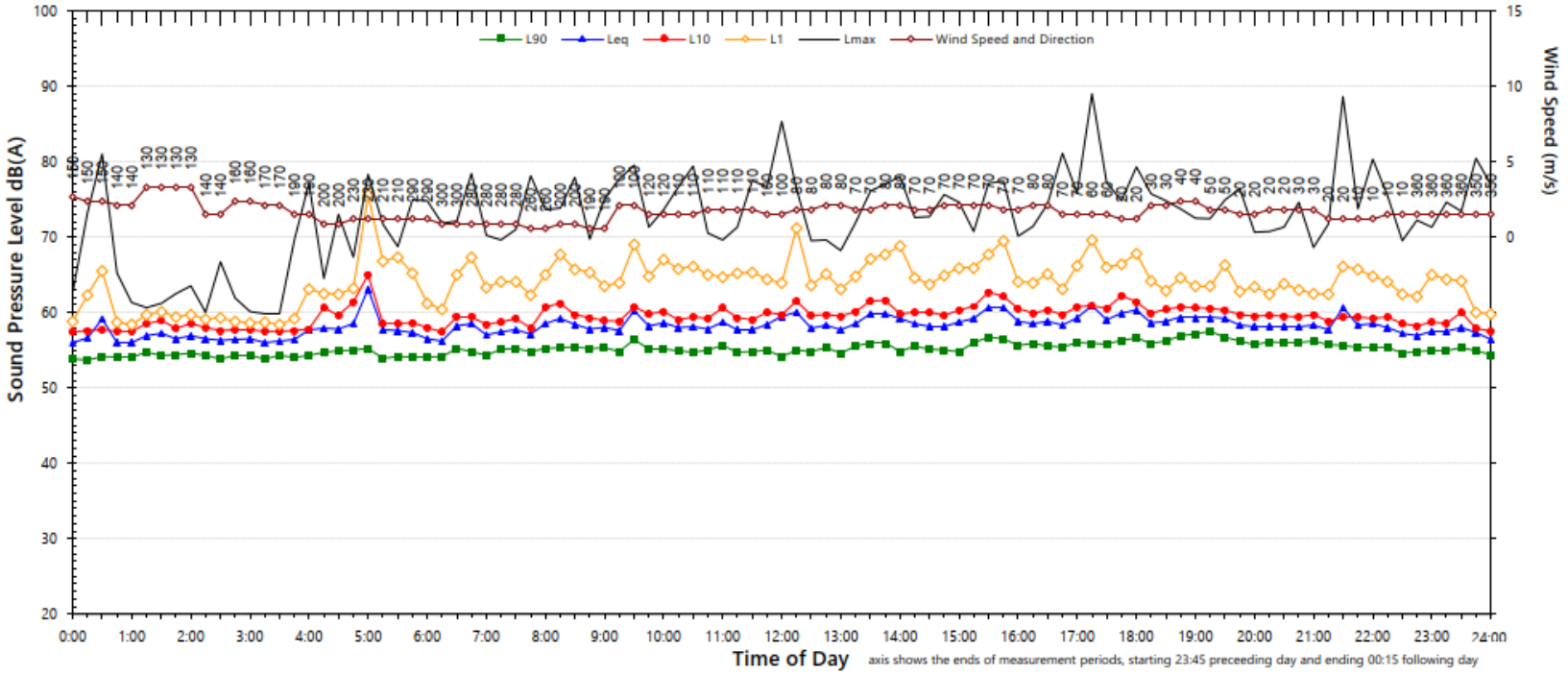
1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Day" is the period from 8am till 6pm on Sundays and 7am til 6pm on other days
3. "Evening" is the period from 6pm till 10pm
4. "Night" relates to the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

Data File: 2020-09-10_SLM_000_123_Rpt_Report.txt TL633-01L01 South Steyne RTA6-005 (r1) QTE-26 Logger Graphs Program (r33)

Unattended Noise Monitoring Results

22 South Steyne, Manly

Friday, 11 September 2020



NSW Noise Policy for Industry (Free Field)			
Descriptor	Day[2]	Evening[3]	Night[4 5]
L_{90}	55	56	53
LAeq (see note 6)	56	56	55

Night Time Maximum Noise Levels			(see note 7)
L_{Max} (Range)	75	to	88
L_{Max} - L_{eq} (Range)	18	to	26

NSW Road Noise Policy (1m from facade)		
Descriptor	Day	Night[5]
	7am-10pm	10pm-7am
$L_{eq\ 15\ hr}$ and $L_{eq\ 9\ hr}$	59	57
$L_{eq\ 1hr}$ upper 10 percentile	60	58
$L_{eq\ 1hr}$ lower 10 percentile	58	55

Notes:

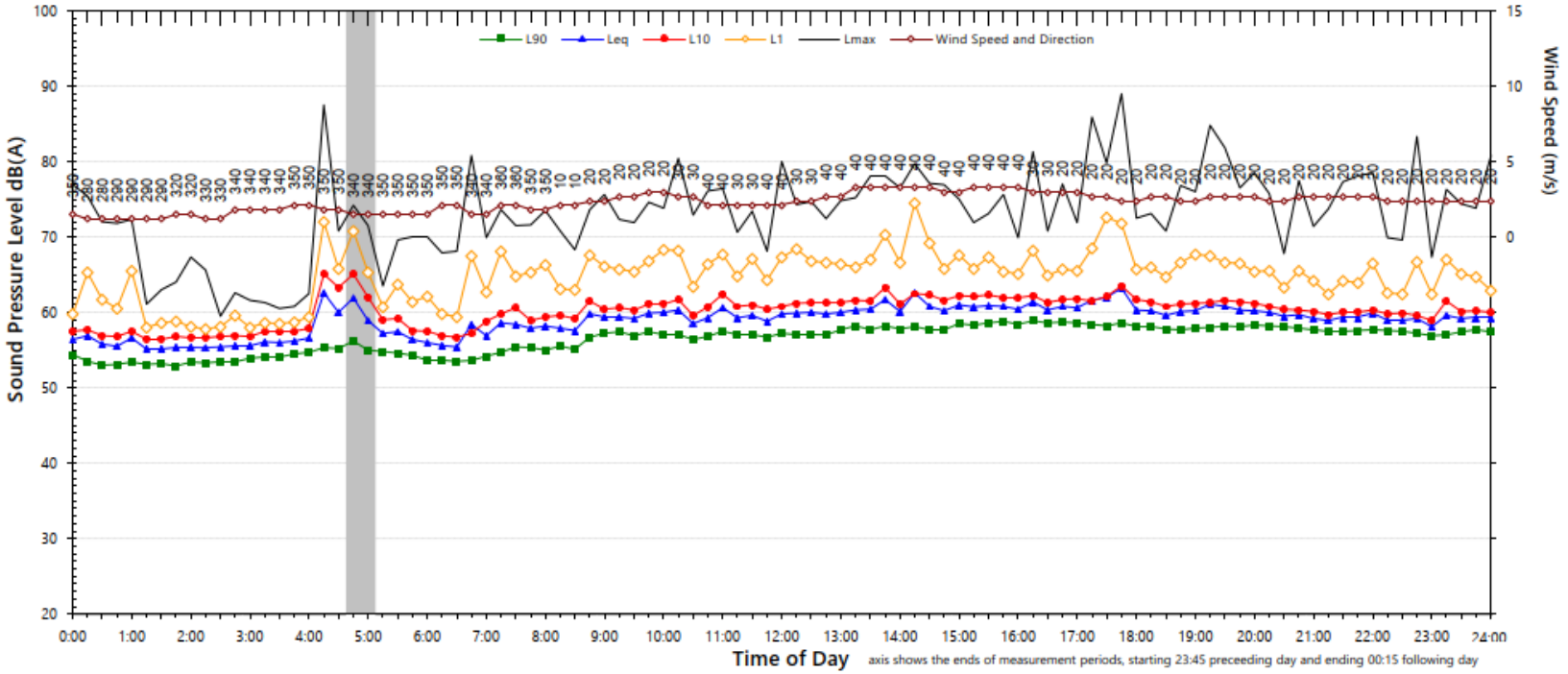
1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Day" is the period from 8am till 6pm on Sundays and 7am til 6pm on other days
3. "Evening" is the period from 6pm till 10pm
4. "Night" relates to the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

Data File: 2020-09-10_SLM_000_123_Rpt_Report.txt TL633-01L01 South Steyne RTA6-005 (r1) QTE-26 Logger Graphs Program (r33)

Unattended Noise Monitoring Results

22 South Steyne, Manly

Saturday, 12 September 2020



NSW Noise Policy for Industry (Free Field)			
Descriptor	Day[2]	Evening[3]	Night[4 5]
L_{90}	55	58	55
LAeq (see note 6)	58	57	56

Night Time Maximum Noise Levels			(see note 7)
L_{Max} (Range)	75	to	84
L_{Max} - L_{eq} (Range)	17	to	25

NSW Road Noise Policy (1m from facade)		
Descriptor	Day	Night[5]
	7am-10pm	10pm-7am
$L_{eq\ 15\ hr}$ and $L_{eq\ 9\ hr}$	60	58
$L_{eq\ 1hr}$ upper 10 percentile	61	59
$L_{eq\ 1hr}$ lower 10 percentile	59	57

Notes:

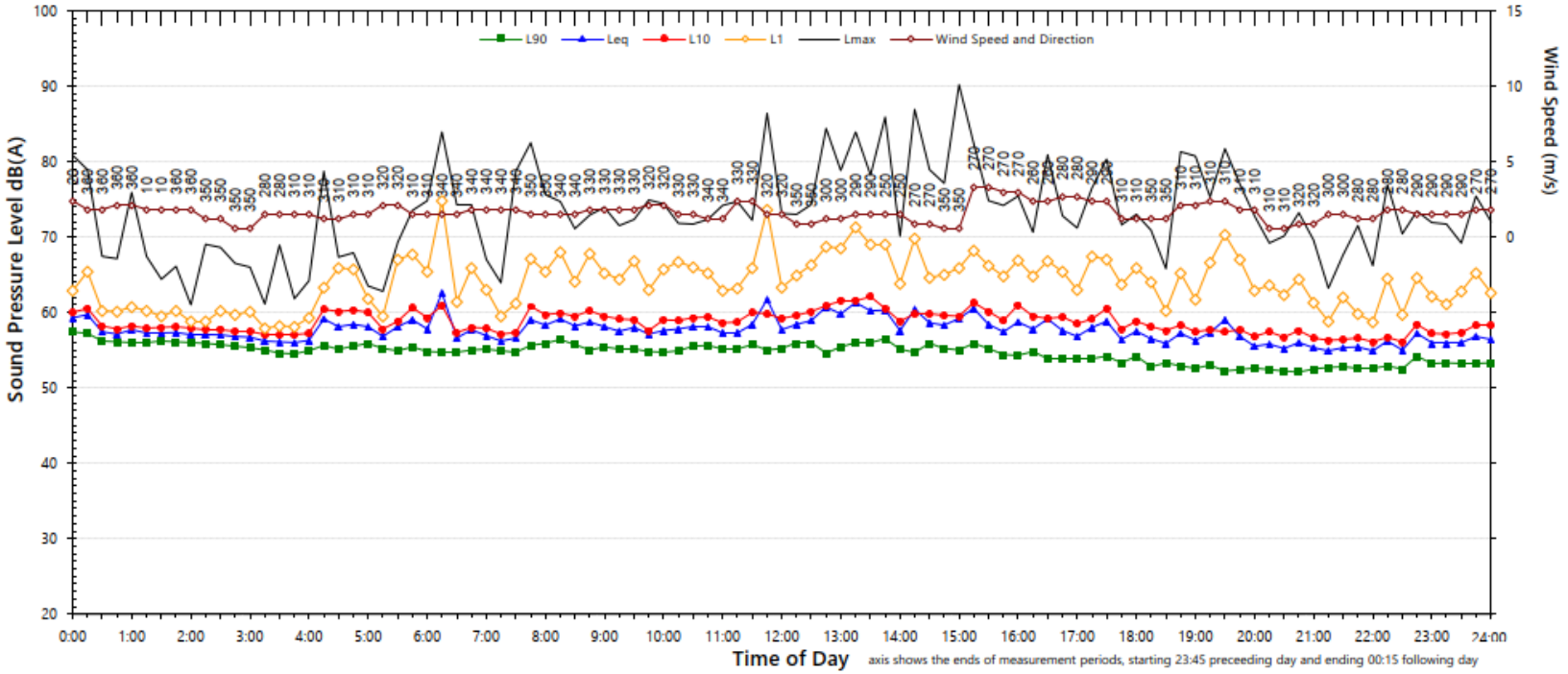
1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Day" is the period from 8am till 6pm on Sundays and 7am til 6pm on other days
3. "Evening" is the period from 6pm till 10pm
4. "Night" relates to the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

Data File: 2020-09-10_SLM_000_123_Rpt_Report.txt TL633-01L01 South Steyne RTA6-005 (r1) QTE-26 Logger Graphs Program (r33)

Unattended Noise Monitoring Results

22 South Steyne, Manly

Sunday, 13 September 2020



NSW Noise Policy for Industry (Free Field)			
Descriptor	Day[2]	Evening[3]	Night[4 5]
L_{90}	54	52	51
LAeq (see note 6)	56	54	53

Night Time Maximum Noise Levels			(see note 7)
L_{Max} (Range)	68	to	82
L_{Max} - L_{eq} (Range)	15	to	22

NSW Road Noise Policy (1m from facade)		
Descriptor	Day	Night[5]
	7am-10pm	10pm-7am
$L_{eq\ 15\ hr}$ and $L_{eq\ 9\ hr}$	58	56
$L_{eq\ 1hr}$ upper 10 percentile	59	57
$L_{eq\ 1hr}$ lower 10 percentile	56	53

Notes:

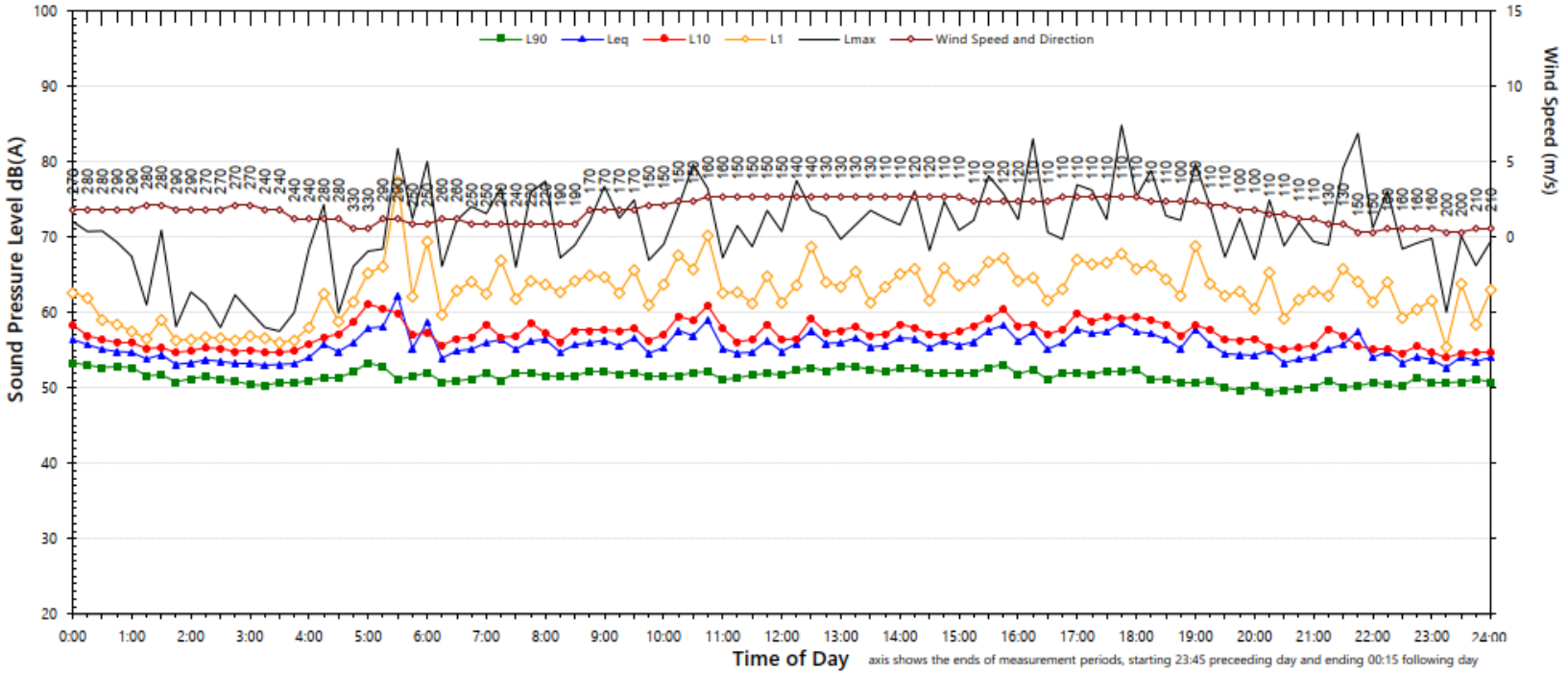
1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Day" is the period from 8am till 6pm on Sundays and 7am til 6pm on other days
3. "Evening" is the period from 6pm till 10pm
4. "Night" relates to the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

Data File: 2020-09-10_SLM_000_123_Rpt_Report.txt TL633-01L01 South Steyne RTA6-005 (r1) QTE-26 Logger Graphs Program (r33)

Unattended Noise Monitoring Results

22 South Steyne, Manly

Monday, 14 September 2020



NSW Noise Policy for Industry (Free Field)			
Descriptor	Day[2]	Evening[3]	Night[4 5]
L_{90}	52	50	50
LAeq (see note 6)	54	53	53

Night Time Maximum Noise Levels			(see note 7)
L_{Max} (Range)	68	to	86
L_{Max} - L_{eq} (Range)	15	to	23

NSW Road Noise Policy (1m from facade)		
Descriptor	Day	Night[5]
	7am-10pm	10pm-7am
$L_{eq\ 15\ hr}$ and $L_{eq\ 9\ hr}$	56	56
$L_{eq\ 1hr}$ upper 10 percentile	57	58
$L_{eq\ 1hr}$ lower 10 percentile	55	52

Notes:

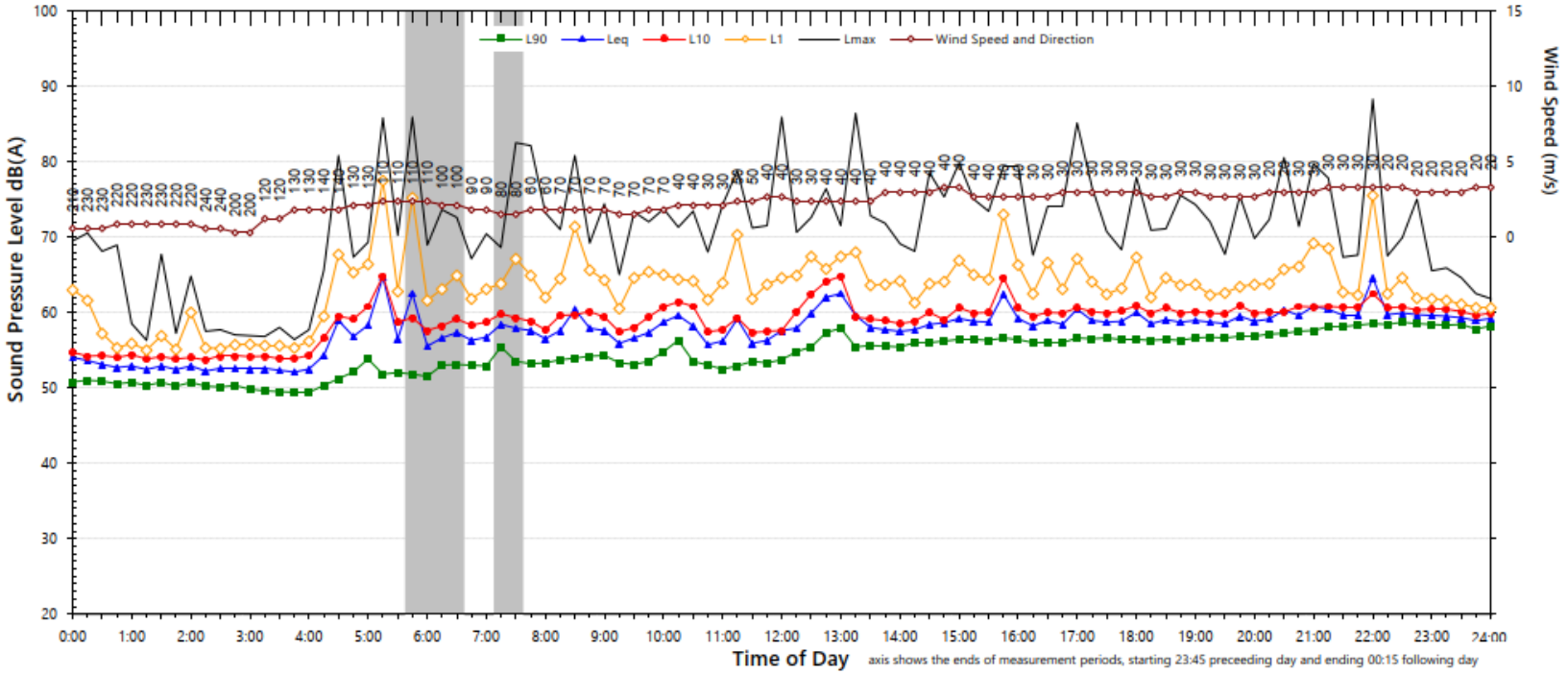
1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Day" is the period from 8am till 6pm on Sundays and 7am til 6pm on other days
3. "Evening" is the period from 6pm till 10pm
4. "Night" relates to the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

Data File: 2020-09-10_SLM_000_123_Rpt_Report.txt TL633-01L01 South Steyne RTA6-005 (r1) QTE-26 Logger Graphs Program (r33)

Unattended Noise Monitoring Results

22 South Steyne, Manly

Tuesday, 15 September 2020



NSW Noise Policy for Industry (Free Field)			
Descriptor	Day[2]	Evening[3]	Night[4 5]
L_{90}	53	56	56
LAeq (see note 6)	56	57	56

Night Time Maximum Noise Levels			(see note 7)
L_{Max} (Range)	75	to	83
L_{Max} - L_{eq} (Range)	15	to	23

NSW Road Noise Policy (1m from facade)		
Descriptor	Day	Night[5]
	7am-10pm	10pm-7am
$L_{eq\ 15\ hr}$ and $L_{eq\ 9\ hr}$	59	59
$L_{eq\ 1hr}$ upper 10 percentile	61	60
$L_{eq\ 1hr}$ lower 10 percentile	57	57

Notes:

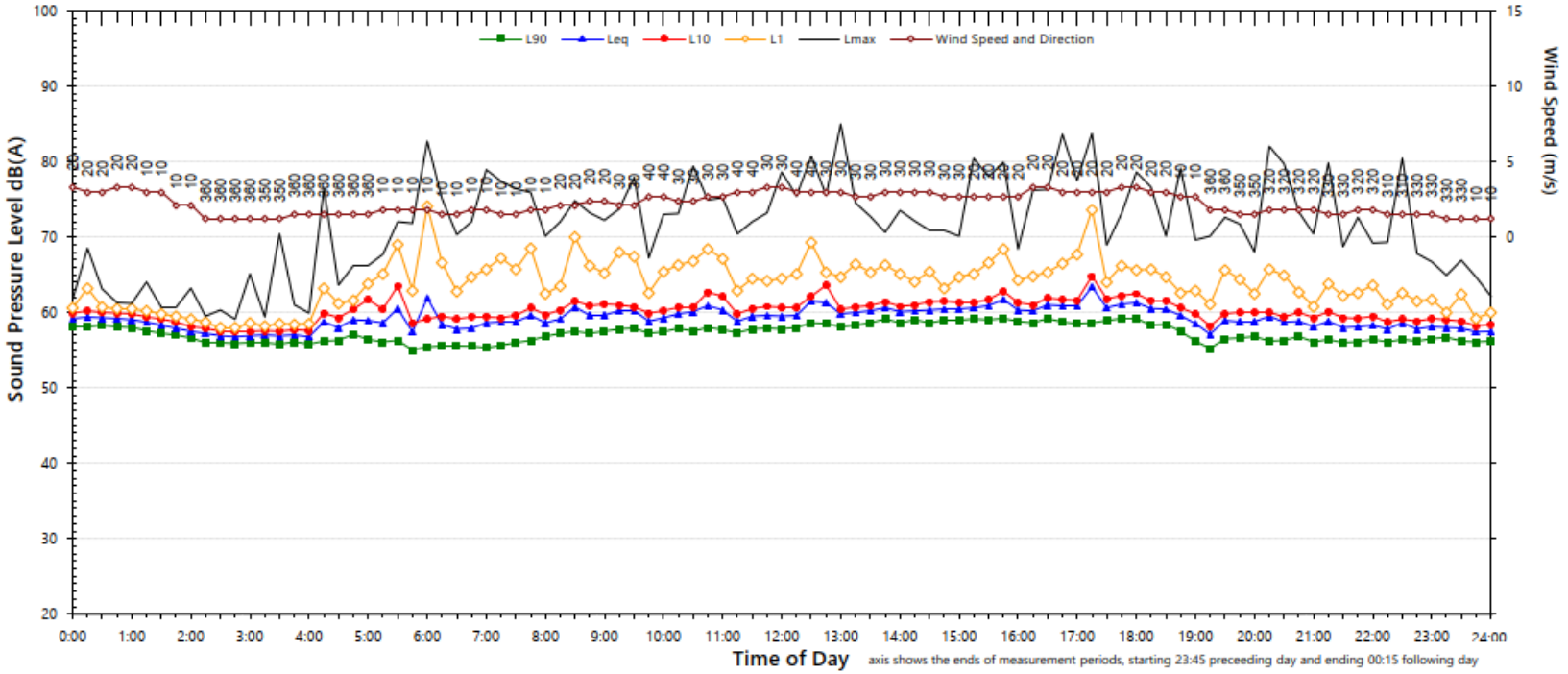
1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Day" is the period from 8am till 6pm on Sundays and 7am til 6pm on other days
3. "Evening" is the period from 6pm till 10pm
4. "Night" relates to the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

Data File: 2020-09-10_SLM_000_123_Rpt_Report.txt TL633-01L01 South Steyne RTA6-005 (r1) QTE-26 Logger Graphs Program (r33)

Unattended Noise Monitoring Results

22 South Steyne, Manly

Wednesday, 16 September 2020



NSW Noise Policy for Industry (Free Field)			
Descriptor	Day[2]	Evening[3]	Night[4 5]
L_{90}	57	56	56
LAeq (see note 6)	58	56	56

Night Time Maximum Noise Levels			(see note 7)
L_{Max} (Range)	76	to	85
L_{Max} - L_{eq} (Range)	19	to	26

NSW Road Noise Policy (1m from facade)		
Descriptor	Day	Night[5]
	7am-10pm	10pm-7am
$L_{eq\ 15\ hr}$ and $L_{eq\ 9\ hr}$	60	59
$L_{eq\ 1hr}$ upper 10 percentile	61	60
$L_{eq\ 1hr}$ lower 10 percentile	59	57

Notes:

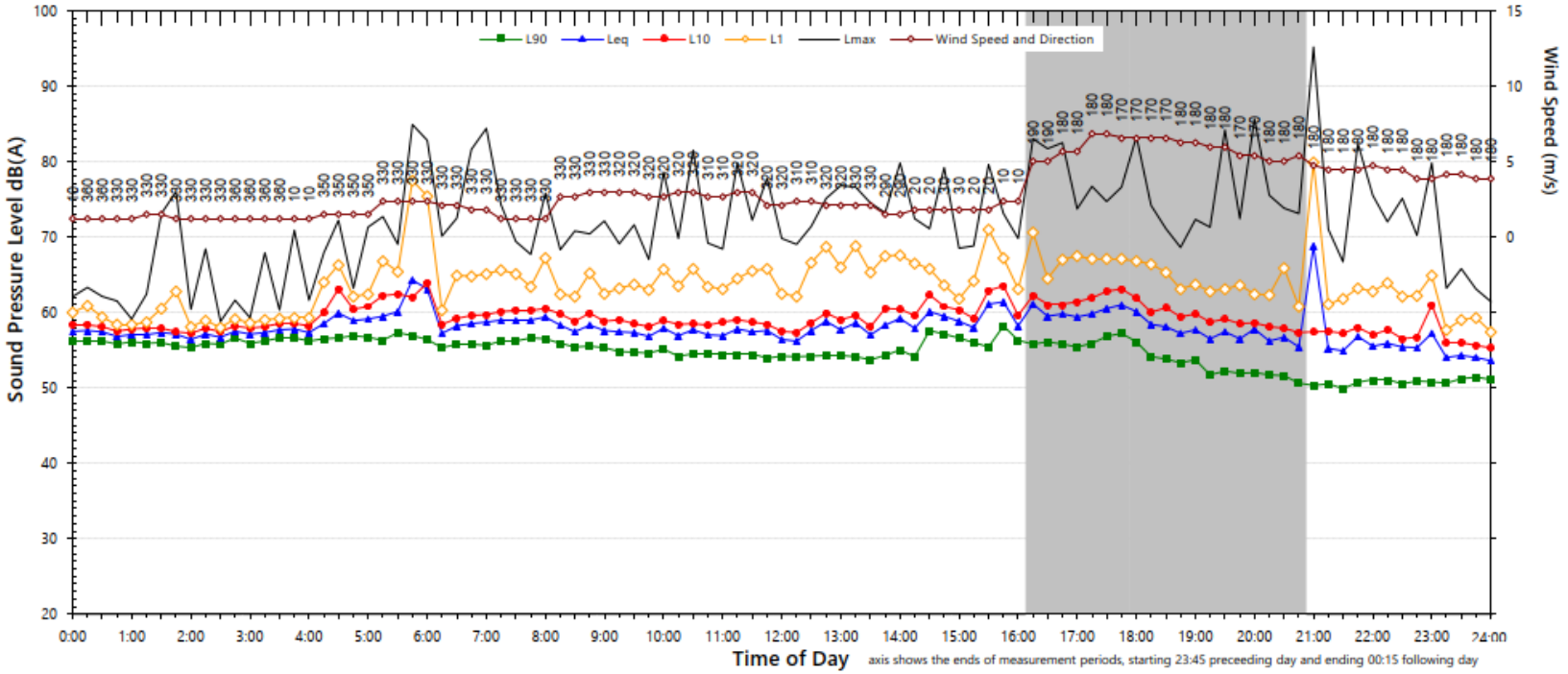
1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Day" is the period from 8am till 6pm on Sundays and 7am til 6pm on other days
3. "Evening" is the period from 6pm till 10pm
4. "Night" relates to the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

Data File: 2020-09-10_SLM_000_123_Rpt_Report.txt TL633-01L01 South Steyne RTA6-005 (r1) QTE-26 Logger Graphs Program (r33)

Unattended Noise Monitoring Results

22 South Steyne, Manly

Thursday, 17 September 2020



NSW Noise Policy for Industry (Free Field)			
Descriptor	Day[2]	Evening[3]	Night[4 5]
L_{90}	54	-	51
LAeq (see note 6)	56	-	54

Night Time Maximum Noise Levels			(see note 7)
L_{Max} (Range)	71	to	86
L_{Max} - L_{eq} (Range)	17	to	24

NSW Road Noise Policy (1m from facade)		
Descriptor	Day	Night[5]
	7am-10pm	10pm-7am
$L_{eq\ 15\ hr}$ and $L_{eq\ 9\ hr}$	59	57
$L_{eq\ 1hr}$ upper 10 percentile	60	57
$L_{eq\ 1hr}$ lower 10 percentile	57	54

Notes:

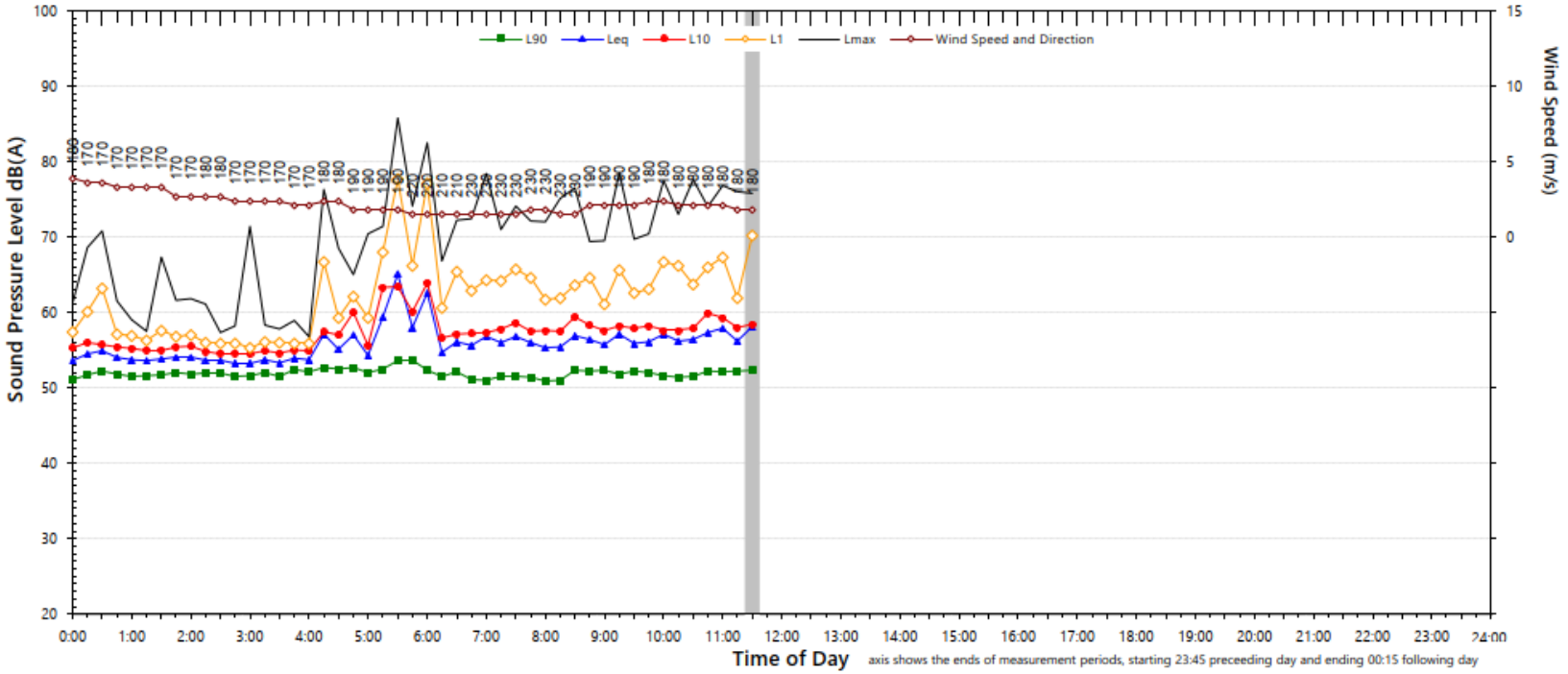
1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Day" is the period from 8am till 6pm on Sundays and 7am til 6pm on other days
3. "Evening" is the period from 6pm till 10pm
4. "Night" relates to the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

Data File: 2020-09-10_SLM_000_123_Rpt_Report.txt TL633-01L01 South Steyne RTA6-005 (r1) QTE-26 Logger Graphs Program (r33)

Unattended Noise Monitoring Results

22 South Steyne, Manly

Friday, 18 September 2020



NSW Noise Policy for Industry (Free Field)			
Descriptor	Day[2]	Evening[3]	Night[4 5]
L_{90}	-	-	-
LAeq (see note 6)	-	-	-

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

NSW Road Noise Policy (1m from facade)		
Descriptor	Day	Night[5]
	7am-10pm	10pm-7am
$L_{eq\ 15\ hr}$ and $L_{eq\ 9\ hr}$	56	-
$L_{eq\ 1hr}$ upper 10 percentile	57	-
$L_{eq\ 1hr}$ lower 10 percentile	56	-

Notes:

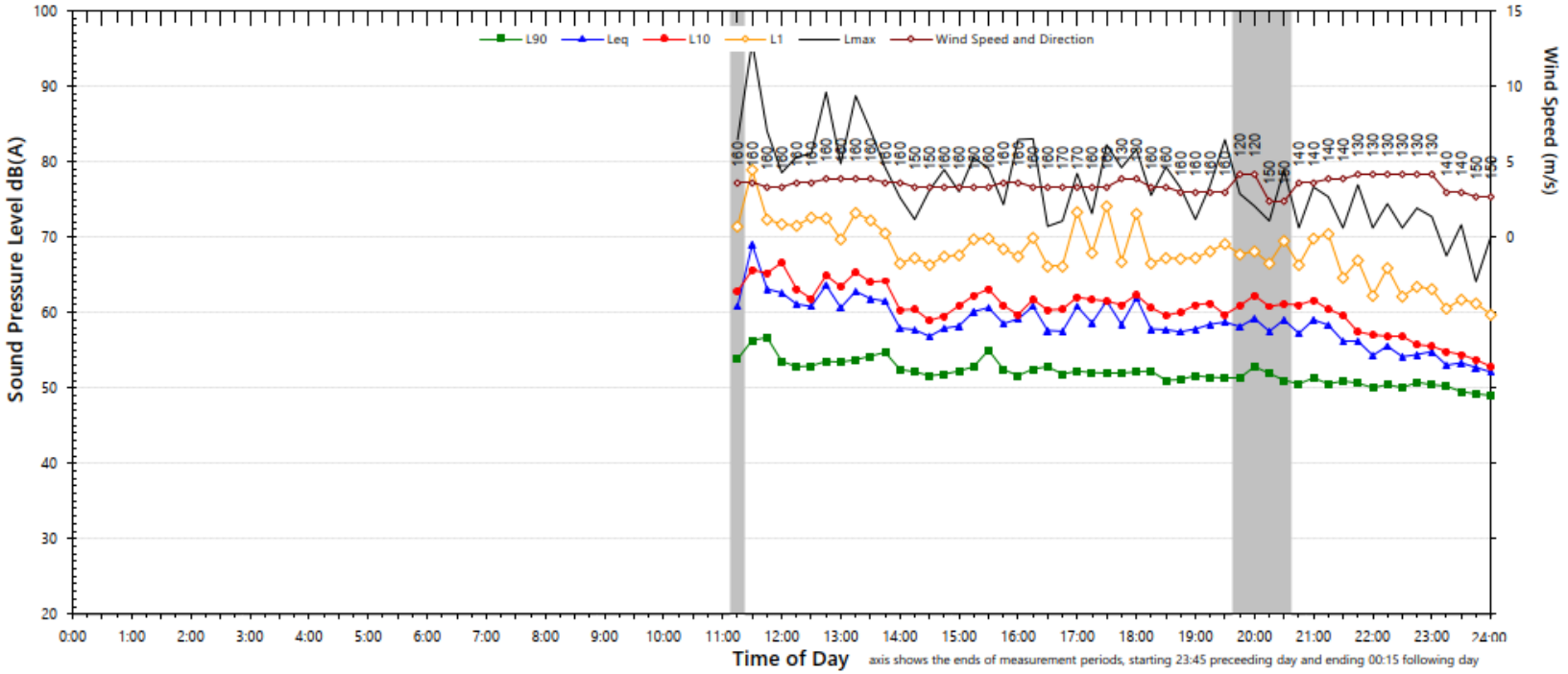
1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Day" is the period from 8am till 6pm on Sundays and 7am til 6pm on other days
3. "Evening" is the period from 6pm till 10pm
4. "Night" relates to the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

Data File: 2020-09-10_SLM_000_123_Rpt_Report.txt TL633-01L01 South Steyne RTA6-005 (r1) QTE-26 Logger Graphs Program (r33)

Unattended Noise Monitoring Results

22 Wentworth Street, Manly (Drummond House)

Thursday, 10 September 2020



NSW Noise Policy for Industry (Free Field)			
Descriptor	Day[2]	Evening[3]	Night[4 5]
L_{90}	-	-	49
LAeq	-	-	55

Night Time Maximum Noise Levels			(see note 7)
L_{Max} (Range)	68	to	84
L_{Max} - L_{eq} (Range)	17	to	25

NSW Road Noise Policy (1m from facade)		(see note 6)
Descriptor	Day	Night[5]
	7am-10pm	10pm-7am
$L_{eq\ 15\ hr}$ and $L_{eq\ 9\ hr}$	63	58
$L_{eq\ 1hr}$ upper 10 percentile	64	62
$L_{eq\ 1hr}$ lower 10 percentile	60	54

Notes:

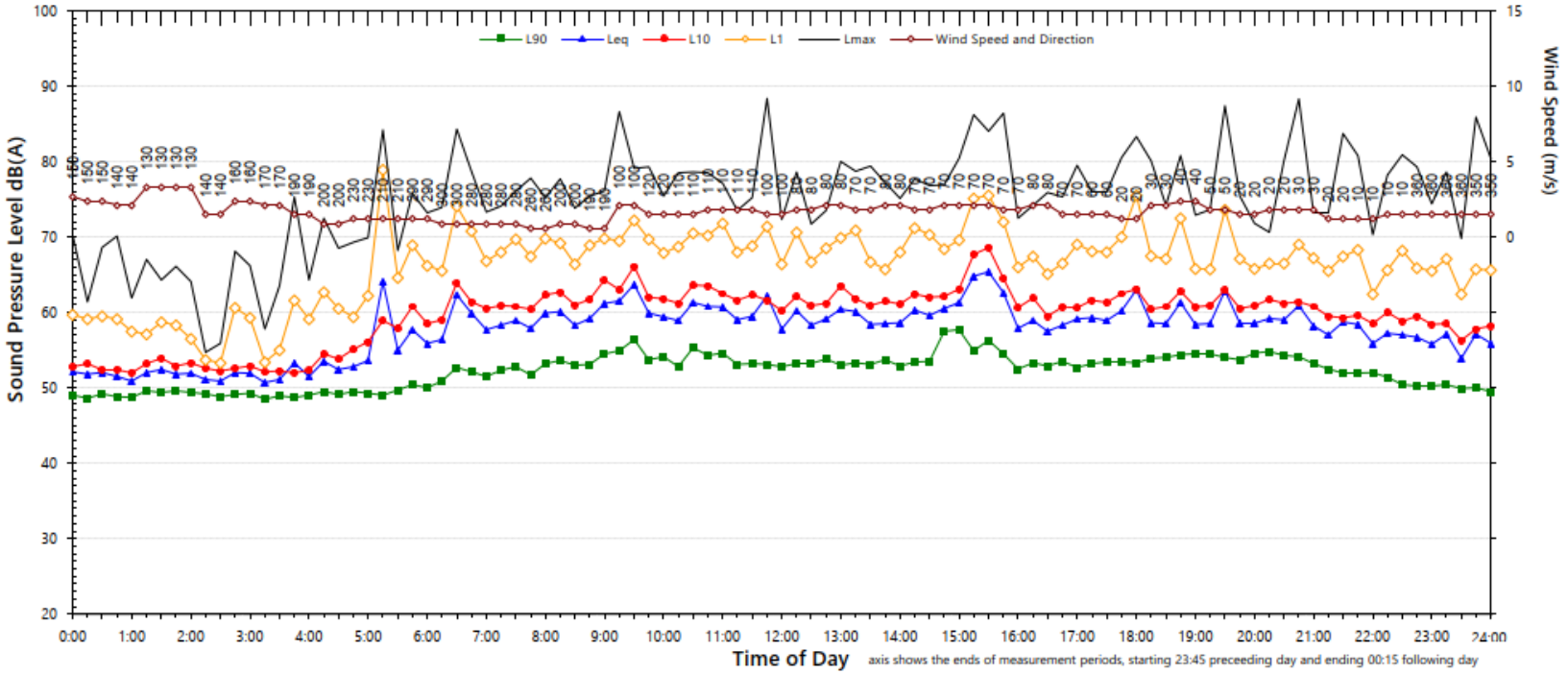
1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Day" is the period from 8am till 6pm on Sundays and 7am til 6pm on other days
3. "Evening" is the period from 6pm till 10pm
4. "Night" relates to the 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. Night time L_{Max} values are shown only where L_{Max} >65dB(A) and where L_{Max} - Leq ≥15dB(A)

Data File: 2020-09-10_SLM_000_123_Rpt_Report.txt TL633-01L02 Wenthworth St RTA06-011 (r0) QTE-26 Logger Graphs Program (r33)

Unattended Noise Monitoring Results

22 Wentworth Street, Manly (Drummond House)

Friday, 11 September 2020



NSW Noise Policy for Industry (Free Field)			
Descriptor	Day[2]	Evening[3]	Night[4 5]
L_{90}	53	52	48
LAeq	60	59	56

Night Time Maximum Noise Levels			(see note 7)
L_{Max} (Range)	67	to	88
L_{Max} - L_{eq} (Range)	16	to	30

NSW Road Noise Policy (1m from facade)		(see note 6)
Descriptor	Day	Night[5]
	7am-10pm	10pm-7am
$L_{eq\ 15\ hr}$ and $L_{eq\ 9\ hr}$	63	59
$L_{eq\ 1hr}$ upper 10 percentile	64	60
$L_{eq\ 1hr}$ lower 10 percentile	61	54

Notes:

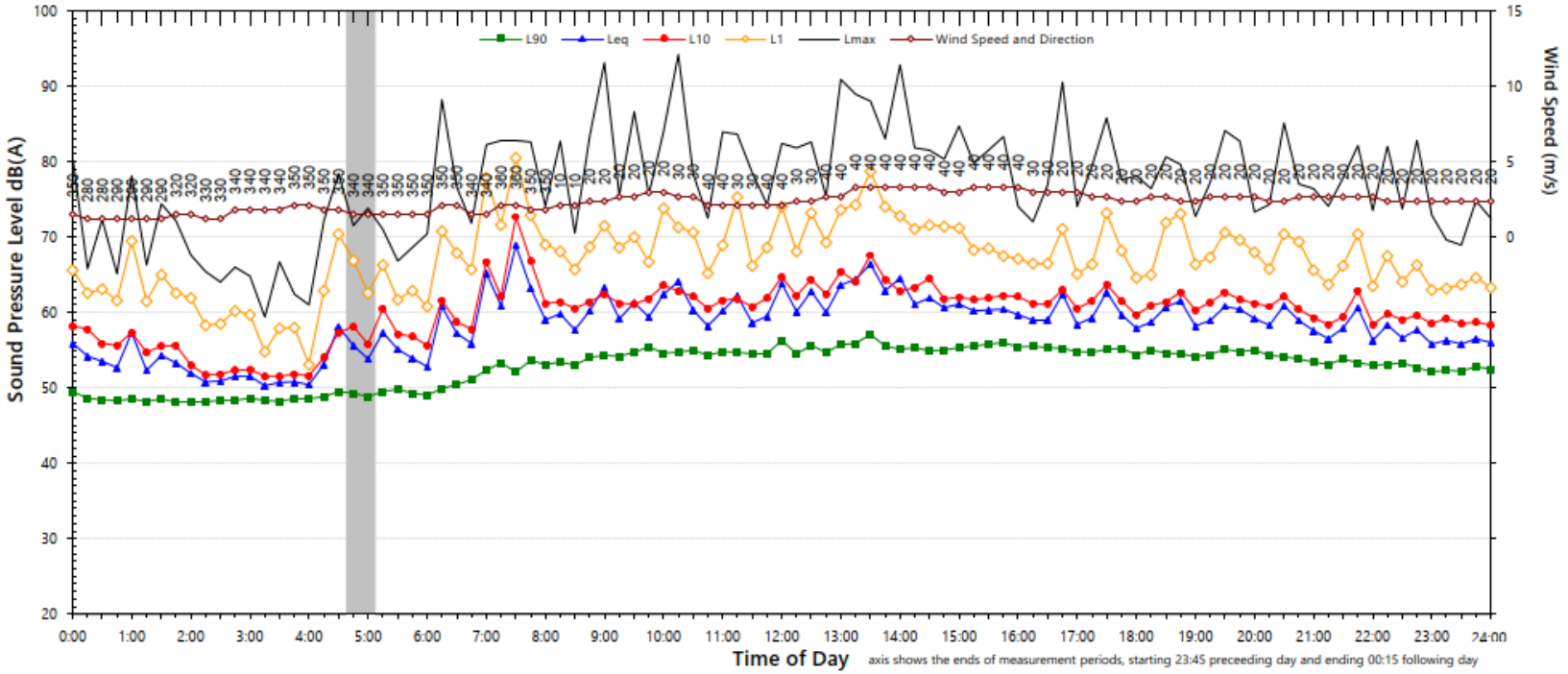
1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Day" is the period from 8am till 6pm on Sundays and 7am til 6pm on other days
3. "Evening" is the period from 6pm till 10pm
4. "Night" relates to the 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. Night time L_{Max} values are shown only where L_{Max} >65dB(A) and where L_{Max} - Leq ≥15dB(A)

Data File: 2020-09-10_SLM_000_123_Rpt_Report.txt TL633-01L02 Wenthworth St RTA06-011 (r0) QTE-26 Logger Graphs Program (r33)

Unattended Noise Monitoring Results

22 Wentworth Street, Manly (Drummond House)

Saturday, 12 September 2020



NSW Noise Policy for Industry (Free Field)			
Descriptor	Day[2]	Evening[3]	Night[4 5]
L_{90}	53	53	50
LAeq	62	59	57

Night Time Maximum Noise Levels			(see note 7)
L_{Max} (Range)	71	to	86
L_{Max} - L_{eq} (Range)	17	to	26

NSW Road Noise Policy (1m from facade)		(see note 6)
Descriptor	Day	Night[5]
	7am-10pm	10pm-7am
$L_{eq\ 15\ hr}$ and $L_{eq\ 9\ hr}$	64	60
$L_{eq\ 1hr}$ upper 10 percentile	66	61
$L_{eq\ 1hr}$ lower 10 percentile	62	56

Notes:

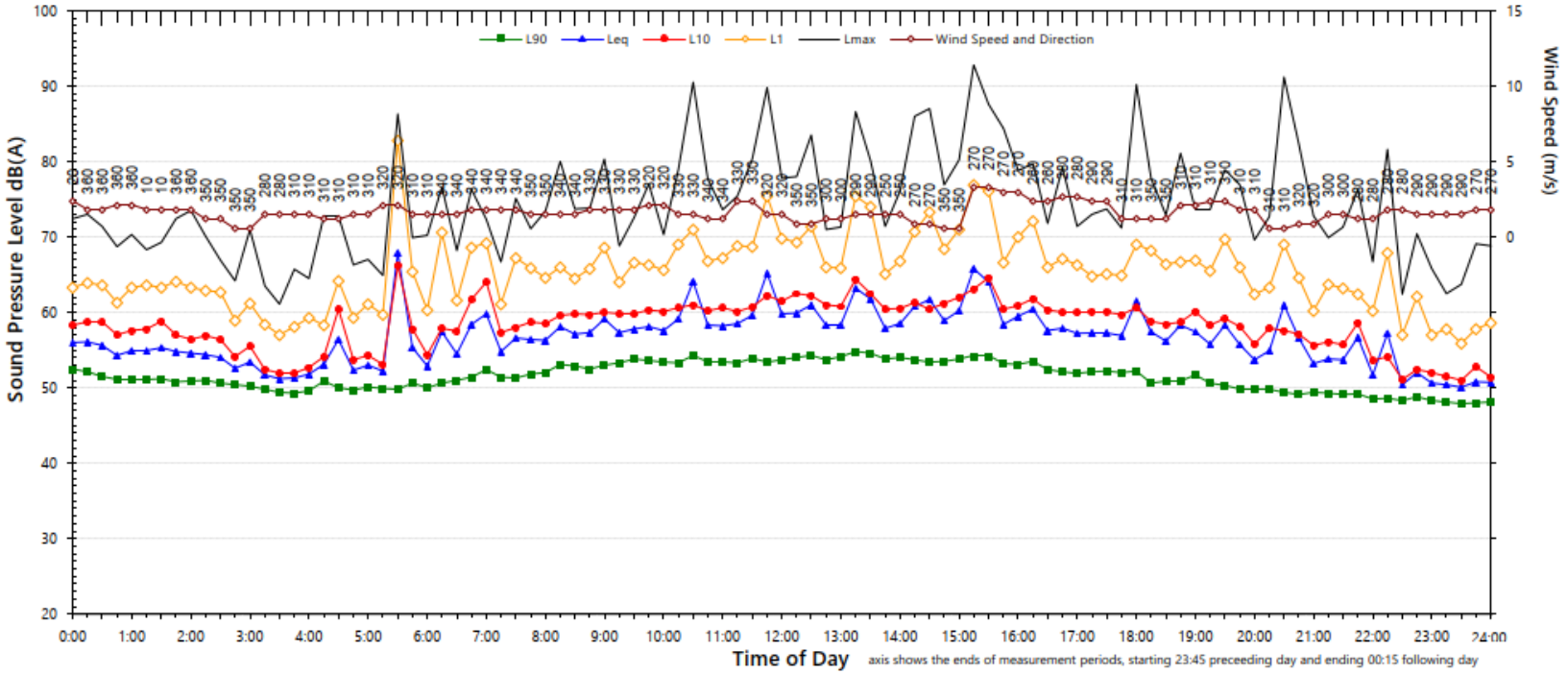
1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Day" is the period from 8am till 6pm on Sundays and 7am til 6pm on other days
3. "Evening" is the period from 6pm till 10pm
4. "Night" relates to the 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. Night time L_{Max} values are shown only where L_{Max} >65dB(A) and where L_{Max} - Leq ≥15dB(A)

Data File: 2020-09-10_SLM_000_123_Rpt_Report.txt TL633-01L02 Wenthworth St RTA06-011 (r0) QTE-26 Logger Graphs Program (r33)

Unattended Noise Monitoring Results

22 Wentworth Street, Manly (Drummond House)

Sunday, 13 September 2020



NSW Noise Policy for Industry (Free Field)			
Descriptor	Day[2]	Evening[3]	Night[4 5]
L_{90}	52	49	46
LAeq	60	57	55

Night Time Maximum Noise Levels			(see note 7)
L_{Max} (Range)	67	to	85
L_{Max} - L_{eq} (Range)	17	to	28

NSW Road Noise Policy (1m from facade)		(see note 6)
Descriptor	Day	Night[5]
	7am-10pm	10pm-7am
$L_{eq\ 15\ hr}$ and $L_{eq\ 9\ hr}$	62	57
$L_{eq\ 1hr}$ upper 10 percentile	64	61
$L_{eq\ 1hr}$ lower 10 percentile	59	51

Notes:

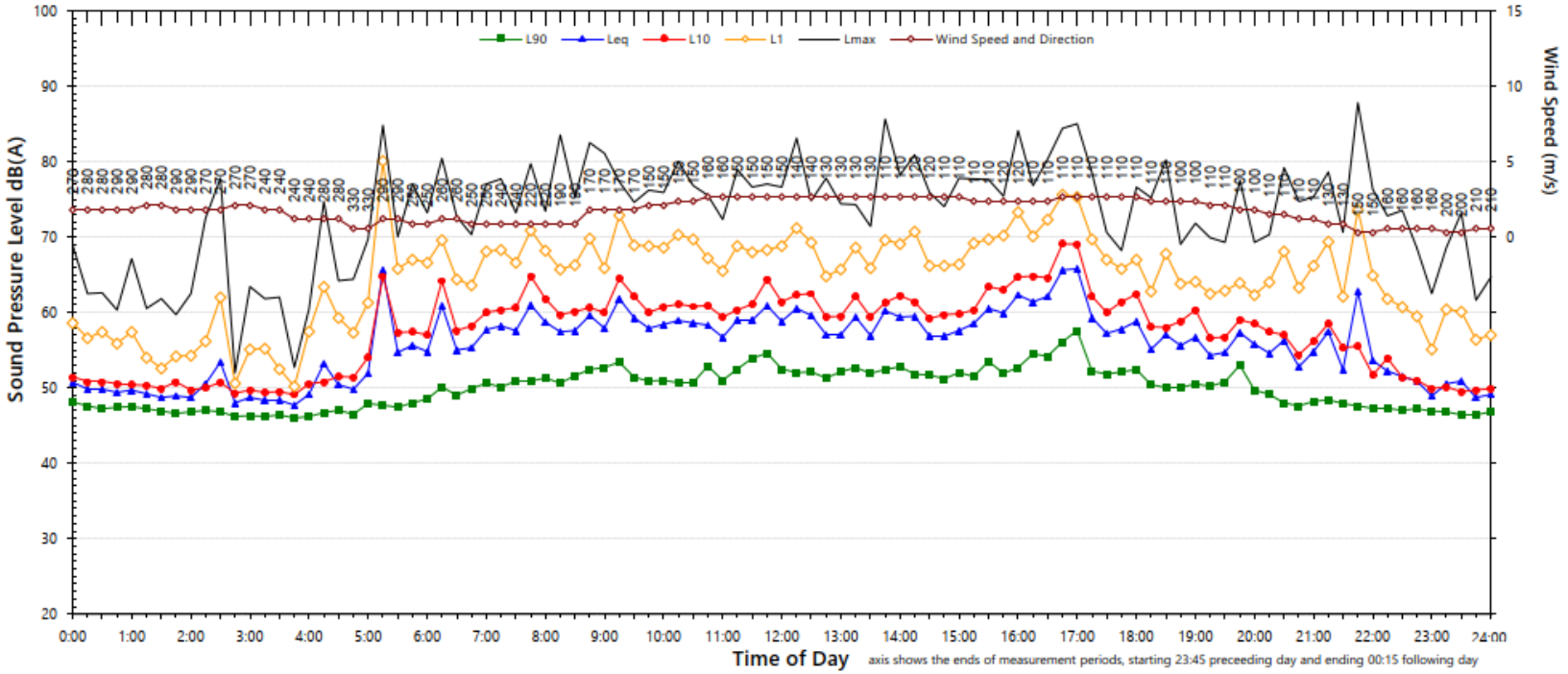
1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Day" is the period from 8am till 6pm on Sundays and 7am til 6pm on other days
3. "Evening" is the period from 6pm till 10pm
4. "Night" relates to the 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. Night time L_{Max} values are shown only where L_{Max} >65dB(A) and where L_{Max} - Leq ≥15dB(A)

Data File: 2020-09-10_SLM_000_123_Rpt_Report.txt TL633-01L02 Wenthworth St RTA06-011 (r0) QTE-26 Logger Graphs Program (r33)

Unattended Noise Monitoring Results

22 Wentworth Street, Manly (Drummond House)

Monday, 14 September 2020



NSW Noise Policy for Industry (Free Field)			
Descriptor	Day[2]	Evening[3]	Night[4 5]
L_{90}	51	48	46
LAeq	60	57	56

Night Time Maximum Noise Levels			(see note 7)
L_{Max} (Range)	69	to	87
L_{Max} - L_{eq} (Range)	16	to	28

NSW Road Noise Policy (1m from facade)		(see note 6)
Descriptor	Day	Night[5]
	7am-10pm	10pm-7am
$L_{eq\ 15\ hr}$ and $L_{eq\ 9\ hr}$	62	59
$L_{eq\ 1hr}$ upper 10 percentile	63	64
$L_{eq\ 1hr}$ lower 10 percentile	58	52

Notes:

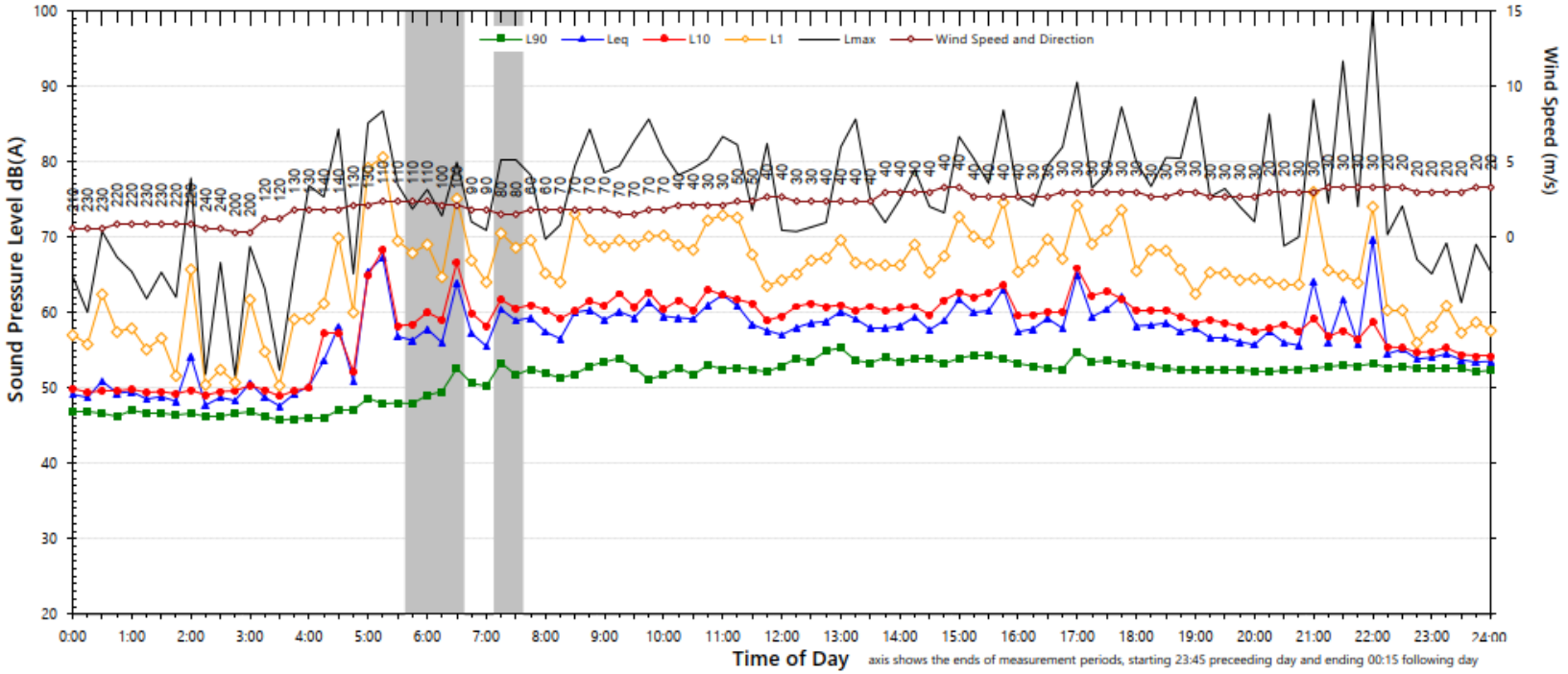
1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Day" is the period from 8am till 6pm on Sundays and 7am til 6pm on other days
3. "Evening" is the period from 6pm till 10pm
4. "Night" relates to the 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. Night time L_{Max} values are shown only where L_{Max} >65dB(A) and where L_{Max} - Leq ≥15dB(A)

Data File: 2020-09-10_SLM_000_123_Rpt_Report.txt TL633-01L02 Wenthworth St RTA06-011 (r0) QTE-26 Logger Graphs Program (r33)

Unattended Noise Monitoring Results

22 Wentworth Street, Manly (Drummond House)

Tuesday, 15 September 2020



NSW Noise Policy for Industry (Free Field)			
Descriptor	Day[2]	Evening[3]	Night[4 5]
L_{90}	52	52	50
LAeq	60	61	57

Night Time Maximum Noise Levels			(see note 7)
L_{Max} (Range)	69	to	88
L_{Max} - L_{eq} (Range)	15	to	30

NSW Road Noise Policy (1m from facade)		(see note 6)
Descriptor	Day	Night[5]
	7am-10pm	10pm-7am
$L_{eq\ 15\ hr}$ and $L_{eq\ 9\ hr}$	63	60
$L_{eq\ 1hr}$ upper 10 percentile	63	63
$L_{eq\ 1hr}$ lower 10 percentile	61	54

Notes:

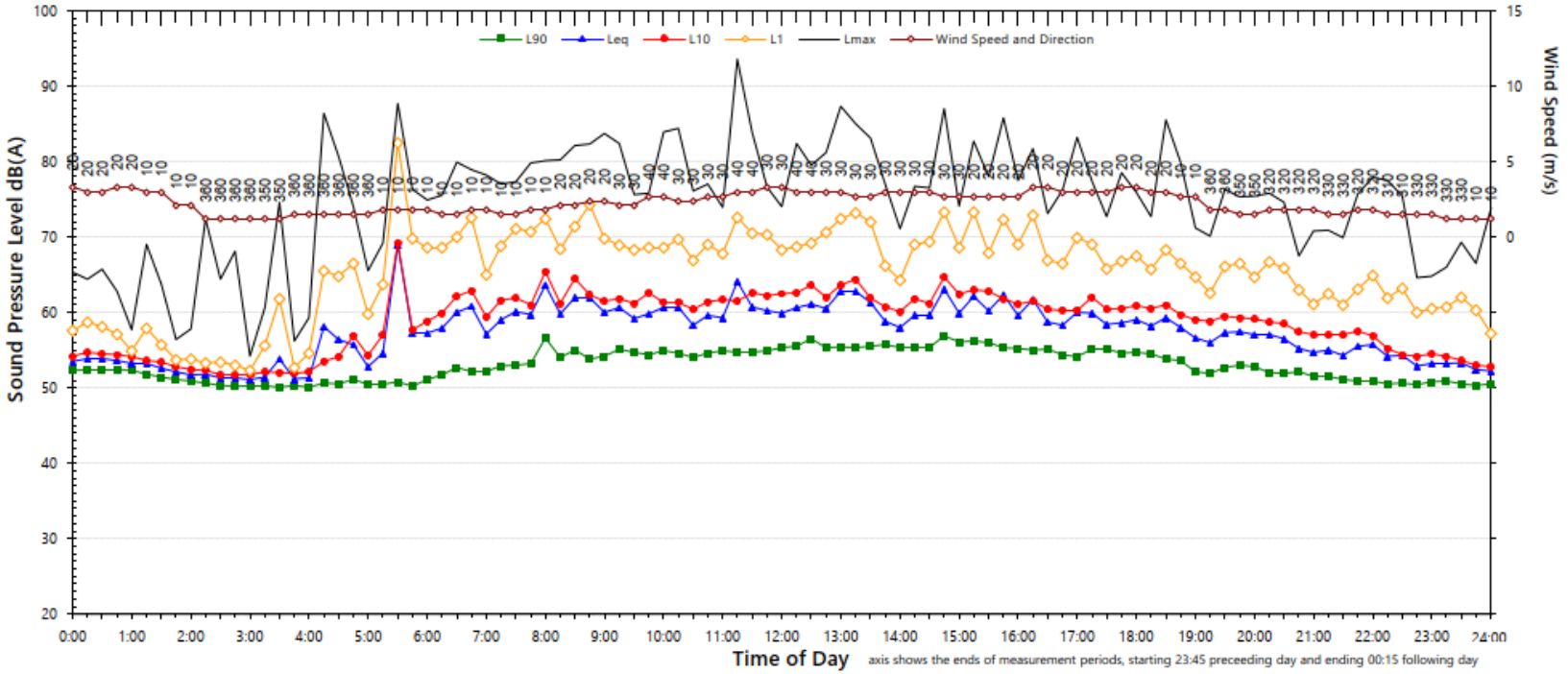
1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Day" is the period from 8am till 6pm on Sundays and 7am til 6pm on other days
3. "Evening" is the period from 6pm till 10pm
4. "Night" relates to the 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. Night time L_{Max} values are shown only where L_{Max} >65dB(A) and where L_{Max} - Leq ≥15dB(A)

Data File: 2020-09-10_SLM_000_123_Rpt_Report.txt TL633-01L02 Wenthworth St RTA06-011 (r0) QTE-26 Logger Graphs Program (r33)

Unattended Noise Monitoring Results

22 Wentworth Street, Manly (Drummond House)

Wednesday, 16 September 2020



NSW Noise Policy for Industry (Free Field)			
Descriptor	Day[2]	Evening[3]	Night[4 5]
L_{90}	54	51	50
LAeq	61	57	56

Night Time Maximum Noise Levels			(see note 7)
L_{Max} (Range)	71	to	87
L_{Max} - L_{eq} (Range)	19	to	32

NSW Road Noise Policy (1m from facade)		(see note 6)
Descriptor	Day	Night[5]
	7am-10pm	10pm-7am
$L_{eq\ 15\ hr}$ and $L_{eq\ 9\ hr}$	62	59
$L_{eq\ 1hr}$ upper 10 percentile	64	61
$L_{eq\ 1hr}$ lower 10 percentile	59	55

Notes:

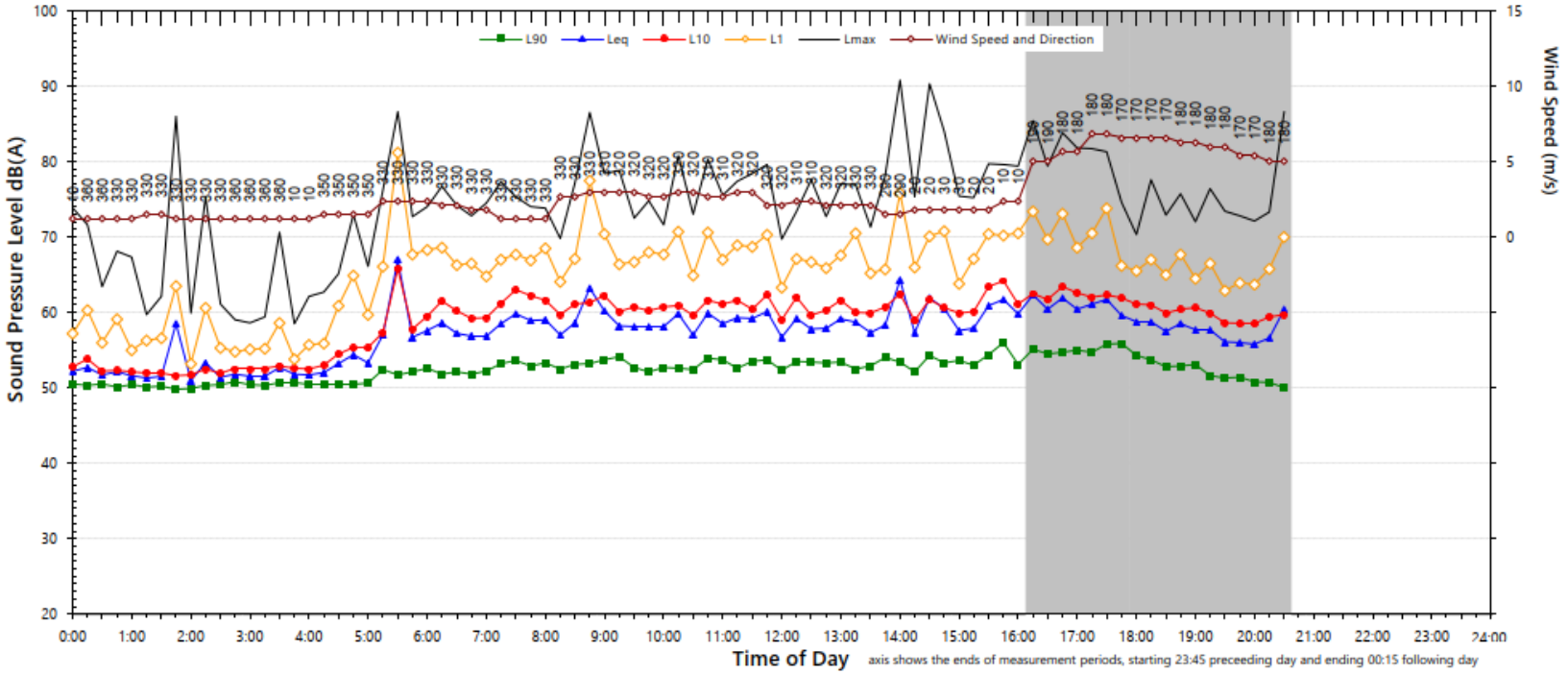
1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Day" is the period from 8am till 6pm on Sundays and 7am til 6pm on other days
3. "Evening" is the period from 6pm till 10pm
4. "Night" relates to the 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. Night time L_{Max} values are shown only where L_{Max} >65dB(A) and where L_{Max} - Leq ≥15dB(A)

Data File: 2020-09-10_SLM_000_123_Rpt_Report.txt TL633-01L02 Wenthworth St RTA06-011 (r0) QTE-26 Logger Graphs Program (r33)

Unattended Noise Monitoring Results

22 Wentworth Street, Manly (Drummond House)

Thursday, 17 September 2020



NSW Noise Policy for Industry (Free Field)			
Descriptor	Day[2]	Evening[3]	Night[4 5]
L_{90}	52	-	-
LAeq	59	-	-

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

NSW Road Noise Policy (1m from facade)		(see note 6)
Descriptor	Day	Night[5]
	7am-10pm	10pm-7am
$L_{eq\ 15\ hr}$ and $L_{eq\ 9\ hr}$	62	-
$L_{eq\ 1hr}$ upper 10 percentile	63	-
$L_{eq\ 1hr}$ lower 10 percentile	61	-

Notes:

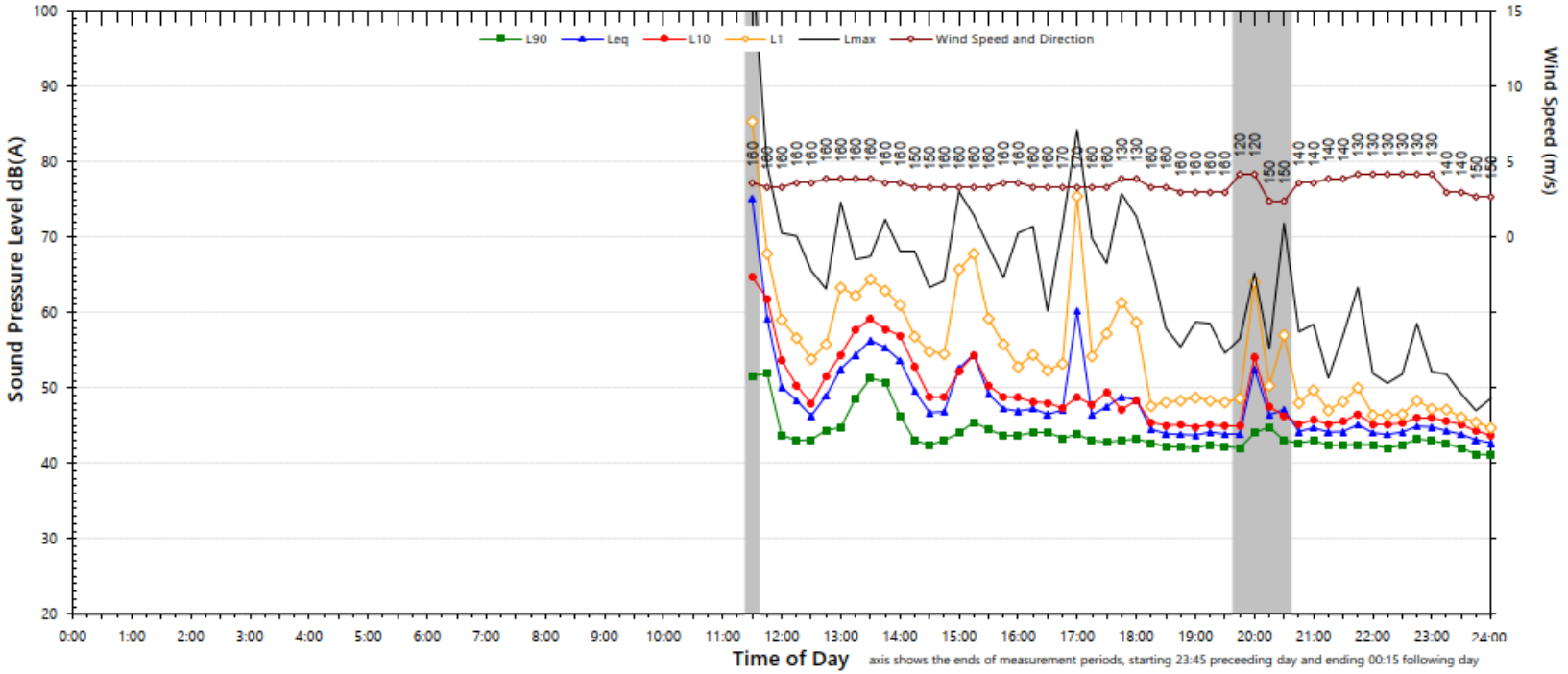
1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Day" is the period from 8am till 6pm on Sundays and 7am til 6pm on other days
3. "Evening" is the period from 6pm till 10pm
4. "Night" relates to the 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. Night time L_{Max} values are shown only where L_{Max} >65dB(A) and where L_{Max} - Leq ≥15dB(A)

Data File: 2020-09-10_SLM_000_123_Rpt_Report.txt TL633-01L02 Wenthworth St RTA06-011 (r0) QTE-26 Logger Graphs Program (r33)

Unattended Noise Monitoring Results

Rear of Drummond House, 22 Wentworth St, Manly

Thursday, 10 September 2020



NSW Noise Policy for Industry (Free Field)			
Descriptor	Day[2]	Evening[3]	Night[4 5]
L_{90}	-	-	40
LAeq (see note 6)	-	-	41

Night Time Maximum Noise Levels			(see note 7)
L_{Max} (Range)	68	to	74
L_{Max} - L_{eq} (Range)	23	to	29

NSW Road Noise Policy (1m from facade)		
Descriptor	Day	Night[5]
	7am-10pm	10pm-7am
$L_{eq\ 15\ hr}$ and $L_{eq\ 9\ hr}$	51	44
$L_{eq\ 1hr}$ upper 10 percentile	55	45
$L_{eq\ 1hr}$ lower 10 percentile	44	42

Notes:

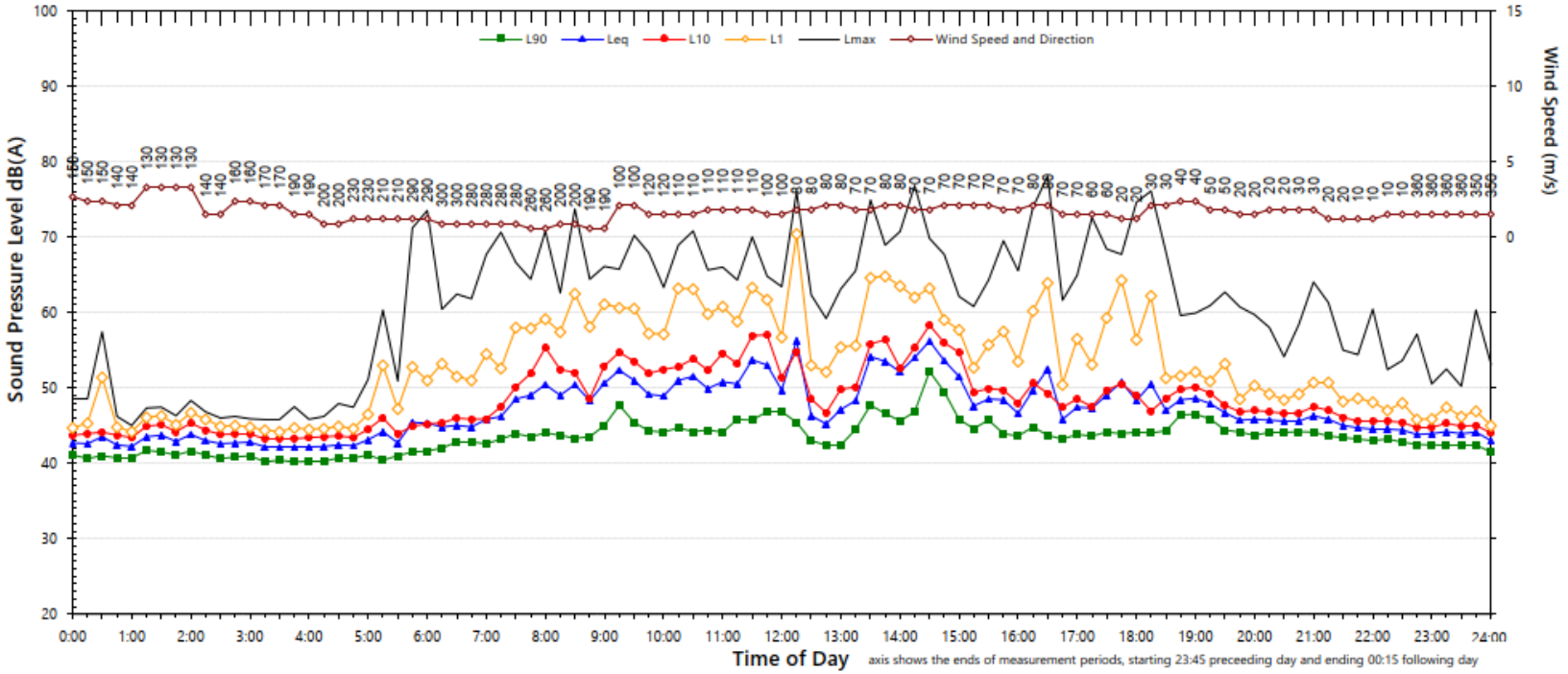
1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Day" is the period from 8am till 6pm on Sundays and 7am til 6pm on other days
3. "Evening" is the period from 6pm till 10pm
4. "Night" relates to the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

Data File: 2020-09-10_SLM_000_123_Rpt_Report.txt TL633-01L03 Rear of Drummond House RTA06-010 (r0) QTE-26 Logger Graphs Program (r33)

Unattended Noise Monitoring Results

Rear of Drummond House, 22 Wentworth St, Manly

Friday, 11 September 2020



NSW Noise Policy for Industry (Free Field)			
Descriptor	Day[2]	Evening[3]	Night[4 5]
L_{90}	43	43	40
LAeq (see note 6)	48	44	41

Night Time Maximum Noise Levels			(see note 7)
L_{Max} (Range)	68	to	73
L_{Max} - L_{eq} (Range)	16	to	28

NSW Road Noise Policy (1m from facade)		
Descriptor	Day	Night[5]
	7am-10pm	10pm-7am
$L_{eq\ 15\ hr}$ and $L_{eq\ 9\ hr}$	50	43
$L_{eq\ 1hr}$ upper 10 percentile	52	45
$L_{eq\ 1hr}$ lower 10 percentile	46	42

Notes:

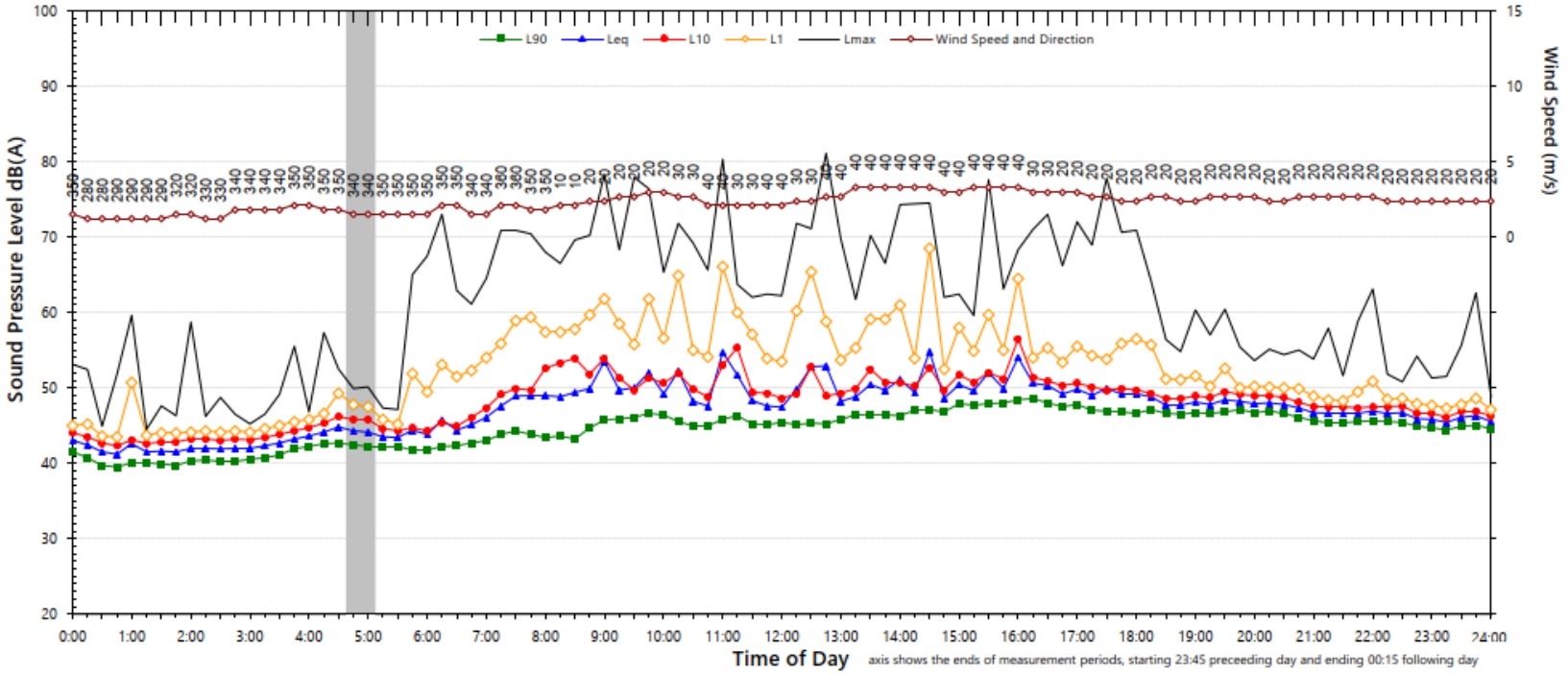
1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Day" is the period from 8am till 6pm on Sundays and 7am til 6pm on other days
3. "Evening" is the period from 6pm till 10pm
4. "Night" relates to the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

Data File: 2020-09-10_SLM_000_123_Rpt_Report.txt TL633-01L03 Rear of Drummond House RTA06-010 (r0) QTE-26 Logger Graphs Program (r33)

Unattended Noise Monitoring Results

Rear of Drummond House, 22 Wentworth St, Manly

Saturday, 12 September 2020



NSW Noise Policy for Industry (Free Field)			
Descriptor	Day[2]	Evening[3]	Night[4 5]
L_{90}	44	45	42
LAeq (see note 6)	48	45	42

Night Time Maximum Noise Levels			(see note 7)
L_{Max} (Range)	66	to	68
L_{Max} - L_{eq} (Range)	17	to	22

NSW Road Noise Policy (1m from facade)		
Descriptor	Day	Night[5]
	7am-10pm	10pm-7am
$L_{eq\ 15\ hr}$ and $L_{eq\ 9\ hr}$	50	45
$L_{eq\ 1hr}$ upper 10 percentile	52	46
$L_{eq\ 1hr}$ lower 10 percentile	48	43

Notes:

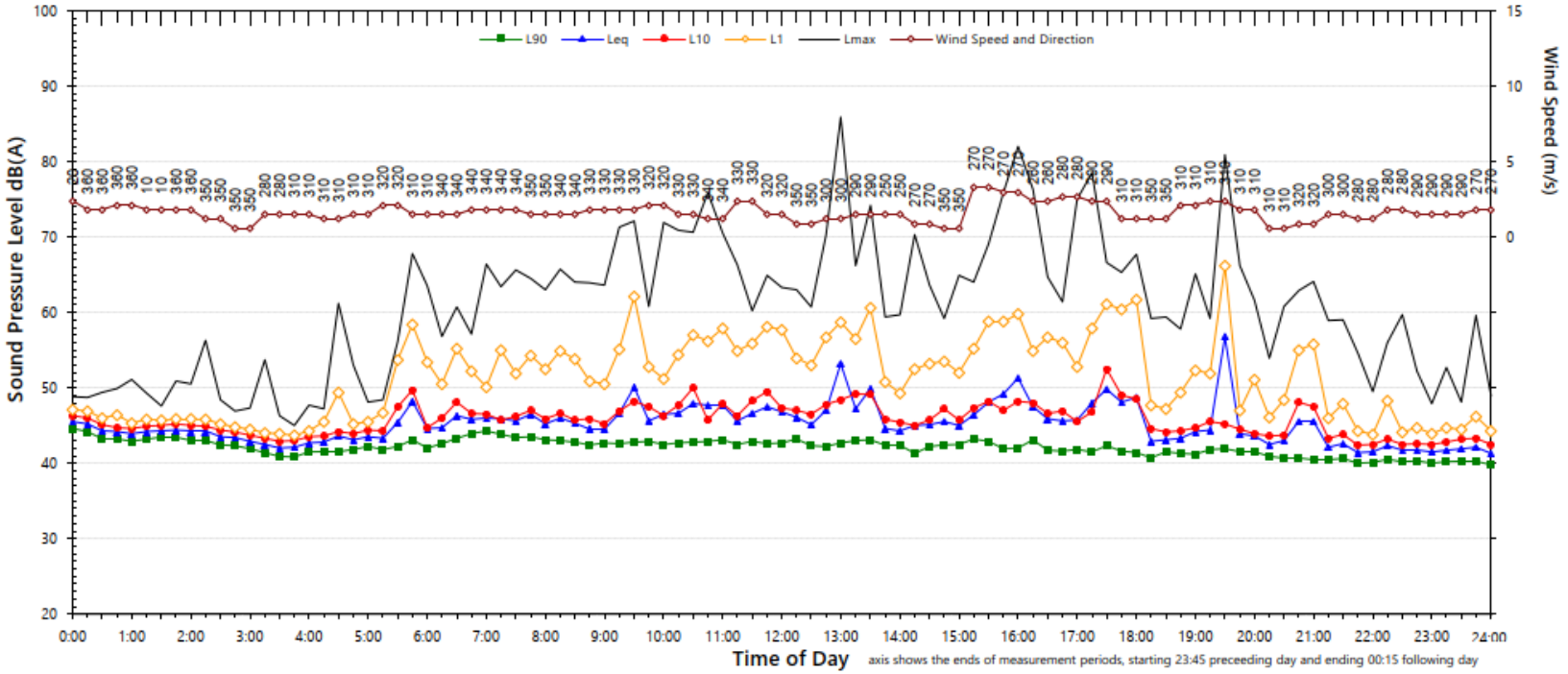
1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Day" is the period from 8am till 6pm on Sundays and 7am til 6pm on other days
3. "Evening" is the period from 6pm till 10pm
4. "Night" relates to the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

Data File: 2020-09-10_SLM_000_123_Rpt_Report.txt TL633-01L03 Rear of Drummond House RTA06-010 (r0) QTE-26 Logger Graphs Program (r33)

Unattended Noise Monitoring Results

Rear of Drummond House, 22 Wentworth St, Manly

Sunday, 13 September 2020



NSW Noise Policy for Industry (Free Field)			
Descriptor	Day[2]	Evening[3]	Night[4 5]
L_{90}	42	40	38
LAeq (see note 6)	45	45	39

Night Time Maximum Noise Levels			(see note 7)
L_{Max} (Range)	71	to	71
L_{Max} - L_{eq} (Range)	16	to	26

NSW Road Noise Policy (1m from facade)		
Descriptor	Day	Night[5]
	7am-10pm	10pm-7am
$L_{eq\ 15\ hr}$ and $L_{eq\ 9\ hr}$	47	42
$L_{eq\ 1hr}$ upper 10 percentile	49	44
$L_{eq\ 1hr}$ lower 10 percentile	44	40

Notes:

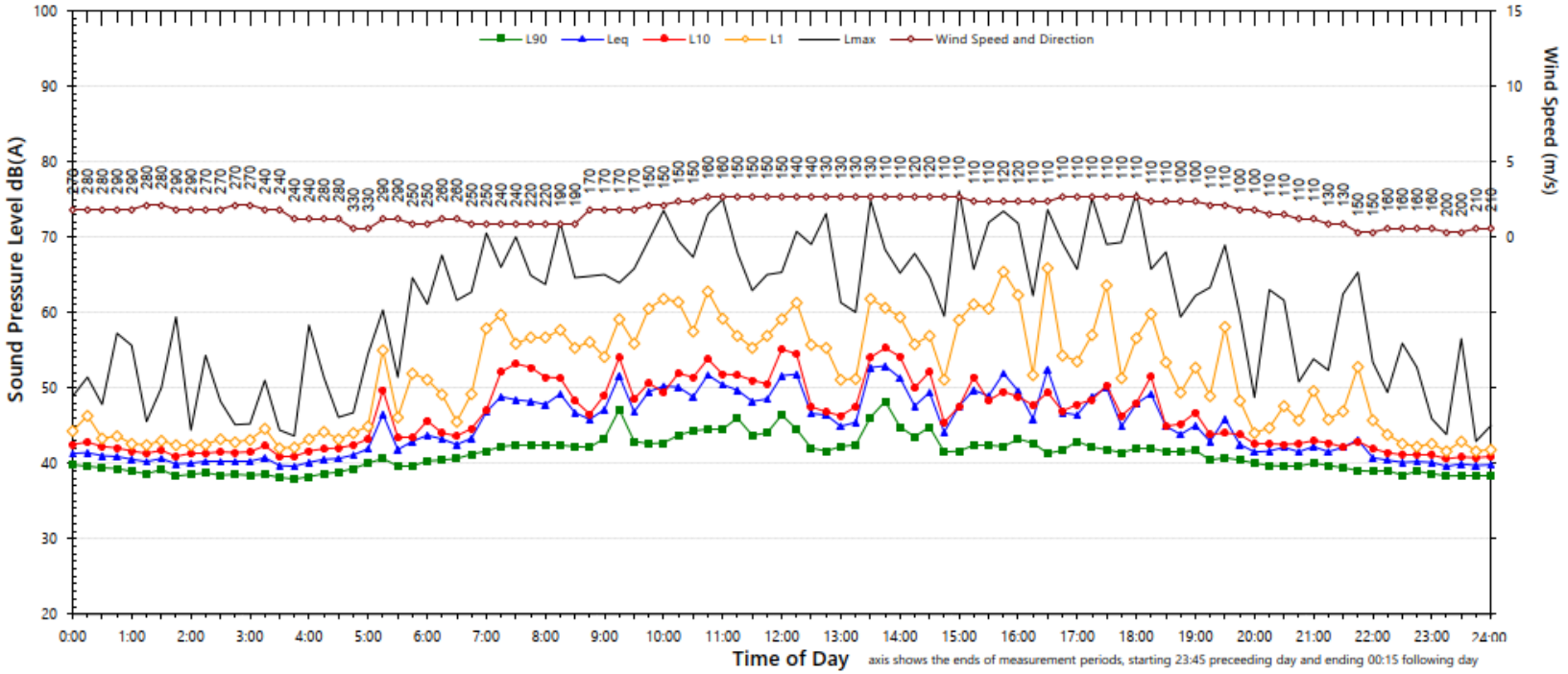
1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Day" is the period from 8am till 6pm on Sundays and 7am til 6pm on other days
3. "Evening" is the period from 6pm till 10pm
4. "Night" relates to the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

Data File: 2020-09-10_SLM_000_123_Rpt_Report.txt TL633-01L03 Rear of Drummond House RTA06-010 (r0) QTE-26 Logger Graphs Program (r33)

Unattended Noise Monitoring Results

Rear of Drummond House, 22 Wentworth St, Manly

Monday, 14 September 2020



NSW Noise Policy for Industry (Free Field)			
Descriptor	Day[2]	Evening[3]	Night[4 5]
L_{90}	42	39	38
LAeq (see note 6)	47	41	39

Night Time Maximum Noise Levels			(see note 7)
L_{Max} (Range)	67	to	67
L_{Max} - L_{eq} (Range)	15	to	22

NSW Road Noise Policy (1m from facade)		
Descriptor	Day	Night[5]
	7am-10pm	10pm-7am
$L_{eq\ 15\ hr}$ and $L_{eq\ 9\ hr}$	48	41
$L_{eq\ 1hr}$ upper 10 percentile	50	45
$L_{eq\ 1hr}$ lower 10 percentile	43	40

Notes:

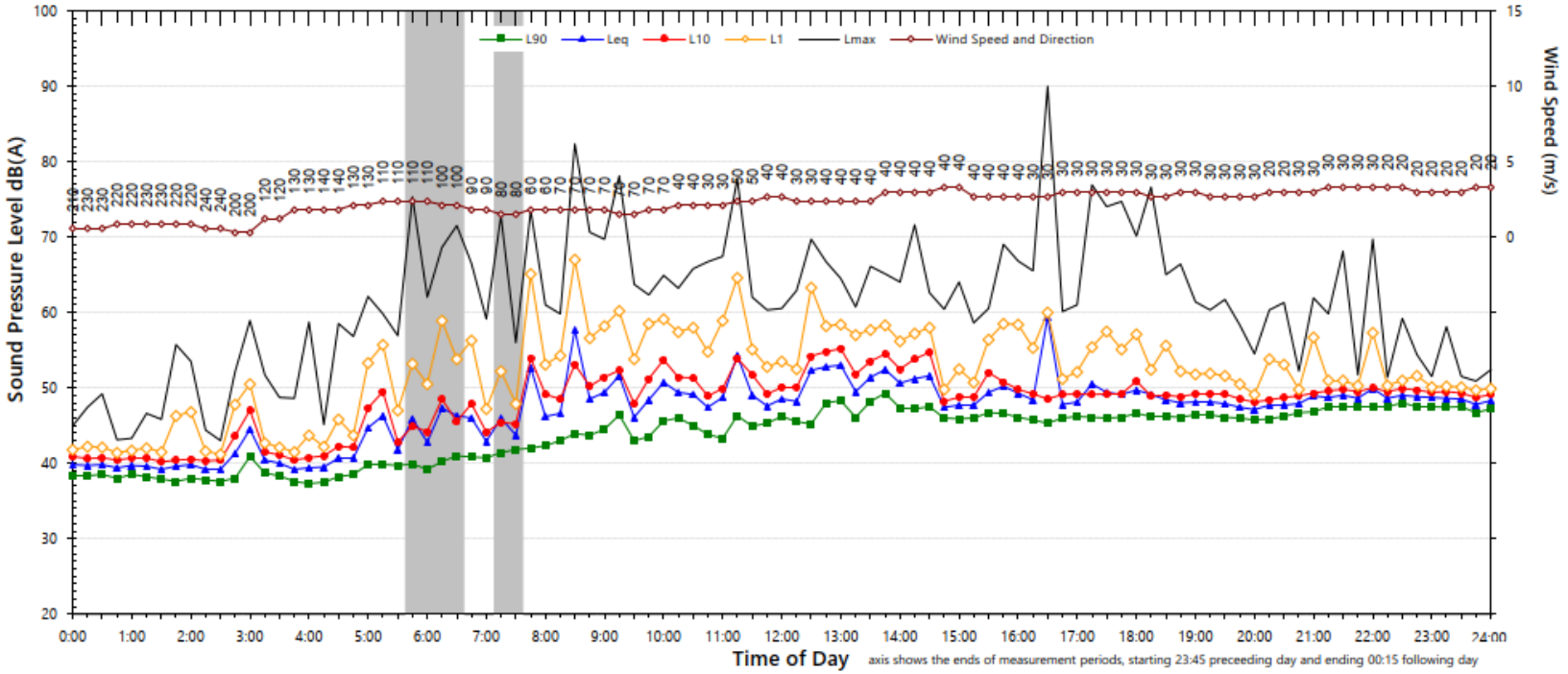
1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Day" is the period from 8am till 6pm on Sundays and 7am til 6pm on other days
3. "Evening" is the period from 6pm till 10pm
4. "Night" relates to the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

Data File: 2020-09-10_SLM_000_123_Rpt_Report.txt TL633-01L03 Rear of Drummond House RTA06-010 (r0) QTE-26 Logger Graphs Program (r33)

Unattended Noise Monitoring Results

Rear of Drummond House, 22 Wentworth St, Manly

Tuesday, 15 September 2020



NSW Noise Policy for Industry (Free Field)			
Descriptor	Day[2]	Evening[3]	Night[4 5]
L_{90}	43	46	43
LAeq (see note 6)	49	46	44

Night Time Maximum Noise Levels			(see note 7)
L_{Max} (Range)	72	to	72
L_{Max} - L_{eq} (Range)	17	to	25

NSW Road Noise Policy (1m from facade)		
Descriptor	Day	Night[5]
	7am-10pm	10pm-7am
$L_{eq\ 15\ hr}$ and $L_{eq\ 9\ hr}$	51	47
$L_{eq\ 1hr}$ upper 10 percentile	53	48
$L_{eq\ 1hr}$ lower 10 percentile	48	44

Notes:

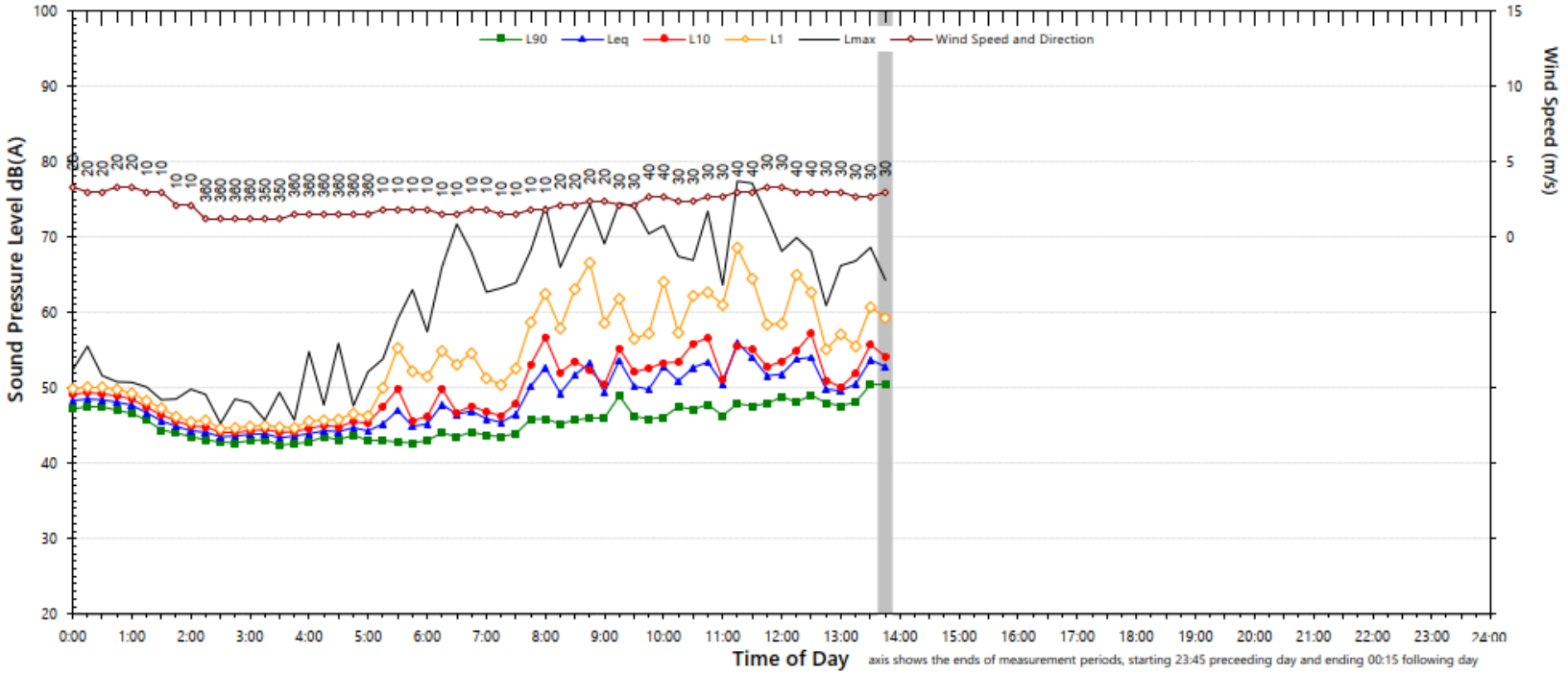
1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Day" is the period from 8am till 6pm on Sundays and 7am til 6pm on other days
3. "Evening" is the period from 6pm till 10pm
4. "Night" relates to the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

Data File: 2020-09-10_SLM_000_123_Rpt_Report.txt TL633-01L03 Rear of Drummond House RTA06-010 (r0) QTE-26 Logger Graphs Program (r33)

Unattended Noise Monitoring Results

Rear of Drummond House, 22 Wentworth St, Manly

Wednesday, 16 September 2020



NSW Noise Policy for Industry (Free Field)			
Descriptor	Day[2]	Evening[3]	Night[4 5]
L_{90}	-	-	-
LAeq (see note 6)	-	-	-

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

NSW Road Noise Policy (1m from facade)		
Descriptor	Day	Night[5]
	7am-10pm	10pm-7am
$L_{eq\ 15\ hr}$ and $L_{eq\ 9\ hr}$	52	-
$L_{eq\ 1hr}$ upper 10 percentile	53	-
$L_{eq\ 1hr}$ lower 10 percentile	51	-

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 til 6pm on other days
3. "Evening" is the period from 6pm till 10pm
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7. Night time L_{Max} values are shown only where L_{Max} >65dB(A) and where L_{Max} - Leq ≥15dB(A)

Data File: 2020-09-10_SLM_000_123_Rpt_Report.txt TL633-01L03 Rear of Drummond House RTA06-010 (r0) QTE-26 Logger Graphs Program (r33)