

Appendix I

Noise and vibration assessment

MEMORIAL AVENUE UPGRADE

Noise and Vibration Assessment

14 October 2014

Hyder Consulting Pty Ltd

TG582-01F02 (r5) Noise and Vibration Assessment

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1 Introduction

1.1 Proposal overview

Roads and Maritime Services (Roads and Maritime) propose to upgrade 2.2 kilometres of Memorial Avenue (MR642) between Windsor Road and Old Windsor Road, Kellyville (the proposal). The Proposal would include widening Memorial Avenue with a central median strip along the length to accommodate a possible future upgrade to a six-lane configuration (three lanes in each direction). The road is located in the Hills Shire Council LGA, about 35 kilometres north-west of the Sydney Central Business District.

1.2 Key features

The key features of the proposal include:

- Widening Memorial Avenue from a two-lane road to a four-lane divided road
- Providing a wide central median to allow the road to be widened to six lanes, when required
- Upgrading the intersections of Memorial Avenue with Windsor Road, Arnold Avenue (west), and Old Windsor Road / Sunnyholt Road
- Closing the intersections of Memorial Avenue with Hector Court, Rutherford Avenue, and Arnold Avenue (east)
- Providing traffic signals at the intersections of Memorial Avenue with Arnold Avenue and Severn Vale Drive
- Providing left-in and left-out access for Burns Road and Stone Mason Drive
- Widening the alignment of Windsor Road generally to the west of the existing road between President Road and Wrights Road
- Slightly widening the alignment of Old Windsor Road for about 250 metres either side of the intersection
- Building a bridge to carry Memorial Avenue over Strangers Creek
- Providing a posted vehicle speed limit of 70 kilometres per hour along Memorial Avenue

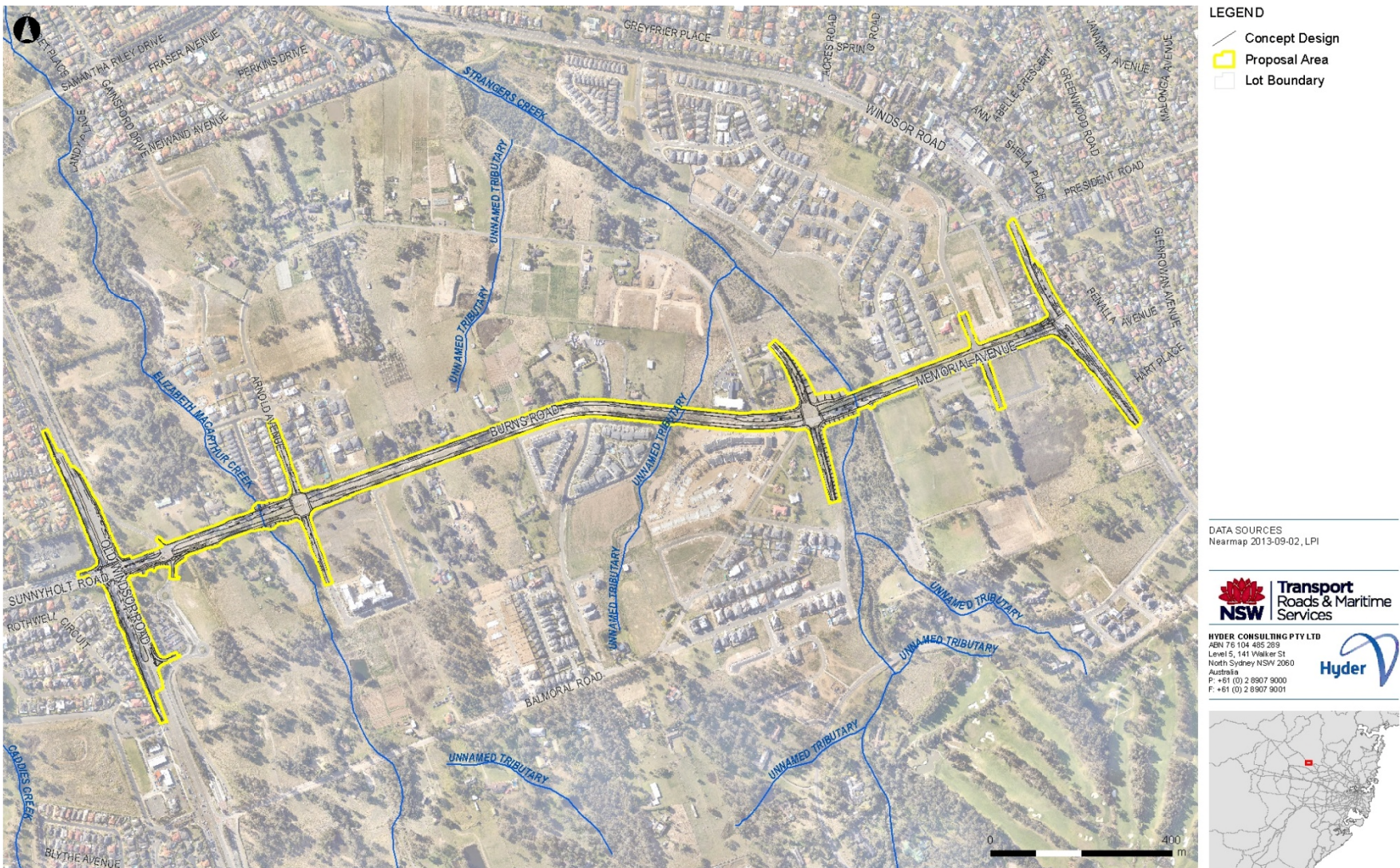
1.3 Purpose of this report

This noise and vibration assessment forms part of the Review of Environmental Factors (REF) and its purpose is to:

- Assess potential operational traffic noise impacts,
- Identify where traffic noise mitigation measures should be considered,
- Assess potential construction noise and vibration impacts.

The work documented in this report was carried out in accordance with the Renzo Tonin & Associates Quality Assurance System, which is based on Australian Standard / NZS ISO 9001. Appendix A contains a glossary of acoustic terms used in this report.

Figure 1 The proposal



2 Existing Noise Environment

2.1 Noise Catchment Areas

To facilitate the assessment of noise impacts from the proposed Memorial Avenue Upgrade, noise sensitive receiver areas along the route have been divided into Noise Catchment Areas (NCAs).

The NCAs identified for this project are described in Table 1 and shown on Figure 2.

Table 1 Noise catchment areas

| NCA | Location | Description |
|-------|--|--|
| NCA 1 | Old Windsor Rd to Thomas Boulton Cct Northern side of Memorial Ave | <ul style="list-style-type: none"> • Single commercial receiver towards Old Windsor Rd • Low to medium density suburban land • Recent subdivision development with current continuation of subdivision construction to the east • Gracelands Early Education Centre |
| NCA 2 | Old Windsor Road to 30 Memorial Ave Southern side of Memorial Ave | <ul style="list-style-type: none"> • Mixture of low density rural land & high density residential with commercial ground floor at The Gracewood Community • Recent demolition of residential dwellings |
| NCA 3 | Thomas Boulton Cct to Arnold Ave Northern side of Memorial Ave | <ul style="list-style-type: none"> • Low density rural land with residential & commercial receivers • The Hills Clinic (Hospital) |
| NCA 4 | Rocks St to Hector Ct Southern side of Memorial Ave | <ul style="list-style-type: none"> • Medium density suburban land • Recent subdivision development with current continuation of subdivision construction to the west and throughout Grace Cres and surrounding roads |
| NCA 5 | Arnold Ave to Windsor Rd Northern side of Memorial Ave | <ul style="list-style-type: none"> • Mixture of medium density new subdivision and existing residential receivers along Memorial Ave • Current subdivision construction at the intersection of Memorial Ave & Arnold Ave • Mixture of residential & commercial receivers along Windsor Rd |
| NCA 6 | Hector Ct to Windsor Rd Southern side of Memorial Ave | <ul style="list-style-type: none"> • Low density residential receiver at west near Hector Ct • Kellyville Cricket Club near middle of NCA • Commercial receivers along Windsor Rd |
| NCA 7 | Windsor Road Eastern side of Windsor Rd from President Rd to Wrights Rd | <ul style="list-style-type: none"> • Medium density residential receivers • Commercial receivers including Caltex & Repco towards northern end on eastern side of Windsor Road • Kellyville Preschool Kindergarten at northern end on President Avenue |
| NCA 8 | Old Windsor Road Western side of Old Windsor Rd from Kentwell Cr to Rothwell Cct | <ul style="list-style-type: none"> • Medium density residential receivers • Fit Kidz Day Care Centre • Outback Steakhouse (commercial receiver at southern end Old Windsor Road) |

2.2 Existing ambient noise conditions

The ambient noise environment in the study area is controlled by traffic noise from Memorial Avenue, Old Windsor Road to the west and Windsor Road to the east. Long-term noise monitoring was conducted to quantify ambient noise levels. The purpose of the noise monitoring is to establish:

- existing traffic noise levels for benchmarking and validation of the operational noise model, and
- background noise levels for the setting of construction noise goals for the project.

2.2.1 Noise monitoring locations

Long-term noise monitoring was conducted in the study area along Memorial Avenue from Tuesday 11th to Tuesday 25th February 2014 at monitoring locations M1-M4 (identified in Table 4 below). It was not possible to conduct noise monitoring at all NCAs along Memorial Avenue due to the limited number of residential dwellings within this semi-rural area, significant setback distances of some dwellings from Memorial Avenue, residential subdivision construction works potentially affecting the measured noise levels, and obstruction from boundary fences along the road corridor.

During the assessment process the scope of the project was increased to include design changes at the Windsor Road and Old Windsor Road intersections. To address the expanded scope of the project, additional noise monitoring was conducted at two locations (M5 & M6) from Tuesday 15th to Wednesday 23rd July 2014.

The monitoring locations are listed in Table 2 and shown in Figure 2.

Table 2 Noise monitoring locations

| Location | NCA | Address | Description |
|----------|-----|---------------------|--|
| M1 | 2 | 32 Memorial Avenue | Front of the property in the free field approximately 35m from the existing road corridor |
| M2 | 3 | 25 Memorial Avenue | Front yard at the property boundary in the free field approximately 8m from the road corridor |
| M3 | 3 | 19 Memorial Avenue | Front yard of the property in the free field approximately 14m from the road corridor |
| M4 | 5 | 16 Gorman Avenue | Front yard of the property in the free field approximately 50m from the road corridor |
| M5 | 7 | 8 Windsor Road | Front yard of the property in the free field approximately 18m from the road corridor |
| M6 | 8 | 10 Rothwell Circuit | Rear yard of the property in the free field approximately 20m from the road corridor with 1.8m boundary fence between noise monitor and Old Windsor Rd |

2.2.2 Measured noise levels

The noise monitoring methodology is described in Appendix B. A summary of the long-term noise monitoring results are presented in Table 3, and the graphical outputs from the noise monitors are presented in Appendix F.

Table 3 Measured noise levels

| Location | Address | L _{Aeq} Traffic Noise Levels | | L _{A90} Background Noise Level (RBL) | | |
|----------|---------------------|---------------------------------------|--------------------------------|---|---------|-------|
| | | Day, L _{Aeq,15hr} | Night, L _{Aeq,9hr} | Day | Evening | Night |
| M1 | 32 Memorial Avenue | 62 | 58 | 49 | 46 | 37 |
| M2 | 25 Memorial Avenue | 72 | 66 | 54 | 48 | 42 |
| M3 | 19 Memorial Avenue | 71 | 65 | 53 | 50 | 41 |
| M4 | 16 Gorman Avenue | 59 | 56 | 49 | 50 | 44 |
| M5 | 8 Windsor Road | 68 | 63 | 55 | 50 | 34 |
| M6 | 10 Rothwell Circuit | 61 | 58 | 49 | 48 | 38 |

Figure 2 Noise catchment areas and monitoring locations



3 Noise Criteria

3.1 Operational traffic noise criteria

The assessment of road traffic noise impact is guided by the *NSW Road Noise Policy, 2011 (RNP)* and *RTA Environmental Noise Management Manual (ENMM, 2001)*.

Memorial Avenue provides connection between Old Windsor Road and Windsor Road arterials, and is therefore defined as a sub-arterial in the RNP. According to the ENMM, the upgrade of Memorial Avenue does not constitute a 'new road traffic noise source' because the road is not new and does not produce noise to receptors from a different direction. The project is within the existing road corridor and therefore the project is classed as a 'road redevelopment'.

3.1.1 Residential land uses

The RNP is used to assess the potential traffic noise impact from a redevelopment of road infrastructure. The 'redevelopment' criteria for residential type receivers, as set out in the RNP apply, and are presented in Table 4. These criteria are for noise levels assessed in front of a building facade, or facade corrected noise levels when assessing in the free-field.

Table 4 Road traffic noise assessment criteria for residential land uses

| Road Category | Type of project/land use | Assessment Criteria, dB(A) | |
|--|--|---|--|
| | | Day 7:00am-10:00pm | Night 10:00pm-7:00am |
| Freeway/ arterial/ sub-arterial roads | Existing residences affected by noise from redevelopment of existing freeway / arterial / sub-arterial roads | L _{Aeq,(15 hour)} 60 (external) | L _{Aeq,(9 hour)} 55 (external) |

Note: Land use developers must meet internal noise goals in the Infrastructure SEPP (Department of Planning NSW 2007) for residences near busy roads (see RNP Appendix C10).

Where existing traffic noise levels are above the noise assessment criteria, the primary objective is to reduce these through feasible and reasonable measures to meet the assessment criteria. A secondary objective is to protect against excessive decreases in amenity as the result of a project by applying the relative increase criteria.

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

3.1.2 Sensitive land use developments

The RNP also sets guidelines for the assessment of traffic noise on sensitive land uses such as schools, hospitals, places of worship and recreation areas. The noise assessment criteria for these land uses are presented in Table 5.

Table 5 Road traffic noise assessment criteria for non-residential land uses

| Existing sensitive land use | Assessment criteria, dB(A) | | Additional considerations |
|-----------------------------|--|---------------------------------------|---|
| | Day (7am-10pm) | Night (10pm-7am) | |
| 1. School classrooms | L _{Aeq,1hour} 40 (internal) when in use | – | In the case of buildings used for education or health care, noise level criteria for spaces other than classrooms and wards may be obtained by interpolation from the 'maximum' levels shown in Australian Standard 2107:2000 (Standards Australia 2000). |
| 2. Hospital wards | L _{Aeq,1hour} 35 (internal) | L _{Aeq,1 hour} 35 (internal) | |
| 3. Places of worship | L _{Aeq,1hour} 40 (internal) | L _{Aeq,1 hour} 40 (internal) | <p>The criteria are internal, i.e. the inside of a church. Areas outside the place of worship, such as a churchyard or cemetery, may also be a place of worship. Therefore, in determining appropriate criteria for such external areas, it should be established what in these areas may be affected by road traffic noise.</p> <p>For example, if there is a church car park between a church and the road, compliance with the internal criteria inside the church may be sufficient. If, however, there are areas between the church and the road where outdoor services may take place such as weddings and funerals, external criteria for these areas are appropriate. As issues such as speech intelligibility may be a consideration in these cases, the passive recreation criteria (see point 5) may be applied.</p> |
| 4. Open space (active use) | L _{Aeq,15hour} 60 (external) when in use | | <p>Active recreation is characterised by sporting activities and activities which generate their own noise or focus for participants, making them less sensitive to external noise intrusion.</p> <p>Passive recreation is characterised by contemplative activities that generate little noise and where benefits are compromised by external noise intrusion, e.g. playing chess, reading.</p> |
| 5. Open space (passive use) | L _{Aeq,15hour} 55 (external) when in use | | In determining whether areas are used for active or passive recreation, the type of activity that occurs in that area and its sensitivity to noise intrusion should be established. For areas where there may be a mix of passive and active recreation, e.g. school playgrounds, the more stringent criteria apply. Open space may also be used as a buffer zone for more sensitive land uses. |
| 6. Childcare facilities | <p>Sleeping rooms L_{Aeq,1hour} 35 (internal)</p> <p>Indoor play areas L_{Aeq,1hour} 40 (internal)</p> <p>Outdoor play areas L_{Aeq,1hour} 55 (external)</p> | – | <p>Multi-purpose spaces, e.g. shared indoor play/sleeping rooms should meet the lower of the respective criteria.</p> <p>Measurements for sleeping rooms should be taken during designated sleeping times for the facility, or if these are not known, during the highest hourly traffic noise level during the opening hours of the facility.</p> |
| 7. Aged care facilities | – | – | Residential land use noise assessment criteria should be applied to these facilities |

Notes: Land use developers must meet internal noise goals in the Infrastructure SEPP (Department of Planning NSW 2007) for sensitive developments near busy roads.

It is generally accepted that most buildings provide a noise reduction of at least 10dB(A) when windows are left 20% open, without providing additional treatment. Therefore where the noise goals are internal, a 10dB(A) reduction from external noise levels to internal noise levels has been adopted to allow an external assessment.

3.2 Relative increase criteria

The traffic noise impact from the proposed road 'redevelopment' would need to also comply with the 'Relative Increase Criteria' as discussed in Section 2.4 of the RNP. The relative increase criteria are to be applied to the external areas of existing residential and sensitive land uses impacted upon by the redeveloped road.

The relative increase criteria as set out in the RNP applicable to this project are reproduced below and apply for all NCAs.

Table 6 Relative increase criteria

| Type of development | Total traffic noise level increase, dB(A) |
|--------------------------------|---|
| Redevelopment of existing road | Existing traffic $L_{Aeq(period)} + 12$ dB (external) |

Note: 'Existing traffic' refers to the traffic noise levels for the relevant 'no build' option

Receivers alongside Memorial Avenue are already exposed to high levels of traffic noise. Since this project is an upgrade of an existing road and only minor changes to the road width and alignment are being proposed, noise modelling presented in Appendix C shows that the noise level change at any receiver between the build and no build scenarios is small, well below 12dB(A). There are no locations where the project will cause an increase of more than 12dB over the existing noise levels. The project therefore complies with the relative increase criteria.

3.3 Recent residential developments

RMS advised The Hills Shire Council of the plan to upgrade Memorial Avenue in 2008 so that any land developers who approached Council with a development application could be notified of the upgrade. The RNP noise goals apply only to existing receivers. Any recent developments in the project area that were approved after 2008 are not considered for additional noise mitigation as noise mitigation is the responsibility of the developer. Land developers must meet the internal noise goals set out in the Infrastructure SEPP (Department of Planning NSW 2007).

4 Operational Noise Assessment

4.1 Traffic flow and composition summary

4.1.1 Existing traffic volumes

Traffic counts of Memorial Avenue within the project area were conducted concurrently with the long term noise monitoring of Memorial Avenue in February 2014 to allow validation of the computer noise model. Additional traffic data for Old Windsor Road and Windsor Road was provided by Hyder Consulting. The results of the traffic survey and additional traffic data are summarised in Table 7.

Table 7 Existing 2014 Traffic volume & compositions

| Road | ADT | Direction | Volume | Day time (7:00 – 22:00) | | Night time (22:00 – 7:00) | | Speed km/h |
|--|-------|-----------|--------|-------------------------|-----|---------------------------|------|------------|
| | | | | Volume | HV% | Volume | HV% | |
| Memorial Ave at Stranglers Ck | 22953 | EB | 11989 | 10679 | 4.9 | 1309 | 15.9 | 63 |
| | | WB | 10964 | 9744 | 6.2 | 1220 | 16.9 | 65 |
| Memorial Ave at Elizabeth Macarthur Ck | 22471 | EB | 12059 | 10653 | 4.7 | 1407 | 15.0 | 60 |
| | | WB | 10412 | 9267 | 4.3 | 1145 | 12.5 | 60 |
| Old Windsor Rd - North of Memorial Ave | 34900 | Combined | 34900 | 30400 | 5.9 | 4,500 | 6.4 | 80 |
| Old Windsor Rd - South of Memorial Ave | 43200 | Combined | 43200 | 37,600 | 6.1 | 5,600 | 5.2 | 80 |
| Windsor Rd - North of Memorial Ave | 33300 | Combined | 33300 | 29,000 | 5.9 | 4,300 | 7.0 | 60 |
| Windsor Rd - South of Memorial Ave | 45500 | Combined | 45500 | 39,600 | 6.1 | 5,900 | 5.6 | 60 |

4.1.2 Opening and design year traffic volumes

Traffic data for Memorial Avenue, Old Windsor Road & Windsor Road has been provided by Hyder Consulting for future years 2019 (Year of Opening) and 2029 (Design Year) as shown in Table 8 below. This data was utilised for the purpose of noise modelling predictions.

Table 8 Forecasted traffic volumes

| Road | AADT | Day time (7:00 – 22:00) | | | Night time (22:00 – 7:00) | | |
|--|--------|-------------------------|-----|------------|---------------------------|-----|------------|
| | | Volume | HV% | Speed km/h | Volume | HV% | Speed km/h |
| 2019 Forecast | | | | | | | |
| Memorial Avenue at Stranglers Creek | 32,200 | 28,000 | 6.8 | 70 | 4,200 | 7.6 | 70 |
| Memorial Avenue at Elizabeth Macarthur Creek | 33,500 | 29,100 | 6.9 | 70 | 4,400 | 7.0 | 70 |
| Old Windsor Rd - North of Memorial Ave | 40800 | 35500 | 5.9 | 80 | 5300 | 6.6 | 80 |
| Old Windsor Rd - South of Memorial Ave | 51200 | 44500 | 6.1 | 80 | 6700 | 5.5 | 80 |
| Windsor Rd - North of Memorial Ave | 41400 | 36000 | 6.1 | 60 | 5400 | 5.2 | 60 |

| Road | AADT | Day time (7:00 – 22:00) | | | Night time (22:00 – 7:00) | | |
|--|-------|-------------------------|-----|------------|---------------------------|-----|------------|
| | | Volume | HV% | Speed km/h | Volume | HV% | Speed km/h |
| Windsor Rd - South of Memorial Ave | 56600 | 49200 | 6.1 | 60 | 7400 | 5.4 | 60 |
| 2029 Forecast | | | | | | | |
| Memorial Avenue at Stranglers Creek | 38000 | 33200 | 6.7 | 70 | 4800 | 8.3 | 70 |
| Memorial Avenue at Elizabeth Macarthur Creek | 41600 | 36200 | 5.4 | 70 | 5400 | 5.9 | 70 |
| Old Windsor Rd - North of Memorial Ave | 44000 | 38300 | 6.0 | 80 | 5700 | 6.0 | 80 |
| Old Windsor Rd - South of Memorial Ave | 55000 | 47900 | 6.1 | 80 | 7100 | 5.6 | 80 |
| Windsor Rd - North of Memorial Ave | 44500 | 38700 | 5.9 | 60 | 5800 | 6.4 | 60 |
| Windsor Rd - South of Memorial Ave | 62800 | 54600 | 6.0 | 60 | 8200 | 5.7 | 60 |

It is assumed that the growth in traffic on Memorial Avenue would occur regardless of the road upgrade, therefore the noise models for both the 'build' and 'no build' options utilise the same traffic data.

4.2 Road traffic noise predictions

Noise predictions are based on a method developed by the United Kingdom Department of Environment entitled "Calculation of Road Traffic Noise (1988)" known as the CoRTN (1988) method. This method has been adapted to Australian conditions and extensively tested by the Australian Road Research Board and as a result it is recognised and accepted by the NSW Environment Protection Authority. The model predicts noise levels for steady flowing traffic and noise from high truck exhausts is also taken into account.

The CoRTN algorithms are contained within the 'CadnaA' noise modelling software which has been used to calculate traffic noise levels at receivers. The noise prediction model takes into account the following inputs.

Table 9 Summary of modelling inputs

| Input parameters | Data acquired from |
|--|--|
| Traffic volumes and mix | Based on traffic counts and forecast data from Hyder |
| Vehicle speed | Memorial Avenue: 'No Build' Model: Sections of 60km/h and 70km/h as per posted speeds 'Build' Model: Upgraded posted speed of 70km/h Old Windsor Road: 80km/h as per posted speed Windsor Road: 60km/h as per posted speed |
| Gradient of roadway | Topographic data provided by Hyder |
| Source height | 0.5 metre for car exhaust, 1.5 metres for car and truck engines and 3.6 metres for truck exhaust and detailed within CORTN88 |
| Ground topography at receiver and road | Ground contours obtained from Hyder Consulting & NSW Land & Property Information (LPI) |
| Angles of view from receiver | Contained within model |

| Input parameters | Data acquired from |
|--|--|
| Reflections from existing barriers, structures and cuttings on opposite side of road | Calculated in CadnaA through CoRTN algorithm |
| Ground absorption | 1.0 [can vary between 0 (hard surface) to 1 (soft ground)] |
| Receiver Heights | 1.5 metre above ground level for ground floor and 4.5 metre above ground level for 1st floor |
| Facade correction | +2.5dB(A) |
| Correction for Australian conditions | L _{Aeq,15h} : -1.7 dB for 'at facade' & -0.7dB for 'free field' conditions from Australian Road Research Board (ARRB) Transport Research (Saunders et al 1983) L _{Aeq,9h} : No Australian Conditions correction applied |
| Acoustic properties of road surfaces | Dense graded asphalt – no corrections applied |
| Noise mitigation measures | Existing significant fences included in noise model |

4.3 Model validation

The noise model was validated using the long-term noise monitoring results. Table 10 below summarises the results of the validation, providing a comparison of the modelled traffic noise levels for existing conditions compared to the measured traffic noise levels.

Table 10 Noise model validation

| Location | L _{Aeq,15hr} Daytime noise level | | | L _{Aeq,9hr} Night time noise level | | |
|-----------------------|---|----------|-------------|---|----------|-------------|
| | Measured | Modelled | Variation | Measured | Modelled | Variation |
| 32 Memorial Avenue | 62.3 | 62.6 | -0.3 | 57.8 | 58.9 | -1.1 |
| 25 Memorial Avenue | 72.1 | 71.5 | 0.6 | 66.2 | 67.8 | -1.6 |
| 19 Memorial Avenue | 70.9 | 69.2 | 1.7 | 65.4 | 65.4 | 0.0 |
| 16 Gorman Avenue | 59.2 | 61.7 | -2.5 | 55.5 | 57.9 | -2.4 |
| 8 Windsor Road | 67.6 | 68.0 | -0.4 | 62.8 | 62.9 | -0.1 |
| 10 Rothwell Circuit | 64.1 | 65.1 | -1.0 | 58.3 | 59.6 | -1.3 |
| Mean variation | | | -0.4 | | | -1.1 |

The noise model validation results show that the noise model outputs are typically in good agreement with the noise monitoring results and there is a high level of confidence that can be placed on the noise model for predicting future traffic noise levels.

At 16 Gorman Avenue the model is predicting approximately 2.5dB higher than the measured noise levels during both the day and night periods. The model may be under predicting the acoustic shielding from the terrain and boundary fencing along Burns Road (perpendicular to Memorial Avenue), combined with the effect of traffic travelling slower than the posted speed in this area as it approaches the Windsor Road intersection, particularly during peak periods when vehicles are queuing on Memorial Avenue.

The mean variation between the measured and modelled traffic noise levels is an acceptable tolerance and therefore no model calibration corrections were applied to the noise model when generating the operational noise predictions for future traffic noise scenarios.

4.4 Noise model prediction results

Operational noise modelling has been conducted based on the traffic volumes presented in Section 4.1.2. The scenarios predicted are:

- **'Opening Year' 2019**, 'no-build' and 'build' options, day and night periods.
- **'Design Year' 2029**, 'no-build' and 'build' options, day and night periods.

The outcomes of noise modelling are:

- The increase in noise levels between the design year 'no-build' and 'build' options is more than 2dB(A) in NCAs 2, 4 and 5.
- Design year 2029 noise levels are predicted to be acute at 117 properties.
- There are several residential subdivisions that were approved after the road upgrade was proposed, and noise mitigation for these recent developments lies with the developer. These properties are not considered for noise treatment as part of this project.
- 52 properties have been identified for further consideration of noise mitigation, which includes the Gracelands Early Education Centre at 24 Arnold Avenue.

Further noise mitigation is considered at receivers where design year noise levels are acute, that is greater than or equal to $L_{Aeq,15hr}$ 65dB(A) or $L_{Aeq,9hr}$ 60dB(A), or where noise levels exceed the RNP noise assessment criteria and have increased by more than 2dB(A).

The predicted noise levels produced by the noise model are shown in detail in Appendix C. A summary of the results is shown in Table 11. Properties where further noise mitigation is to be considered are identified in Appendix E and a discussion of possible noise mitigation options is presented in Section 4.6.

Table 11 Summary of operational noise model results

| NCA | Does the project increase noise levels by more than 2dB(A) for predicted levels above the RNP noise assessment criteria? | Number of 'acute' properties in Design Year 2029 | Number of properties where further noise mitigation would be considered* |
|-----|--|--|--|
| 1 | No | 8 | 2 |
| 2 | Yes | 1 | 1 |
| 3 | No | 6 | 5 |
| 4 | Yes | 42 | 0 |
| 5 | Yes | 26 | 11 |
| 6 | No | 3 | 2 |
| 7 | No | 14 | 13 |
| 8 | No | 20 | 18 |
| | Total | 120 | 52 |

Note * noise affected properties that were approved for development after the road upgrade was proposed and made known to Council are not considered for further treatment. Rather it is the responsibility of the developer to achieve the noise goals outlined in the NSW State Environmental Planning Policy (Infrastructure) 2007.

4.5 Noise contours

The $L_{Aeq,15hr}$ Daytime and $L_{Aeq,9hr}$ Night time noise contours for the Design Year 2029 'No Build' and 'Build' scenarios are presented in Appendix D. The noise contours are produced by interpolation from a series of calculations to specific points within a regularly spaced grid, 1.5 metres above ground level. Noise contours are estimates of the predicted noise levels, and contour values may differ slightly from equivalent spot calculations.

4.6 Road traffic noise mitigation options

As some residences within the project area are exposed to a noise level increase of more than 2dB(A), and/or exposed to acute noise levels, an assessment of feasible and reasonable noise mitigation options is required.

This project is still at concept design phase and final noise mitigation treatments will not be decided until the detailed design phase to allow for all design changes to be considered in the noise assessment. Nonetheless, the following recommendations provide in-principle noise control solutions to reduce noise impacts to residential receivers. The advice provided here is in respect of acoustics only. Supplementary professional advice may need to be sought in respect of fire ratings, structural design, buildability, fitness for purpose and the like.

Section 3.4.1 of the RNP indicates the following priority order for noise mitigation:

"...identify feasible and reasonable mitigation measures in the following order of priority:

- i. Road design and traffic management*
- ii. Quieter pavement surfaces*

- iii. *In-corridor noise barriers/mounds*
- iv. *At-property treatments or localised barriers/mounds"*

After road design and traffic management opportunities have been included in the road design and non-compliances still remain, the other additional mitigation measure should be applied where reasonable and feasible. The following discussion comments on the feasibility and reasonableness of the remaining mitigation options in accordance with the order of priority stated above.

4.6.1 Quieter pavements

At speeds of approximately 50km/h, road/tyre noise begins to be the dominate component of road traffic noise. At speeds of 70km/h or more, low noise pavements such as Stone Mastic Asphalt (SMA) or Open Graded Asphaltic Concrete (OGAC) can typically provide 3 - 4dB(A) noise reduction compared to dense graded asphalt, although this benefit is reduced over time due to degradation of the pavement surface.

There are 9 residences along the Memorial Avenue corridor that are identified for further consideration of noise mitigation and if a low noise pavement was applied to Memorial Avenue only, this would be reduced to 3 residences.

All of the other residences within the study area that are identified for further consideration of noise mitigation are adjacent to Windsor Road and Old Windsor Road near the intersections with Memorial Avenue. At intersections, where traffic slows down and then accelerates, is not ideal for quiet pavements and can cause increased wear and maintenance.

While a low noise pavement would provide some reduction in traffic noise, it is probably not feasible near intersections, and may not be cost effective along the length of Memorial Avenue due to the relatively small number of residences that require treatment. Implementation of low noise pavement should be further considered by pavement engineers at the detailed design phase of the project to confirm these assertions.

4.6.2 Noise barriers

At the time of announcement of Memorial Avenue Upgrade the residences along the road corridor were largely semi-rural in nature, isolated on large lots or in small groups. The RTA's ENMM notes that noise barriers are not cost effective where residences are isolated or in small groups, rather architectural treatments to dwellings are a more cost effective solution. Subsequently roadside noise barriers are not recommended for this project. Even though in recent years there have been low density residential developments constructed along the corridor, noise mitigation for these new residences is the responsibility of the developer.

4.6.3 At-property treatment

At-property treatment would only be considered for dwellings where other noise mitigation measures are either exhausted or are not feasible or cost effective.

The RNP's noise criteria are external noise goals, and building treatment only reduces noise levels inside a dwelling. Therefore, any applied building treatment would be designed to achieve the internal noise levels that would have been achieved had the project complied with the RNP criteria externally.

It is generally accepted that most buildings provide a noise reduction of at least 10dB(A) when windows are left 20% open, without providing additional treatment. This equates to an RNP internal criteria of $L_{Aeq,15hr}$ 50dB(A) and $L_{Aeq,9hr}$ 45dB(A) for residences along the road upgrade.

According to the ENMM, building treatments (in no particular order) may comprise:

- Fresh air ventilation systems that allow existing windows and doors to be kept shut;
- Upgraded windows and glazing and solid core doors on the exposed facades of masonry structures only (these techniques are unlikely to produce any noticeable benefit for light frame structures with no acoustic insulation in the walls);
- Upgrading window and door seals;
- Sealing wall vents; and
- External screen walls or property boundary fencing.

The following table provides guidance on the level of treatment required in relation to the exceedance above the RNP external assessment criteria.

Table 12 Residential at-property treatment options

| Treatment 1 | Mechanical ventilation only |
|----------------------|---|
| <5dB(A) reduction | Where external noise levels are less than 5dB(A) above the RNP external assessment criteria, the internal noise goals may be achieved with windows closed. A light framed building with single glazed windows will provide a minimum noise reduction of up to 15dB(A) from outside to inside when windows are closed. If the RNP internal noise goals can only be achieved with windows closed, then mechanical ventilation should be considered to ensure fresh airflow inside the dwelling so to meet the requirements of the Building Code of Australia. It is important to ensure that mechanical ventilation does not provide a new noise leakage path into the dwelling and does not create a noise nuisance to neighbouring residential premises. |
| Treatment 2 | Mechanical ventilation and sealing of wall vents |
| 5-10 dB(A) reduction | Where external noise levels are less than 10dB(A) above the RNP external assessment criteria, the internal noise goals may be achieved with windows closed. A light framed building with single glazed windows will provide a minimum noise reduction of up to 20dB(A) from outside to inside (ENMM p20) when windows are closed and wall vents are sealed. If the internal noise goals can only be achieved with windows closed, then mechanical ventilation should be considered to ensure fresh airflow inside the dwelling so to meet the requirements of the Building Code of Australia. |

| | |
|----------------------|--|
| Treatment 3 | Upgraded seals for windows and doors |
| 10-12dB(A) reduction | Where external noise levels are only slightly greater than 10dB(A) above the RNP external assessment criteria, then in addition to installing mechanical ventilation (Treatment 1) and sealing of wall vents (Treatment 2), special acoustic grade seals should be installed on windows and perimeter doors exposed to road traffic noise to enable the internal noise criteria to be achieved with windows and doors shut. |
| Option 4 | Upgraded windows, glazing and doors |
| >12 dB(A) reduction | Where the predicted external noise level exceeds the RNP external assessment criteria by significantly more than 10dB(A), then upgraded windows and glazing and the provision of solid core doors would be required on the facades exposed to the proposed upgrade, in addition to the mechanical ventilation, sealing of wall vents and acoustic seals for windows and doors described in Treatments 1, 2 and 3, respectively. Note that these upgrades are only suitable for masonry type buildings. It is unlikely that this degree of upgrade would provide significant benefits to light framed structures should there be no acoustic insulation in the walls. |

There are a number of physical factors that can influence the level of noise reduction actually achieved from outside-to-inside a dwelling, which include:

- existence of balconies on a facade causing reflections and amplification of sound
- orientation of each facade exposed to road noise for each room
- number of facades exposed to road noise for each room
- area size of all facades exposed to road noise for each room
- surface areas of windows / doors per room
- surface areas of walls / roofs / floors per room
- possible entry of noise via roof / sub-floor
- type of construction, thickness and condition of windows / doors / walls / roofs / floors per room
- size, volume and layout of each room
- type of floor covering, curtains and other soft furnishings in each room

Given that the above details are unique for each dwelling, it is recommended that field inspections of each affected property be undertaken during the detailed design stage of the project in order to conduct detailed noise modelling for the affected habitable rooms of each dwelling.

4.7 New signalised intersections

4.7.1 Interrupted traffic flow

The proposal includes new signalised intersections at Arnold Avenue and Severn Vale Drive. This will potentially create interrupted (or stop-and-go) traffic flow conditions compared to the largely uninterrupted flows that are currently found on Memorial Avenue. Stop-and-go conditions resulting from changing traffic signals result in deceleration and acceleration noises as vehicles approach and depart road intersections. These deceleration and acceleration noises not only differ from each other, but also differ from the cruising traffic noise that occurs in the middle of a green light period. Different characteristics which are apparent throughout the noise measurement period of interrupted traffic flow conditions in urban areas make formulating a theoretical traffic noise model difficult and complex for this kind of condition.

Notwithstanding the above, the RLS-90 noise prediction method defines a correction for signalised intersections which is dependent on distance from the road. Assuming a reduced traffic speed as vehicles approach an intersection to stop, and adding the RLS-90 correction, we have conducted noise calculations with and without signalised intersections, and we expect the Leq noise levels to change by less than 1dB(A) at the nearest residence due to the introduction of the signalised intersection compared to free-flowing traffic. This is consistent with our past experience where noise levels from vehicles were measured at an intersection for both free-flowing and stop-and-go conditions, and the measured levels were within 1dB(A) for each scenario.

In terms of Lmax, noise levels can be higher near intersections than along equivalent sections of road with continuous traffic flow. This is due to the acceleration of vehicles away from an intersection; however this only occurs for vehicles traveling with instantaneous speeds of less than 60km/h. At instantaneous speeds of approx. 60km/h or greater, a vehicle's passby noise level will tend to be the same whether the vehicle is travelling at a constant speed or accelerating at that instant in time. This is likely due to tyre-to-road noise dominating over engine noise at higher speeds. Also the passby noise level of a vehicle at 60km/h is greater than the noise of a vehicle accelerating at instantaneous speeds of less than 60km/h. This applies to light vehicles and could vary for heavy vehicles depending on gearing. [Reference: 'Prediction of noise changes due to traffic speed control', p2074-2081, JASA 122(4), October 2007].

In summary, while the introduction of intersections may alter the character of noise that the surrounding receivers experience, the new intersections themselves will not significantly alter the level of noise at those receivers.

4.7.2 Audio-tactile push buttons

RMS installs audio-tactile push buttons to pedestrian crossing traffic control signals to provide improved accessibility for hearing and visually impaired people. RMS has produced a management framework for noise from audio-tactile push buttons titled 'Management of noise from traffic signal audio-tactile push buttons'. The management framework states the following:

"As the audio-tactile push buttons produce short duration high noise levels, an EIA maximum noise goal of 15dB(A) over the assumed internal sleeping accommodation noise level of 35dB(A) should be applied.

As most houses, regardless of the construction type, will achieve 10dB(A) noise level reduction through the building façade with windows open, the appropriate external noise performance standard for evaluating environmental impacts associated with new traffic signal installations is $35 + 15 + 10 = 60\text{dB(A)}$ Lmax."

The above noise goal is primarily used to protect bedrooms of a residential dwelling and thus would be applicable for the night period only. Therefore, based on the above requirements, the applicable noise goal for the assessment of tactile noise from the pedestrian push buttons is 60dB(A), outside an affected bedroom window of a dwelling during the night period.

The loudest producible noise level from a push button is 85dB(A) at a walk phase signal frequency of 500Hz and at a distance of 1m from the push button device. Allowing for a 5dB(A) correction for the tonal nature of the source, the level used for assessment purposes is 90dB(A) at 1m.

Noise modelling of push button noise was conducted for at both intersections. The nearest residence to the Severn Vale Drive intersection push button will be approximately 80m (after property acquisitions). The noise level at this residence is predicted to be 52dB(A), which complies with the 60dB(A) goal.

The nearest residence to the Arnold Avenue intersection is approximately 25m, although this residence is recent and was DA approved after the announcement of the road upgrade proposal. The predicted level at the nearest residence to Arnold Avenue is 62dB(A), which is a minor exceedance of the goal.

If in the event noise from push buttons was generating complaints, there are several mitigation measures available. A three setting volume switch (ie. high, medium and low) is available inside the push button housing. The source noise level used in this assessment is based on the highest volume setting. It is understood that the volume switch provides a 3dB(A) reduction per switch setting, therefore on the low setting up to 6dB(A) reduction is achievable. This volume setting alone would mitigate the minor predicted exceedance at the Arnold Avenue intersection.

Furthermore, the push button unit also incorporates an automatic gain control (AGC), which actively reduces the noise source level based on the instantaneous ambient noise level immediately prior to the walk phase signal being activated. Therefore during periods of low background noise in the absence of vehicle passbys, AGC will reducing the source level, thereby minimising noise disturbance, particularly at night.

5 Maximum Noise Level Assessment

The RNP does not specify a night-time L_{max} noise limit or noise goal. This is primarily because research conducted to date in this field has not been definitive and the relationship between maximum noise levels, sleep disturbance and subsequent health effects is not currently well defined.

According to the policy however, the likely maximum or peak noise levels are to be broadly assessed and reported for the night-time period, which is considered by the EPA as being 10pm to 7am. The assessment of maximum noise levels are only applicable at residential receivers.

The RNP does not specify a night-time L_{max} noise limit or noise goal. This is primarily because research conducted to date in this field has not been definitive and the relationship between maximum noise levels, sleep disturbance and subsequent health effects is not currently well defined.

According to the policy however, the likely maximum or peak noise levels are to be broadly assessed and reported for the night-time period, which is considered by the NSW Environment Protection Authority (EPA) as being 10pm to 7am.

For the purpose of this assessment, a maximum noise event is defined as any vehicle passby for which $L_{Amax} > 65dB(A)$ and $L_{Amax} - L_{Aeq(1hr)} \geq 15dB(A)$. Taking guidance from Practice Note iii of the ENMM, we have used the following methodology for assessing maximum noise levels;

- Collate external L_{Amax} and L_{Aeq} noise levels from the monitored existing noise levels between 10 pm and 7 am based on 1 second stored data at all available monitoring locations (4 in total).
- Calculate the $L_{Amax} - L_{Aeq}$ range from the monitored existing noise levels at each location.
- Analyse the L_{Amax} noise levels based on the 1 second stored data to determine the number of maximum noise events per hour during the night period.
- Predict the future L_{Amax} noise levels based on the proposed road design and distance corrections.
- Predict the future L_{Amax} events by factoring the measured events to the increase in traffic between existing (2014) and future (2029) traffic volumes data provided by RMS.
- Discuss the predicted results at noise monitoring locations with respect to residential receivers within each NCA.
- Evaluate whether maximum noise impacts will reduce or increase for the design year.

Table 13 shows the range of L_{Amax} levels and the number of maximum noise events as measured by the noise monitors deployed for this study. The distance of each monitor from the road varied, however since much of the study area is to be redeveloped for residential use in the future, and since new developments will tend to have a road setback of around 15 - 20m, the results from M3 are most relevant and have been used as the basis of future maximum noise event predictions.

Allowing for changes in the road to receiver distance as a result of the project widening, the maximum noise levels in 2029 are predicted to be 69 - 89dB(A) externally. This represents a 4 - 5dB(A) increase for receivers in NCA 2, 4, and 5 as these are the areas where the road widens significantly towards the residences. Residences in other NCAs will experience L_{Amax} levels similar to current levels.

Based on future traffic growth and specifically the increase in night time heavy vehicles, receivers along Memorial Avenue can expect an increase in the number of maximum noise events from approximately 48 per night to 88 per night, which is an increase of more than 80%.

While L_{Amax} noise levels at a property do not determine whether noise mitigation should be applied, they can assist in the prioritisation and selection of mitigation. Where a dwelling in NCA 2, 4, or 5 has been identified for noise mitigation, building treatments that allow bedroom windows to remain closed and improve the noise reduction of L_{Amax} levels across the facade should be considered a priority.

Table 13 Measured maximum noise levels at night

| Receiver | | | Measured 2014 | | | | | | | | | |
|----------|---------------------|---------------------------------------|-------------------------|-----|--|-----|-----------------------------------|-----|------------------------------------|-----|---|--|
| ID | Address | Approx. distance to existing road (m) | L _{Amax} Range | | L _{Amax} - L _{Aeq} Range | | L _{Amax} events Per hour | | L _{Amax} Events per Night | | Average No. of L _{Amax} Events per night | |
| | | | Min | Max | Min | Max | Min | Max | Min | Max | | |
| M1 | 32 Memorial Avenue | 36 | 65 | 86 | 15 | 24 | 0 | 6 | 7 | 22 | 12 | |
| M2 | 25 Memorial Avenue | 8 | 73 | 91 | 15 | 31 | 0 | 22 | 33 | 79 | 54 | |
| M3 | 19 Memorial Avenue | 15 | 71 | 91 | 15 | 28 | 0 | 23 | 19 | 88 | 48 | |
| M4 | 16 Gorman Avenue | 52 | 65 | 78 | 15 | 24 | 0 | 6 | 1 | 12 | 5 | |
| M5 | 8 Windsor Road | 18 | 68 | 91 | 15 | 31 | 0 | 13 | 22 | 48 | 35 | |
| M6 | 10 Rothwell Circuit | 25 | 67 | 83 | 15 | 28 | 0 | 8 | 8 | 28 | 18 | |

Notes:

1. Night-time L_{Amax} values are shown only where L_{Amax} > 65dB(A) and where L_{Amax} - L_{Aeq} ≥ 15dB(A)

6 Construction Noise Assessment

The NSW *Interim Construction Noise Guideline* (ICNG, 2009) provides guidelines for assessing noise generated during the construction phase of developments. The ICNG provides two methods for assessment of construction noise, being either a quantitative or a qualitative assessment.

A quantitative assessment is recommended for major construction projects of significant duration, and involves the measurement and prediction of noise levels, and assessment against set criteria. A qualitative assessment is recommended for small projects with duration of less than three weeks and focuses on minimising noise disturbance through the implementation of reasonable and feasible work practices, and community notification.

Given the scale of the construction works for the proposal, a quantitative assessment method has been used for this assessment.

6.1 Construction noise objectives

6.1.1 Construction noise management levels at residences

Construction noise management levels are determined by the NSW 'Interim Construction Noise Guideline'. Table 14 below (reproduced from Table 2 of the ICNG) sets out the noise management levels (NMLs) for residences and how they are to be applied.

The guideline intends to provide respite for residents exposed to excessive construction noise outside the recommended standard hours whilst allowing construction during the recommended standard hours without undue constraints.

The rating background level (RBL) is used when determining the NML. The RBL is the overall single-figure background noise level measured in each relevant assessment period (during or outside the recommended standard hours).

Table 14 Noise management levels at residential receivers

| Time of day | Management level <small>L_{Aeq} (15 min)</small> | How to apply |
|---|---|--|
| Recommended standard hours: Monday to Friday 7 am to 6 pm Saturday 8 am to 1 pm No work on Sundays or public holidays | Noise affected RBL + 10dB(A) | The noise affected level represents the point above which there may be some community reaction to noise. Where the predicted or measured LAeq (15 min) is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level. The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details. |

| Time of day | Management level $L_{Aeq(15\text{ min})}$ | How to apply |
|------------------------------------|--|---|
| | Highly noise affected 75dB(A) | The highly noise affected level represents the point above which there may be strong community reaction to noise. Where noise is above this level, the relevant authority (consent, determining or regulatory) may require respite periods by restricting the hours that the very noisy activities can occur, taking into account: <ol style="list-style-type: none"> times identified by the community when they are less sensitive to noise (such as before and after school for works near schools, or mid-morning or mid-afternoon for works near residences) if the community is prepared to accept a longer period of construction in exchange for restrictions on construction times. |
| Outside recommended standard hours | Noise affected RBL + 5dB(A) | A strong justification would typically be required for works outside the recommended standard hours. The proponent should apply all feasible and reasonable work practices to meet the noise affected level. Where all feasible and reasonable practices have been applied and noise is more than 5dB(A) above the noise affected level, the proponent should negotiate with the community. For guidance on negotiating agreements see section 7.2.2 of the ICNG. |

The NML represents the point above which there may be some community reaction to noise. Residential receivers are considered 'noise affected' where construction noise levels are greater than the NML. Where predicted and/or measured construction noise levels exceed the NML, all feasible and reasonable work practices will be applied to meet the management levels.

During standard construction hours a highly affected noise objective of $L_{Aeq(15\text{ min})}$ 75 dB(A) applies at all receivers.

Table 15 identifies the adopted NMLs for receivers within the various NCA's along the route. The NMLs for each NCA are derived from the RBL results of the nearest long term noise monitoring location.

Table 15 Construction noise management levels at residential receivers

| NCA | L_{A90} Rating Background Level (RBL) | | | Noise Management Level $L_{Aeq(15\text{ min})}$ ¹ | | |
|-----|---|---------|-------|--|---------|-------|
| | Day | Evening | Night | Day | Evening | Night |
| 1 | 49 | 46 | 37 | 59 | 51 | 42 |
| 2 | 49 | 46 | 37 | 59 | 51 | 42 |
| 3 | 53 | 50 | 41 | 63 | 55 | 46 |
| 4 | 53 | 50 | 41 | 63 | 55 | 46 |
| 5 | 49 | 50 | 44 | 59 | 55 | 49 |
| 6 | 49 | 50 | 44 | 59 | 55 | 49 |
| 7 | 55 | 50 | 34 | 65 | 55 | 39 |
| 8 | 49 | 48 | 38 | 59 | 53 | 43 |

Notes: 1. Noise levels apply at the property boundary that is most exposed to construction noise, and at a height of 1.5m above ground level. If the property boundary is more than 30m from the residence, the location for measuring or predicting noise levels is at the most noise-affected point within 30m of the residence. Noise levels may be higher at upper floors of the noise affected residence.

6.1.2 Construction noise management levels at other sensitive land uses

Table 16 sets out the ICNG noise management levels for other noise sensitive receiver locations. Other sensitive receivers that have been identified along the project construction route are summarised in Table 17.

Table 16 Noise management levels at other noise sensitive land uses

| Land use | Where Objective Applies | Management level $L_{Aeq,15min}$ |
|--|--|---|
| Classrooms at schools and other educational institutions | Internal noise level | 45 dB(A) |
| Hospital wards and operating theatres | Internal noise level | 45 dB(A) |
| Places of worship | Internal noise level | 45 dB(A) |
| Active recreation areas | External noise level | 65 dB(A) |
| Passive recreation areas | External noise level | 60 dB(A) |
| Community centres | Depends on the intended use of the centre. | Refer to the 'maximum' internal levels in AS2107 for specific uses. |
| Commercial premises | External noise level | 70 dB(A) |
| Industrial premises | External noise level | 75 dB(A) |

Notes:

- Noise management levels apply when receiver areas are in use only.

Table 17 Other sensitive receivers

| ID | NCA | Address | Receiver | Receiver Type |
|-----|-----|-----------------------------|--|---------------------------|
| S1 | 1 | 43 Memorial Avenue | Industrial Building | Industrial |
| S2 | 1 | 24 Arnold Avenue | Gracelands Early Education Centre | Classroom |
| S3 | 2 | 8 Free Settlers Dr | The Gracewood Community Retirement Village | Commercial (ground floor) |
| S4 | 3 | 15-17 Memorial Avenue | The Hills Clinic | Hospital ward |
| S5 | 6 | Memorial Avenue | Kellyville Cricket Club | Active recreation |
| S6 | 7 | 3-5 President Road | Kellyville Preschool Kindergarten | Classroom |
| S7 | 7 | 3 Windsor Road | Repco | Commercial |
| S8 | 7 | 5 Windsor Road | Caltex | Commercial |
| S9 | 8 | 6 Rothwell Circuit | Fit Kidz Day Care Centre | Classroom |
| S10 | 8 | Lot 4 1190 Old Windsor Road | Outback Steakhouse | Commercial |

For schools, hospitals and places of worship where an internal management level of 45dB(A) is specified, the equivalent external management level is 55dB(A) assuming 10dB(A) noise reduction through an open window.

As identified for residential receivers, at all other noise sensitive receivers a highly affected noise objective of $L_{Aeq(15min)}$ 75dB(A) shall apply. Construction activity noise above this level would be managed as described in Table 14.

6.1.3 Sleep disturbance

The ICNG recommends that where construction works are planned to extend over two or more consecutive nights, the assessment should consider maximum noise levels and the extent and frequency of maximum noise level events exceeding the RBL. The ICNG (p15) refers to the discussion on sleep disturbance provided in the NSW Environmental Criteria for Road Traffic Noise (ECRTN, Environment Protection Authority 1999, pp 25-30). The ECRTN presents a summary of the findings from all the research conducted world-wide on sleep disturbance, and after consideration of all the information presented it concludes the following:

- Maximum internal noise levels below 50-55dB(A) are unlikely to cause awakening reactions.
- One or two events per night with maximum internal noise levels of 65-70dB(A) are not likely to affect health and wellbeing. (ECRTN p29)

Based on the above, an upper external noise limit of L_{Amax} 65dB(A) is set as a NML for the purpose of this construction noise assessment.

6.2 Construction activities

Whilst construction work would be carried out during daytime hours whenever practicable, due to high traffic volumes on Memorial Avenue during the day, it is likely that much of the construction work will need to be carried out during the evening and night.

The following table lists the general construction activities and the associated major plant and equipment likely to be used by the contractor to carry out the necessary construction work for this project.

Table 18 Construction activity & equipment list

| Activity | Plant/ Equipment |
|---------------------------------------|--|
| Site clearance | Chain Saw Tracked Excavator Dump Truck Bull Dozer |
| Utility, property, service adjustment | Tracked Excavator Dump Truck Mobile Crane |
| Pavement and kerb demolition | Milling Machine Tracked Excavator Tracked Excavator (with Rock Breaker) Front end loader Backhoe Dump Truck |

| Activity | Plant/ Equipment |
|--|---|
| Installation of drainage pits & lines | Tracked Excavator Drilling Rig Dump Truck Front end loader Backhoe |
| Supply, lay and compact road fill, sub base and surface Supply, lay and compact footpath, kerb and gutter | Mobile Crane Concrete Truck Concrete pump Grader Pavement Laying Machine Roller Generator |
| Traffic signals, signposting and line marking | Mobile Crane Truck |

6.3 Construction noise sources

The following table lists the sound power levels of the plant and equipment likely to be used by the contractor to carry out the necessary construction work for this project.

Table 19 Typical construction equipment & sound power levels

| Plant Description | Sound Power Levels, dB(A) | |
|-------------------------|---------------------------|-------------------|
| | L _{Aeq} | L _{Amax} |
| Rock Breaker | 117 | 125 |
| Concrete Saw | 115 | 118 |
| Mobile Crane | 110 | 116 |
| Compactor | 110 | 116 |
| Front End Loader | 110 | 112 |
| Pavement Laying Machine | 109 | 118 |
| Bulldozer | 109 | 115 |
| Tracked Excavator | 107 | 115 |
| Grader | 107 | 115 |
| Road Milling Machine | 108 | 111 |
| Concrete Truck | 106 | 110 |
| Dump Trucks | 105 | 110 |
| Rollers | 104 | 110 |
| Truck (>20tonne) | 103 | 106 |
| Concrete Pump | 102 | 104 |
| Backhoe | 101 | 108 |
| Power Generator | 100 | 106 |

The sound power levels for the majority of activities presented in the above table are based on maximum levels given in Table A1 of Australian Standard 2436 - 2010 "Guide to Noise Control on Construction, Demolition and Maintenance Sites", ICNG, information from past projects and information held in the Renzo Tonin & Associates library files.

6.4 Predicted noise levels

Noise emissions were determined by modelling the noise sources, receiver locations, and operating activities as outlined above. Predicted noise levels assume all listed equipment for individual tasks are operating concurrently. This approach is conservative and has been adopted to ensure the full extent of possible noise impacts are assessed (what might occur in the worst-case). Therefore, the noise generated during construction works will generally be below the predictions presented below.

All construction activities are assessed against all time periods to give an indication of the potential noise impacts should construction occur out of hours.

Table 20 presents a summary of the predicted L_{Aeq} noise levels for each activity associated with the construction phase. The assessment point is at the boundary for residential receivers and at the most affected occupied point of the premises (typically at the front facade) for other sensitive receivers.

Table 21 presents a summary of the predicted L_{Amax} noise levels during potential night time works for residential receivers. The assessment point is at the building facade assuming a bedroom window.

Table 20 Predicted L_{Aeq} construction noise levels

| Activity | NCA 1 | NCA 2 | NCA 3 | NCA 4 | NCA 5 | NCA 6 | NCA 7 | NCA 8 | S1 | S2 | S3 | S4 | S5 | S6 | S7 | S8 | S9 | S10 |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----|-----------|----|-----------|----|----|-----------|-----------|-----------|-----------|
| NML Day | 59 | 59 | 63 | 63 | 59 | 59 | 65 | 59 | 75 | 55 | 70 | 55 | 65 | 55 | 70 | 70 | 55 | 70 |
| Evening | 51 | 51 | 55 | 55 | 55 | 55 | 55 | 53 | 75 | 55 | 70 | 55 | 65 | 55 | 70 | 70 | 55 | 70 |
| Night | 42 | 42 | 46 | 46 | 49 | 49 | 39 | 43 | 75 | 55 | 70 | 55 | 65 | 55 | 70 | 70 | 55 | 70 |
| Site clearance | 75 | 83 | 85 | 72 | 74 | 79 | 74 | 76 | 56 | 82 | 59 | 71 | 59 | 56 | 75 | 73 | 75 | 75 |
| Site Clearance (without chainsaw) | 70 | 78 | 80 | 67 | 69 | 74 | 69 | 71 | 51 | 77 | 54 | 66 | 54 | 51 | 70 | 68 | 70 | 70 |
| Utility & service adjustment | 70 | 79 | 80 | 67 | 70 | 75 | 70 | 72 | 52 | 77 | 54 | 66 | 55 | 52 | 70 | 69 | 71 | 70 |
| Pavement & kerb demolition | 77 | 86 | 87 | 74 | 77 | 82 | 77 | 79 | 59 | 84 | 61 | 73 | 62 | 59 | 77 | 76 | 78 | 77 |
| Pavement & kerb demolition (without rock breaker) | 73 | 82 | 83 | 70 | 73 | 78 | 73 | 75 | 55 | 80 | 57 | 69 | 58 | 55 | 73 | 72 | 74 | 73 |
| Drainage pits & lines | 73 | 81 | 83 | 70 | 73 | 78 | 73 | 74 | 55 | 80 | 57 | 69 | 58 | 54 | 73 | 71 | 73 | 73 |
| Supply, lay & compact road & footpath | 73 | 81 | 83 | 70 | 72 | 77 | 72 | 74 | 54 | 80 | 57 | 69 | 58 | 54 | 73 | 71 | 73 | 73 |
| Traffic signals, signposting & line marking | 68 | 77 | 79 | 65 | 68 | 73 | 68 | 70 | 50 | 75 | 53 | 64 | 53 | 50 | 68 | 67 | 69 | 68 |

Notes:

Bold font represents exceedance of greater than 10dB(A) above the daytime NML (20dB(A) above daytime RBL).

Red font represents exceedance of the 75dB(A) highly affected noise objective.

Table 21 Predicted L_{Amax} Construction Noise Levels for Night Works (Residential)

| Activity | NCA 1 | NCA 2 | NCA 3 | NCA 4 | NCA 5 | NCA 6 | NCA 7 | NCA 8 |
|-------------------------------------|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Sleep Disturbance Upper Limit Night | 65 | 65 | 65 | 65 | 65 | 65 | 65 | 65 |
| Site clearance | 74 | 71 | 77 | 72 | 73 | 75 | 75 | 77 |
| Site Clearance (without chainsaw) | 74 | 71 | 77 | 72 | 73 | 75 | 75 | 77 |
| Utility & service adjustment | 71 | 68 | 75 | 69 | 70 | 73 | 73 | 75 |
| Earthworks Phase | Pavement & kerb demolition | 86 | 83 | 90 | 84 | 85 | 88 | 90 |
| | Pavement & kerb demolition (without rock breaker) | 74 | 71 | 78 | 72 | 73 | 76 | 78 |
| | Drainage pits & lines | 80 | 77 | 84 | 78 | 79 | 81 | 83 |
| | Supply, lay & compact road & footpath | 71 | 68 | 74 | 69 | 70 | 72 | 74 |
| | Traffic signals | 72 | 69 | 75 | 69 | 70 | 73 | 73 |
| Line Marking | 71 | 68 | 75 | 69 | 70 | 73 | 73 | 75 |

Notes:

1. **Bold** font represents exceedance of night time sleep disturbance upper limit.
2. Noise level predictions for L_{Amax} sleep disturbance have been made at the building facade

Construction phase noise levels at residences are expected to exceed the NMLs in most NCAs, and with the exception of NCA 4, residences may also be “highly noise affected”. Other sensitive receivers are expected to be slightly less affected than residences as they generally only operate during the day and are often set back further from the road. Nonetheless Gracelands Early Education Centre (S2) and Fit Kidz Day Care Centre (S9) may be “highly noise affected”.

The predictions for L_{Amax} noise levels at night are above the goals for residences which highlights the potential for sleep disturbance during night works. Noise mitigation measures are discussed in Section 6.5.

6.5 Construction noise mitigation options

The mitigation of construction noise would occur through the preparation and implementation of a Construction Noise and Vibration Management Plan (CNVMP). The following recommendations provide in-principle noise control solutions available for use in the CNVMP. Where actual construction activities differ from those assessed in this report, more detailed design of noise control measures may be required once specific items of plant and construction methods have been chosen and assessed on site.

6.5.1 Standard noise and vibration management measures

Table 22 sets out standard noise and vibration mitigation, as outlined in the ENMM (Section 5), to be implemented in the CNVMP as required.

Table 22 Standard mitigation measures to reduce construction noise and vibration

| Action Required | Applies to | Details |
|---|--|--|
| Management Measures | | |
| Implement community consultation measures – inform community of construction activity and potential impacts | Airborne noise Ground-borne vibration | Incorporate into Community Liaison Plan |
| Site inductions | Airborne noise Ground-borne vibration | All employees, contractors and subcontractors are to receive a Project induction. The environmental component may be covered in toolboxes and should include: <ul style="list-style-type: none"> • all relevant project specific and standard noise and vibration mitigation measures; • relevant licence and approval conditions; • permissible hours of work; • any limitations on high noise generating activities; • location of nearest sensitive receivers; • construction employee parking areas; • designated loading/unloading areas and procedures; • site opening/closing times (including deliveries); and • environmental incident procedures. |
| Behavioural practices | Airborne noise | No swearing or unnecessary shouting or loud stereos/radios on site. No dropping of materials from height where practicable, throwing of metal items and slamming of doors. |
| Monitoring | Airborne noise Ground-borne vibration | Monitoring procedures and requirements to be specified in CNVMP |
| Site specific attended vibration measurements | Ground-borne Vibration | Monitoring procedures and requirements to be specified in CNVMP |
| Source Controls | | |
| Construction hours and scheduling | Airborne noise Ground-borne vibration | Where feasible and reasonable, construction would be carried out during the standard daytime working hours. Work generating high noise and/or vibration levels would be scheduled during less sensitive time periods if practicable. |
| Construction respite period | Airborne noise Ground-borne vibration | Noise and vibration generating activities with impulsive, tonal or low frequency characteristics (such as jack hammering, rock breaking, rock hammering, vibratory rolling) would only be carried out: <ul style="list-style-type: none"> • in continuous blocks, up to but not exceeding 3 hours each; and • with a minimum respite period of one hour between each block. |
| Equipment selection | Airborne noise Ground-borne vibration | Use quieter and less noise/ vibration emitting construction methods where feasible and reasonable. Where vibration intensive equipment is used within the minimum working distances identified, determine whether alternative construction methodology or less vibration intensive equipment can be used, e.g. when piling is required, use bored piles rather than impact-driven piles. |
| Maximum noise levels | Airborne noise | All plant and equipment to be appropriately maintained to ensure optimum running conditions, with periodic monitoring. |

| Action Required | Applies to | Details |
|---|--|--|
| Use and siting of plant | Airborne noise Ground-borne vibration | Simultaneous operation of noisy plant within discernible range of a sensitive receiver is to be limited/ avoided where possible. The offset distance between noisy plant and adjacent sensitive receivers is to be maximised where practicable. Plant used intermittently to be throttled down or shut down when not in use where practicable. Noise-emitting plant to be directed away from sensitive receivers where possible. |
| Plan worksites and activities to minimise noise and vibration | Airborne noise Ground-borne vibration | Plan traffic flow, parking and loading/unloading areas to minimise reversing movements within the site. |
| Non-tonal reversing alarms | Airborne noise | Non-tonal reversing beepers (or an equivalent mechanism) should be fitted and used on all construction vehicles and mobile plant regularly used on site for periods of over two months where practicable. |
| Minimise disturbance arising from delivery of goods to construction sites | Airborne noise | Ensure all deliveries occur during standard construction hours. |
| Path Controls | | |
| Shield sensitive receivers from noisy activities | Airborne noise | Where reasonable and feasible, use structures to shield residential receivers from noise such as: <ul style="list-style-type: none"> • site shed placement; • earth bunds; • temporary noise screens (where practicable) • enclosures to shield fixed noise sources such as pumps, compressors, fans etc screens (where practicable); and • consideration of site topography when siting plant. |

6.5.2 Additional airborne noise mitigation measures

Additional mitigation measures to be considered when preparing the CNVMP include:

- **Phone calls:** phone calls detailing relevant information would be made to identified/ affected stakeholders;
- **Letter box drops:** used to disseminate project information to interested stakeholders and/or to provide advanced warning of high noise impact activities during the day or potentially audible OOHW activities (can also be emailed);
- **Individual briefings:** used to inform stakeholders about the impacts of high noise activities and mitigation measures that will be implemented;
- **Project specific respite offer:** residents subjected to lengthy periods of noise or vibration may be eligible for a Project specific respite offer (e.g. pre-purchased movie tickets);
- **Specific notifications:** letterbox dropped, emailed or hand delivered to advise stakeholders that construction activities are likely to exceed the noise objectives;
- **Monitoring:** noise or vibration monitoring offered to stakeholders likely to incur noise and/or vibration levels above the applicable levels; and

- **Alternative accommodation:** offered to residents living in close proximity to Project construction works that are likely to incur noise levels at night that are significantly above the applicable levels in Section 6.1.1.

Table 23 below can be used to advise the appropriate application of additional noise mitigation. Procedures for noise monitoring and complaints handling would be defined in the CNVMP.

Table 23 Additional airborne noise mitigation measures

| Time Period | | Mitigation measures/predicted L _{Aeq} (15min) noise level above RBL | | | |
|------------------|--|--|-----------------------------------|---|--|
| | | 0 to 10 dB(A) Noticeable | 10 to 20 dB(A) Clearly audible | 20 to 30 dB(A) Moderately intrusive | > 30 dB(A) Highly intrusive |
| Standard | Mon-Fri (7am-6pm) Sat (8am-1pm) Sun/ Public Hol (Nil) | - | - | Letterbox drop, Monitoring | Letterbox drop, Monitoring |
| OOHW Period 1 | Mon-Fri (6pm-10pm) Sat (7am to 8am & 1pm-10pm) Sun/ Public Hol (8am - 6pm) | - | Letterbox Drop | Monitoring, Letterbox Drop | Monitoring, Individual Briefing, Letterbox Drop Project Specific Respite Offer, Phone Calls, Specific Notification |
| OOHW Period 2 | Mon-Fri (10pm-7am) Sat (10pm-7am) Sun/ Public Hol (6pm-8am) | Letterbox Drop | Monitoring, Letterbox Drop | Monitoring, Individual Briefing, Letterbox drop, Phone Calls, Specific Notification | Alternate Accommodation, Monitoring, Individual Briefing, Letterbox Drop, Phone Calls, Specific Notification |

Source: TCA Construction Noise Strategy, October 2010

7 Construction Vibration Assessment

7.1 Construction vibration objectives

7.1.1 Disturbance to buildings occupants

Assessment of potential disturbance from vibration on human occupants of buildings is made in accordance with the DECC 'Assessing Vibration; a technical guideline' (DECC, 2006). The guideline provides criteria which are based on the British Standard BS 6472-1992 'Evaluation of human exposure to vibration in buildings (1-80Hz)'. Sources of vibration are defined as either 'Continuous', 'Impulsive' or 'Intermittent'. Table 24 provides definitions and examples of each type of vibration.

Vibration sources are defined as Continuous, Impulsive or Intermittent. Table 24 provides a definition and examples of each type of vibration.

Table 24 Types of vibration

| Type of vibration | Definition | Examples |
|------------------------|--|---|
| Continuous vibration | Continues uninterrupted for a defined period (usually throughout the day-time and/or night-time) | Machinery, steady road traffic, continuous construction activity (such as tunnel boring machinery). |
| Impulsive vibration | A rapid build-up to a peak followed by a damped decay that may or may not involve several cycles of vibration (depending on frequency and damping). It can also consist of a sudden application of several cycles at approximately the same amplitude, providing that the duration is short, typically less than 2 seconds | Infrequent: Activities that create up to 3 distinct vibration events in an assessment period, e.g. occasional dropping of heavy equipment, occasional loading and unloading. |
| Intermittent vibration | Can be defined as interrupted periods of continuous or repeated periods of impulsive vibration that varies significantly in magnitude | Trains, nearby intermittent construction activity, passing heavy vehicles, forging machines, impact pile driving, jack hammers. Where the number of vibration events in an assessment period is three or fewer, this would be assessed against impulsive vibration criteria. |

Source: Assessing Vibration; a technical guideline, Department of Environment & Climate Change, 2006

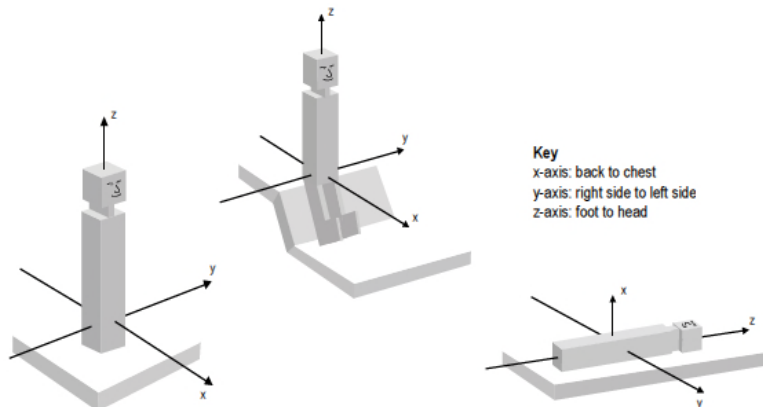
The vibration criteria are defined as a single weighted root mean square (rms) acceleration source level in each orthogonal axis. Section 2.3 of the guideline states:

'Evidence from research suggests that there are summation effects for vibrations at different frequencies. Therefore, for evaluation of vibration in relation to annoyance and comfort, overall weighted rms acceleration values of the vibration in each orthogonal axis are preferred (BS 6472).'

When applying the criteria, it is important to note that the three directional axes are referenced to the human body, i.e. x-axis (back to chest), y-axis (right side to left side) or z-axis (foot to head). Vibration may enter the body along different orthogonal axes and affect it in different ways. Therefore, application of the criteria requires consideration of the position of the people being assessed, as illustrated in Figure

3. For example, vibration measured in the horizontal plane is compared with x- and y-axis criteria if the concern is for people in an upright position, or with the y- and z- axis criteria if the concern is for people in the lateral position.

Figure 3 Orthogonal axes for human exposure to vibration



The preferred and maximum values for continuous and impulsive vibration are defined in Table 2.2 of the guideline and are reproduced in Table 25.

Table 25 Preferred and maximum levels for human comfort

| Location | Assessment period ^[1] | Preferred values | | Maximum values | |
|--|----------------------------------|------------------|---------------|----------------|---------------|
| | | z-axis | x- and y-axis | z-axis | x- and y-axis |
| Continuous vibration (weighted RMS acceleration, m/s², 1-80Hz) | | | | | |
| Critical areas ^[2] | Day- or night-time | 0.005 | 0.0036 | 0.010 | 0.0072 |
| Residences | Daytime | 0.010 | 0.0071 | 0.020 | 0.014 |
| | Night-time | 0.007 | 0.005 | 0.014 | 0.010 |
| Offices, schools, educational institutions and places of worship | Day- or night-time | 0.020 | 0.014 | 0.040 | 0.028 |
| Workshops | Day- or night-time | 0.04 | 0.029 | 0.080 | 0.058 |
| Impulsive vibration (weighted RMS acceleration, m/s², 1-80Hz) | | | | | |
| Critical areas ² | Day- or night-time | 0.005 | 0.0036 | 0.010 | 0.0072 |
| Residences | Daytime | 0.30 | 0.21 | 0.60 | 0.42 |
| | Night-time | 0.10 | 0.071 | 0.20 | 0.14 |
| Offices, schools, educational institutions and places of worship | Day- or night-time | 0.64 | 0.46 | 1.28 | 0.92 |
| Workshops | Day- or night-time | 0.64 | 0.46 | 1.28 | 0.92 |
| Intermittent vibration (Vibration Dose Values, VDv, m/s^{1.75}, 1-80Hz) | | | | | |
| Critical areas ² | Day- or night-time | 0.10 | | 0.20 | |
| Residences | Daytime | 0.20 | | 0.40 | |
| | Night-time | 0.13 | | 0.26 | |

| Location | Assessment period ^[1] | Preferred values | | Maximum values | |
|--|----------------------------------|------------------|---------------|----------------|---------------|
| | | z-axis | x- and y-axis | z-axis | x- and y-axis |
| Offices, schools, educational institutions and places of worship | Day- or night-time | 0.40 | | 0.80 | |
| Workshops | Day- or night-time | 0.80 | | 1.60 | |

- Notes:
- Daytime is 7:00am to 10:00pm and night-time is 10:00pm to 7:00am
 - Examples include hospital operating theatres and precision laboratories where sensitive operations are occurring. There may be cases where sensitive equipment or delicate tasks require more stringent criteria than the human comfort criteria specify above. Stipulation of such criteria is outside the scope of their policy and other guidance documents (e.g. relevant standards) should be referred to. Source: BS 6472-1992

7.1.2 Structural damage to buildings

Safe limits for construction generated vibration have been determined using the vibration limits set out in the German Standard *DIN 4150 Part 3-1999 Structural Vibration in Buildings – Effects on Structures*.

The minimum 'safe limit' of vibration at low frequencies for commercial and industrial buildings is 20mm/s. For dwellings it is 5mm/s and for particularly sensitive structures (eg historical with preservation orders etc), it is 3mm/s. These limits increase as the frequency content of the vibration increases. These values are presented in Table 26 below and are generally recognised to be conservative.

Table 26 DIN 4150-3 Structural damage criteria

| Group | Type of Structure | Vibration Velocity, mm/s | | | |
|-------|--|-------------------------------|--------------|---------------|---------------------------------|
| | | At Foundation at Frequency of | | | Plane of Floor Uppermost Storey |
| | | 1Hz to 10Hz | 10Hz to 50Hz | 50Hz to 100Hz | All Frequencies |
| 1 | Buildings used for commercial purposes, industrial buildings and buildings of similar design | 20 | 20 to 40 | 40 to 50 | 40 |
| 2 | Dwellings and buildings of similar design and/or use | 5 | 5 to 15 | 15 to 20 | 15 |
| 3 | Structures that because of their particular sensitivity to vibration, do not correspond to those listed in Group 1 or 2 and have intrinsic value (eg buildings under a preservation order) | 3 | 3 to 8 | 8 to 10 | 8 |

7.2 Vibration sources

The vibration generated from construction works will vary depending on the level and type of activity carried out at each site during each activity.

Table 27 below identifies the dominant vibration generating plant and their typical vibration levels based on library data and measurements from past projects. Potential vibration generated to receivers for this project will be dependent on separation distances, the intervening soil and rock strata, dominant frequencies of vibration and the receiver structure.

Table 27 Typical ranges of construction plant vibration levels

| Plant vibration source | PPV Vibration (mm/s) at distance from plant | | | | | | | |
|---|---|-------|------|-------|------|------|------|-------|
| | 5m | 10m | 15m | 20m | 30m | 40m | 50m | 100m |
| Bobcat (Mustang 2054) | <1 | - | - | - | - | - | - | - |
| Compactor (852G) | 5.3 | 2.0 | 2.2 | 1.4 | <1 | - | - | - |
| Dozer (D810) (with ripper) | <2 | - | - | - | - | - | - | - |
| Drilling machine – Pneumatic (Atlas Copco (ROC 812HC 20T) | 3.2 | 1 | - | - | <0.1 | - | <0.1 | - |
| Drilling Rig – Air Trac Rotary (Ingersoll/Rand CM350) | 4.4 | 1.4 | - | - | 0.6 | - | <0.1 | - |
| Drilling Rig – Tracked (Samsung SE 240 LC3 18T) | <2 | - | - | - | - | - | - | - |
| Excavator ≤30T (travelling) | 8.0 | 3.4 | 1.6 | - | - | - | - | - |
| Excavator ≤30T (digging) | 5.8 | 4.0 | 0.0 | - | - | - | - | - |
| Excavator & Rock Hammer (20T) | 4.5 | 1.3 | - | 0.4 | 0.2 | 0.15 | - | - |
| Excavator & Rock Hammer (27T) | 10.5 | 2.5 | - | - | - | - | - | - |
| Excavator & Heavy Rock Hammer (eg 1500 kg) | 4.5 | 1.3 | - | 0.4 | 0.2 | 0.15 | 0.02 | - |
| Grader (20 tonne) | 2.0 | - | 0.2 | - | - | - | - | - |
| Jack hammers | 2.0 | 1.0 | 0.2 | 0.1 | 0.0 | 0.1 | - | - |
| Piling Rig – Bored (Soilmec 60T) * | 2.4 | 0.2 | 0.2 | - | - | - | - | - |
| Piling Rig – Vibratory (Mertz M26) | 29-36 | 16-40 | 7-17 | 19-22 | 2-13 | 1-15 | 1-7 | 1-3.5 |
| Ripper (D10 D375A-2) | 1-2 | - | - | - | - | - | - | - |
| Rocksaw (Komatsu AVANCE PC300) | 1.5 | - | - | - | - | - | - | - |
| Timber Pole Drill | 3.2 | 1 | - | - | - | <0.2 | - | - |
| Truck & Trailer (45T net) | 14.5 | 10.3 | 3.4 | - | - | - | - | - |
| Vibratory Roller ≤ 3T (Smooth Drum)# | 8.7 | 5.4 | - | - | - | - | - | - |
| Vibratory Roller ≤ 8T (Pad Footed)# | 9-12 | 3.1 | - | - | - | - | - | - |
| Vibratory Roller ≤ 17T (Smooth Drum) | 24.5 | 8.9 | 4.2 | - | - | - | - | - |
| Vibratory Roller ≤ 17T (Pad Footed) | 15.1 | 10.3 | 3.2 | - | - | - | - | - |

Notes: Source – Renzo Tonin & Associates database

* data based on sand/clay soil conditions

Monitor mounted on plate in sands

Site specific buffer distances for vibration significant plant items (e.g. vibratory rollers, compactors, pile boring, pole drilling) must be measured on site. Unlike noise, vibration can't be 'predicted'. There are many variables from site to site, for example soil type and conditions; sub surface rock; building types and foundations; and actual plant on site. The data relied upon in this assessment (tabulated above) is taken from a database of vibration levels measured at various sites or obtained from other sources (e.g. BS5228-2:2009). They are not specific to this project.

7.3 Potential vibration impacts to residential and commercial uses

Based on the vibration data presented in Section 7.2 above, vibration generated by construction plant was estimated and potential vibration impacts to residences are summarised in Table 28 below.

Table 28 Potential vibration for residential properties

| NCA | Approximate distance from works | Assessment of potential vibration impacts | |
|-----|---------------------------------|---|--|
| | | Structural Damage | Human Disturbance |
| 1 | 15 - 20m | Low probability of structural damage from vibratory rolling. Very Low probability of structural damage from other activities. | Medium probability of adverse comment as a result of vibratory rolling. |
| 2 | 30 - 35m | Very Low probability of structural damage from vibratory rolling. Very Low probability of structural damage from other activities. | Low probability of adverse comment as a result of vibratory rolling. |
| 3 | 15 - 20m | Low probability of structural damage from vibratory rolling. Very Low probability of structural damage from other activities. | Medium probability of adverse comment as a result of vibratory rolling. |
| 4 | 20 - 25 m | Low probability of structural damage from vibratory rolling. Very Low probability of structural damage from other activities. | Medium probability of adverse comment as a result of vibratory rolling. |
| 5 | 15 – 20m | Low probability of structural damage from vibratory rolling. Very Low probability of structural damage from other activities. | Medium probability of adverse comment as a result of vibratory rolling. |
| 6 | 5-10m | High probability of structural damage from vibratory rolling. Medium probability of structural damage from other activities. | High probability of adverse comment as a result of vibratory rolling. |
| 7 | 5-10m | High probability of structural damage from vibratory rolling. Medium probability of structural damage from other activities. | High probability of adverse comment as a result of vibratory rolling. |
| 8 | 10-15m | Medium probability of structural damage from vibratory rolling. Low probability of structural damage from other activities. | High probability of adverse comment as a result of vibratory rolling. |

Recommendations for reducing potential vibration impacts, including minimum working distances for construction plant are provided in Section 7.4 below.

Bridge Piling

It is unknown at this stage whether piling will be required for construction of the bridge over Strangers Creek, or what type if piling might be employed. However the nearest residences are more than 50m from where piling would occur and therefore it is very unlikely that vibration from piling would be an issue. Use of bored piling over impact or vibratory piling would minimise any impacts.

7.4 Vibration mitigation

Prior to construction commencement, the management of potential vibration impacts can be as follows:

- A CNVMP shall be prepared containing a management procedure to deal with vibration complaints. Each complaint would be investigated and where vibration levels are established as exceeding the set limits, appropriate amelioration measures would be put in place to mitigate future occurrences.
- Implement time restrictions for the most excessive vibration activities. Time restrictions can be negotiated with affected receivers.
- Carry out vibration testing of actual equipment on site prior to their commencement of operation to determine acceptable buffer distances to the nearest affected receiver locations.
- Notification by letterbox to the community advising of times and duration of high vibration activities such as rock hammering, vibratory rolling or piling.
- Conduct dilapidation surveys of any building within 50m of where rock hammering, vibratory rolling or piling is to occur.

During construction, where a reduction in vibration levels is required, the following mitigation measures are generally available:

- Increase the distance between the vibration source and receiver.
- Substitute the vibration source with a smaller capacity, less vibration intensive machine.
- Use an alternative construction method.

Based on vibration measurements from past projects and library information, Table 29 presents generic recommended minimum working distances for high vibration generating plant. However only site specific buffer distances should be relied upon, and these can be determined once vibration emission levels are measured from each plant item prior to the commencement of their regular use on site.

Table 29 Recommended minimum working distances for vibration intensive plant

| Plant item | Rating / description | Minimum working distance | |
|-------------------------------|-----------------------------------|--------------------------|----------------|
| | | Cosmetic damage | Human response |
| Vibratory Roller ¹ | < 50 kN (Typically 1-2 tonnes) | 5 m | 15m – 20 m |
| | < 100 kN (Typically 2-4 tonnes) | 6 m | 20 m |
| | < 200 kN (Typically 4-6 tonnes) | 12 m | 40 m |
| | < 300 kN (Typically 7-13 tonnes) | 15 m | 100 m |
| | > 300 kN (Typically 13-18 tonnes) | 20 m | 100 m |
| | > 300 kN (Typically > 18 tonnes) | 25 m | 100 m |
| Compactors ² | - | 15 m | 100 m |
| Dozer ¹ | (D810) with ripper | 2 m (nominal) | 10 m |

| Plant item | Rating / description | Minimum working distance | |
|--------------------------------------|----------------------------------|--------------------------|------------------------------|
| | | Cosmetic damage | Human response |
| Excavators ² | < 30 Tonne (travelling/ digging) | 10 m | 15 m |
| Grader ¹ | <= 20 tonne | 2 m (nominal) | 10 m |
| Loaders ² | - | - | 5 m |
| Small Hydraulic Hammer ² | 300kg (5-12 tonne excavator) | 2 m | 7 m |
| Medium Hydraulic Hammer ² | 900kg (12-18 tonne excavator) | 7 m | 23 m |
| Large Hydraulic Hammer ² | 1600kg (18-34 tonne excavator) | 22 m | 73 m |
| Jackhammer ² | Hand held | 1 m (nominal) | Avoid contact with structure |
| Truck Movements ² | - | - | 10 m |

Notes: 1. TCA Construction Noise Strategy (Rail Projects) November 2011
2. Renzo Tonin & Associates project files, databases & library

8 Conclusion

Renzo Tonin & Associates have completed a noise and vibration assessment of the proposed upgrade of Memorial Avenue, between Old Windsor Road and Windsor Road, Kellyville. Noise from the operation of the upgraded road has been assessed, along with noise and vibration associated with the project construction activities.

The findings of this study are:

Traffic noise assessment

- The increase in noise levels as a result of the road widening is more than 2dB(A) in some areas along the road corridor.
- Design year noise levels are predicted to be acute at 120 properties.
- There are several residential subdivisions that were approved after the road upgrade was proposed, and noise mitigation for these recent developments lies with the developer. These properties are not considered for noise treatment as part of this project.
- 52 properties have been identified for further consideration of noise mitigation.

Construction noise and vibration assessment

- Construction noise is likely to exceed the construction noise management levels. Impacts will be greatest during any night time work. All reasonable and feasible noise mitigation would be applied during the construction phase. Possible noise mitigation measures and their effectiveness have been discussed.
- The probability of structural damage during construction is generally assessed as being low, although there is medium to high probability for residences within 10m of the construction zone. There is also a medium to high probability of adverse comment from the nearest receivers for felt vibration. Vibration mitigation and management measures have been provided.

9 References

1. *NSW Road Noise Policy* (NSW DECCW, March 2011)
2. *RTA Environmental Noise Management Manual* (RTA, December 2001)
3. *NSW Interim Construction Noise Guideline* (DECC, 2009)
4. *Assessing Vibration: A Technical Guideline* (DECC, 2006)
5. British Standard 6472-1992, *Evaluation of human exposure to vibration in buildings (1-80Hz)*
6. German Standard DIN 4150 – Part 3, *Structural vibration in buildings - Effects on Structures*

APPENDIX A Glossary of terminology

The following is a brief description of the technical terms used to describe noise to assist in understanding the technical issues presented.

| | |
|--------------------|--|
| Adverse weather | Weather effects that enhance noise (that is, wind and temperature inversions) that occur at a site for a significant period of time (that is, wind occurring more than 30% of the time in any assessment period in any season and/or temperature inversions occurring more than 30% of the nights in winter). |
| Ambient noise | The all-encompassing noise associated within a given environment at a given time, usually composed of sound from all sources near and far. |
| Assessment period | The period in a day over which assessments are made. |
| Assessment point | A point at which noise measurements are taken or estimated. A point at which noise measurements are taken or estimated. |
| Background noise | Background noise is the term used to describe the underlying level of noise present in the ambient noise, measured in the absence of the noise under investigation, when extraneous noise is removed. It is described as the average of the minimum noise levels measured on a sound level meter and is measured statistically as the A-weighted noise level exceeded for ninety percent of a sample period. This is represented as the L90 noise level (see below). |
| Decibel [dB] | The units that sound is measured in. The following are examples of the decibel readings of every day sounds: 0dB The faintest sound we can hear 30dB A quiet library or in a quiet location in the country 45dB Typical office space. Ambience in the city at night 60dB CBD mall at lunch time 70dB The sound of a car passing on the street 80dB Loud music played at home 90dB The sound of a truck passing on the street 100dB The sound of a rock band 115dB Limit of sound permitted in industry 120dB Deafening |
| dB(A) | A-weighted decibels. The ear is not as effective in hearing low frequency sounds as it is hearing high frequency sounds. That is, low frequency sounds of the same dB level are not heard as loud as high frequency sounds. The sound level meter replicates the human response of the ear by using an electronic filter which is called the "A" filter. A sound level measured with this filter switched on is denoted as dB(A). Practically all noise is measured using the A filter. |
| Frequency | Frequency is synonymous to pitch. Sounds have a pitch which is peculiar to the nature of the sound generator. For example, the sound of a tiny bell has a high pitch and the sound of a bass drum has a low pitch. Frequency or pitch can be measured on a scale in units of Hertz or Hz. |
| Impulsive noise | Having a high peak of short duration or a sequence of such peaks. A sequence of impulses in rapid succession is termed repetitive impulsive noise. |
| Intermittent noise | The level suddenly drops to that of the background noise several times during the period of observation. The time during which the noise remains at levels different from that of the ambient is one second or more. |
| L _{Max} | The maximum sound pressure level measured over a given period. |
| L _{Min} | The minimum sound pressure level measured over a given period. |
| L ₁ | The sound pressure level that is exceeded for 1% of the time for which the given sound is measured. |
| L ₁₀ | The sound pressure level that is exceeded for 10% of the time for which the given sound is measured. |

| | |
|----------------------|--|
| L ₉₀ | The level of noise exceeded for 90% of the time. The bottom 10% of the sample is the L90 noise level expressed in units of dB(A). |
| L _{eq} | The "equivalent noise level" is the summation of noise events and integrated over a selected period of time. |
| Reflection | Sound wave changed in direction of propagation due to a solid object obscuring its path. |
| SEL | Sound Exposure Level (SEL) is the constant sound level which, if maintained for a period of 1 second would have the same acoustic energy as the measured noise event. SEL noise measurements are useful as they can be converted to obtain Leq sound levels over any period of time and can be used for predicting noise at various locations. |
| Sound | A fluctuation of air pressure which is propagated as a wave through air. |
| Sound absorption | The ability of a material to absorb sound energy through its conversion into thermal energy. |
| Sound level meter | An instrument consisting of a microphone, amplifier and indicating device, having a declared performance and designed to measure sound pressure levels. |
| Sound pressure level | The level of noise, usually expressed in decibels, as measured by a standard sound level meter with a microphone. |
| Sound power level | Ten times the logarithm to the base 10 of the ratio of the sound power of the source to the reference sound power. |
| Tonal noise | Containing a prominent frequency and characterised by a definite pitch. |

APPENDIX B Noise Monitoring Methodology

B.1 Noise Monitoring Equipment

A noise monitor consists of a sound level meter housed inside a weather resistant enclosure. Noise levels are monitored continuously with statistical data stored in memory for every 15-minute period.

Long term noise monitoring was conducted using the following instrumentation:

| Description | Type | Octave Band Data |
|--|--------|------------------|
| RTA05 (NTi Audio XL2) | Type 1 | 1/1 octaves |
| RTA06 (NTi Audio XL2, with low noise microphone) | Type 1 | 1/1 octaves |

Notes: All meters comply with AS IEC 61672.1 2004 "Electroacoustics - Sound Level Meters" and designated either Type 1 or Type 2 as per table, and are suitable for field use.

The equipment was calibrated prior and subsequent to the measurement period using a Bruel & Kjaer Type 4230 or 4231 calibrator. No significant drift in calibration was observed.

B.2 Meteorology during Monitoring

Measurements affected by extraneous noise, wind (greater than 5m/s) or rain were excluded from the recorded data in accordance with the INP. The Bureau of Meteorology (BOM) provided meteorological data, which is considered representative of the site, for the duration of the noise monitoring period. The data was modified to allow for the height difference between the BOM weather station, where wind speed and direction is recorded at a height of 10m above ground level, and the microphone location, which is typically 1.5m above ground level (and less than 3m). The correction factor applied to the data was taken from *Australian Standard AS1170.2 1989 Section 4.2.5.1*.

B.3 Noise vs Time Graphs

Noise almost always varies with time. Noise environments can be described using various descriptors to show how a noise ranges about a level. In this report, noise values measured or referred to include the L_{10} , L_{90} , and L_{eq} levels. The statistical descriptors L_{10} and L_{90} measure the noise level exceeded for 10% and 90% of the sample measurement time. The L_{eq} level is the equivalent continuous noise level or the level averaged on an equal energy basis. The measurement sample periods are were fifteen minutes. The Noise -vs- Time graphs representing measured noise levels, as presented in this report, illustrate these concepts for the broadband results.

APPENDIX C Operation Noise Predictions (Without Mitigation)

The following table presents the detailed noise prediction results from the noise model. The results are colour coded consistent with RMS standard procedures where:

Black = Below the Road Noise Policy (RNP) base criteria

Blue = Above the RNP base criteria but not Acute

Red = Acute: $L_{Aeq,15hr}$ of 65dB(A) or greater OR $L_{Aeq,9hr}$ of 60dB(A) or greater (applies to buildings only)

Memorial Avenue - Operational Noise Assessment

Operational Noise Predictions

Date: 14/10/2014

| NCA | NCA ID | Receiver Address | Receiver Description | Facade | | Opening Year 2019 | | | | Design Year 2029 | | | | Increase (Build - No Build) | | | | RNP External Noise Criteria | | Exposed to Acute Noise Levels | | Consider further treatment? |
|-----|--------|--------------------|-----------------------------------|--------|-------------|-------------------|-------|-------|-------|------------------|-------|-------|-------|-----------------------------|-------|-------|-------|-----------------------------|-------|-------------------------------|-------|-----------------------------|
| | | | | Floor | Orientation | No Build | | Build | | No Build | | Build | | 2019 | | 2029 | | DAY | NIGHT | DAY | NIGHT | |
| | | | | | | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | | | | | |
| | | | | | | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB | dB | dB | dB | dB(A) | dB(A) | | | | | |
| 1 | 1_001 | 43 Memorial Avenue | Industrial Building | G | S | 60 | 56 | 60 | 56 | 61 | 56 | 61 | 56 | 0.1 | 0.1 | 0.1 | 0.1 | - | - | - | - | NO |
| 1 | 1_001 | 43 Memorial Avenue | Industrial Building | 1 | S | 62 | 58 | 62 | 58 | 63 | 59 | 63 | 59 | -0.1 | -0.2 | -0.2 | -0.1 | - | - | - | - | NO |
| 1 | 1_002 | 41 Memorial Avenue | | G | S | 66 | 61 | 65 | 61 | 66 | 62 | 66 | 62 | -0.3 | -0.3 | -0.3 | -0.3 | 60 | 55 | YES | YES | YES |
| 1 | 1_003 | 2 Colonial Street | Post 2008 Development (Residence) | G | W | 53 | 48 | 53 | 49 | 53 | 49 | 54 | 49 | 0.5 | 0.5 | 0.4 | 0.4 | 60 | 55 | NO | NO | NO |
| 1 | 1_003 | 2 Colonial Street | Post 2008 Development (Residence) | 1 | S | 57 | 53 | 57 | 53 | 57 | 53 | 58 | 53 | 0.2 | 0.2 | 0.3 | 0.3 | 60 | 55 | NO | NO | NO |
| 1 | 1_004 | 4 Colonial Street | Post 2008 Development (Residence) | G | S | 54 | 50 | 54 | 50 | 54 | 50 | 54 | 50 | 0.2 | 0.1 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO |
| 1 | 1_004 | 4 Colonial Street | Post 2008 Development (Residence) | 1 | S | 57 | 53 | 57 | 53 | 58 | 53 | 58 | 54 | 0.4 | 0.4 | 0.4 | 0.4 | 60 | 55 | NO | NO | NO |
| 1 | 1_005 | 10 Colonial Street | Post 2008 Development (Residence) | G | S | 56 | 51 | 56 | 51 | 56 | 52 | 56 | 52 | 0.2 | 0.2 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO |
| 1 | 1_005 | 10 Colonial Street | Post 2008 Development (Residence) | 1 | S | 57 | 53 | 57 | 53 | 57 | 53 | 58 | 53 | 0.3 | 0.3 | 0.3 | 0.4 | 60 | 55 | NO | NO | NO |
| 1 | 1_006 | 1 Brunner Count | Post 2008 Development (Residence) | G | W | 53 | 49 | 54 | 49 | 54 | 49 | 54 | 50 | 0.5 | 0.5 | 0.5 | 0.5 | 60 | 55 | NO | NO | NO |
| 1 | 1_006 | 1 Brunner Count | Post 2008 Development (Residence) | 1 | W | 57 | 53 | 57 | 53 | 57 | 53 | 58 | 53 | 0.2 | 0.2 | 0.3 | 0.2 | 60 | 55 | NO | NO | NO |
| 1 | 1_007 | 2 Brunner Count | Post 2008 Development (Residence) | G | W | 54 | 50 | 54 | 50 | 54 | 50 | 55 | 50 | 0.2 | 0.1 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO |
| 1 | 1_007 | 2 Brunner Count | Post 2008 Development (Residence) | 1 | S | 57 | 53 | 57 | 53 | 58 | 53 | 58 | 54 | 0.3 | 0.3 | 0.3 | 0.3 | 60 | 55 | NO | NO | NO |
| 1 | 1_008 | 3 Brunner Count | Post 2008 Development (Residence) | G | W | 55 | 50 | 55 | 51 | 55 | 51 | 55 | 51 | 0.2 | 0.2 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO |
| 1 | 1_008 | 3 Brunner Count | Post 2008 Development (Residence) | 1 | W | 57 | 53 | 57 | 53 | 58 | 53 | 58 | 53 | 0.2 | 0.2 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO |
| 1 | 1_009 | 4 Brunner Count | Post 2008 Development (Residence) | G | W | 55 | 51 | 56 | 51 | 56 | 52 | 56 | 52 | 0.3 | 0.3 | 0.3 | 0.3 | 60 | 55 | NO | NO | NO |
| 1 | 1_010 | 5 Brunner Count | Post 2008 Development (Residence) | G | W | 55 | 51 | 55 | 51 | 56 | 52 | 56 | 52 | 0.1 | 0.2 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO |
| 1 | 1_010 | 5 Brunner Count | Post 2008 Development (Residence) | 1 | W | 57 | 53 | 57 | 53 | 58 | 53 | 58 | 53 | 0.2 | 0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO |
| 1 | 1_011 | 6 Brunner Count | Post 2008 Development (Residence) | G | W | 55 | 51 | 56 | 51 | 56 | 52 | 56 | 52 | 0.3 | 0.3 | 0.4 | 0.3 | 60 | 55 | NO | NO | NO |
| 1 | 1_012 | 7 Brunner Count | Post 2008 Development (Residence) | G | W | 56 | 52 | 57 | 52 | 57 | 52 | 57 | 53 | 0.3 | 0.2 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO |
| 1 | 1_012 | 7 Brunner Count | Post 2008 Development (Residence) | 1 | W | 58 | 53 | 58 | 54 | 58 | 54 | 58 | 54 | 0.2 | 0.2 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO |
| 1 | 1_013 | 8 Brunner Count | Post 2008 Development (Residence) | G | W | 56 | 52 | 56 | 52 | 56 | 52 | 57 | 53 | 0.4 | 0.4 | 0.4 | 0.5 | 60 | 55 | NO | NO | NO |
| 1 | 1_014 | 9 Brunner Count | Post 2008 Development (Residence) | G | W | 57 | 53 | 57 | 53 | 57 | 53 | 58 | 53 | 0.2 | 0.2 | 0.3 | 0.3 | 60 | 55 | NO | NO | NO |
| 1 | 1_014 | 9 Brunner Count | Post 2008 Development (Residence) | 1 | W | 58 | 54 | 58 | 54 | 58 | 54 | 59 | 54 | 0.2 | 0.2 | 0.3 | 0.3 | 60 | 55 | NO | NO | NO |
| 1 | 1_015 | 10 Brunner Count | Post 2008 Development (Residence) | G | W | 57 | 53 | 58 | 53 | 58 | 53 | 58 | 54 | 0.5 | 0.5 | 0.5 | 0.4 | 60 | 55 | NO | NO | NO |
| 1 | 1_016 | 11 Brunner Count | Post 2008 Development (Residence) | G | W | 57 | 53 | 57 | 53 | 57 | 53 | 58 | 53 | 0.3 | 0.3 | 0.4 | 0.3 | 60 | 55 | NO | NO | NO |
| 1 | 1_016 | 11 Brunner Count | Post 2008 Development (Residence) | 1 | W | 58 | 54 | 58 | 54 | 59 | 54 | 59 | 55 | 0.3 | 0.2 | 0.3 | 0.3 | 60 | 55 | NO | NO | NO |
| 1 | 1_017 | 12 Brunner Count | Post 2008 Development (Residence) | G | W | 58 | 54 | 58 | 54 | 59 | 54 | 59 | 55 | 0.2 | 0.2 | 0.3 | 0.3 | 60 | 55 | NO | NO | NO |
| 1 | 1_018 | 13 Brunner Count | Post 2008 Development (Residence) | G | W | 57 | 53 | 57 | 53 | 58 | 53 | 58 | 54 | 0.3 | 0.3 | 0.3 | 0.4 | 60 | 55 | NO | NO | NO |
| 1 | 1_018 | 13 Brunner Count | Post 2008 Development (Residence) | 1 | W | 58 | 54 | 59 | 54 | 59 | 55 | 59 | 55 | 0.3 | 0.2 | 0.3 | 0.3 | 60 | 55 | NO | NO | NO |
| 1 | 1_019 | 14 Brunner Count | Post 2008 Development (Residence) | G | W | 59 | 54 | 59 | 55 | 59 | 55 | 59 | 55 | 0.1 | 0.2 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO |
| 1 | 1_019 | 14 Brunner Count | Post 2008 Development (Residence) | 1 | W | 60 | 56 | 60 | 56 | 61 | 56 | 61 | 56 | 0 | 0 | 0.1 | 0 | 60 | 55 | NO | NO | NO |
| 1 | 1_020 | 15 Brunner Count | Post 2008 Development (Residence) | G | W | 57 | 53 | 58 | 54 | 58 | 54 | 58 | 54 | 0.4 | 0.3 | 0.4 | 0.4 | 60 | 55 | NO | NO | NO |
| 1 | 1_020 | 15 Brunner Count | Post 2008 Development (Residence) | 1 | W | 59 | 55 | 59 | 55 | 59 | 55 | 60 | 55 | 0.3 | 0.3 | 0.3 | 0.3 | 60 | 55 | NO | NO | NO |
| 1 | 1_021 | 16 Brunner Count | Post 2008 Development (Residence) | G | W | 59 | 55 | 59 | 55 | 60 | 55 | 60 | 56 | 0 | 0 | 0 | 0.1 | 60 | 55 | NO | NO | NO |
| 1 | 1_021 | 16 Brunner Count | Post 2008 Development (Residence) | 1 | W | 61 | 57 | 61 | 56 | 61 | 57 | 61 | 57 | -0.1 | -0.2 | -0.1 | -0.1 | 60 | 55 | NO | NO | NO |
| 1 | 1_022 | 17 Brunner Count | Post 2008 Development (Residence) | G | S | 58 | 54 | 59 | 55 | 59 | 55 | 59 | 55 | 0.5 | 0.5 | 0.6 | 0.5 | 60 | 55 | NO | NO | NO |
| 1 | 1_022 | 17 Brunner Count | Post 2008 Development (Residence) | 1 | S | 60 | 56 | 60 | 56 | 60 | 56 | 61 | 57 | 0.4 | 0.4 | 0.4 | 0.4 | 60 | 55 | NO | NO | NO |
| 1 | 1_023 | 18 Brunner Count | Post 2008 Development (Residence) | G | W | 61 | 56 | 61 | 56 | 61 | 57 | 61 | 57 | 0.2 | 0.1 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO |

| NCA | NCA ID | Receiver Address | Receiver Description | Facade | | Opening Year 2019 | | | | Design Year 2029 | | | | Increase (Build - No Build) | | | | RNP External Noise Criteria | | Exposed to Acute Noise Levels | | Consider further treatment? | | |
|-----|--------|------------------------|-----------------------------------|--------|-------------|-------------------|-------|-------|-------|------------------|-------|-------|-------|-----------------------------|-------|------|-------|-----------------------------|-------|-------------------------------|----------------|-----------------------------|-----|-------|
| | | | | | | No Build | | Build | | No Build | | Build | | 2019 | | 2029 | | | | | | | | |
| | | | | Floor | Orientation | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | | DAY | NIGHT |
| | | | | | | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB | dB | dB | dB | dB(A) | dB(A) | ≥ 65dB LAeq,15h | ≥ 60dB LAeq,9h | | | |
| 1 | 1_023 | 18 Brunner Count | Post 2008 Development (Residence) | 1 | W | 62 | 58 | 62 | 58 | 63 | 59 | 63 | 58 | -0.3 | -0.2 | -0.2 | -0.2 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_024 | 20 Brunner Count | Post 2008 Development (Residence) | G | SW | 62 | 57 | 62 | 57 | 62 | 58 | 62 | 58 | 0 | 0 | 0.1 | 0 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_024 | 20 Brunner Count | Post 2008 Development (Residence) | 1 | SW | 64 | 59 | 63 | 59 | 64 | 60 | 64 | 59 | -0.6 | -0.5 | -0.5 | -0.5 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_025 | 22 Brunner Count | Post 2008 Development (Residence) | G | W | 64 | 59 | 63 | 59 | 64 | 60 | 64 | 60 | -0.5 | -0.4 | -0.4 | -0.4 | 60 | 55 | NO | YES | NO | | |
| 1 | 1_025 | 22 Brunner Count | Post 2008 Development (Residence) | 1 | W | 66 | 61 | 65 | 60 | 66 | 62 | 65 | 61 | -1 | -1 | -1 | -1 | 60 | 55 | YES | YES | NO | | |
| 1 | 1_026 | 24 Brunner Count | Post 2008 Development (Residence) | G | S | 68 | 64 | 68 | 63 | 69 | 65 | 68 | 64 | -0.5 | -0.5 | -0.5 | -0.5 | 60 | 55 | YES | YES | NO | | |
| 1 | 1_026 | 24 Brunner Count | Post 2008 Development (Residence) | 1 | S | 71 | 67 | 70 | 65 | 72 | 68 | 70 | 66 | -1.5 | -1.6 | -1.5 | -1.5 | 60 | 55 | YES | YES | NO | | |
| 1 | 1_027 | Arnold Avenue | Post 2008 Development (Residence) | G | S | 65 | 60 | 66 | 61 | 65 | 61 | 66 | 62 | 1.1 | 1 | 1 | 1 | 60 | 55 | YES | YES | NO | | |
| 1 | 1_027 | Arnold Avenue | Post 2008 Development (Residence) | 1 | S | 69 | 65 | 68 | 64 | 70 | 65 | 69 | 64 | -1 | -1.1 | -1 | -1.1 | 60 | 55 | YES | YES | NO | | |
| 1 | 1_028 | Arnold Avenue | Post 2008 Development (Residence) | G | E | 61 | 56 | 61 | 56 | 61 | 57 | 61 | 57 | -0.1 | -0.2 | -0.2 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_029 | Arnold Avenue | Post 2008 Development (Residence) | G | E | 59 | 54 | 59 | 54 | 59 | 55 | 59 | 55 | -0.1 | -0.1 | -0.1 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_030 | Arnold Avenue | Post 2008 Development (Residence) | G | E | 57 | 53 | 57 | 53 | 58 | 54 | 58 | 54 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_031 | Arnold Avenue | Post 2008 Development (Residence) | G | E | 56 | 52 | 56 | 52 | 56 | 52 | 57 | 52 | 0.1 | 0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_032 | Arnold Avenue | Post 2008 Development (Residence) | G | W | 56 | 52 | 56 | 52 | 57 | 53 | 57 | 53 | 0.1 | 0.1 | 0.2 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_033 | Arnold Avenue | Post 2008 Development (Residence) | G | W | 57 | 53 | 57 | 53 | 57 | 53 | 57 | 53 | 0.2 | 0.1 | 0.2 | 0.3 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_034 | Arnold Avenue | Post 2008 Development (Residence) | G | W | 57 | 52 | 57 | 53 | 57 | 53 | 58 | 53 | 0.4 | 0.4 | 0.4 | 0.4 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_035 | Arnold Avenue | Post 2008 Development (Residence) | G | W | 56 | 52 | 57 | 52 | 57 | 53 | 57 | 53 | 0.4 | 0.4 | 0.4 | 0.4 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_036 | Arnold Avenue | Post 2008 Development (Residence) | G | W | 56 | 52 | 56 | 52 | 56 | 52 | 57 | 53 | 0.6 | 0.6 | 0.6 | 0.5 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_037 | Arnold Avenue | Post 2008 Development (Residence) | G | W | 55 | 51 | 56 | 52 | 56 | 52 | 56 | 52 | 0.4 | 0.5 | 0.4 | 0.4 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_038 | Arnold Avenue | Post 2008 Development (Residence) | G | S | 58 | 54 | 59 | 54 | 59 | 55 | 59 | 55 | 0.3 | 0.3 | 0.2 | 0.3 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_038 | Arnold Avenue | Post 2008 Development (Residence) | 1 | S | 61 | 56 | 61 | 56 | 61 | 57 | 61 | 57 | 0 | 0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_039 | Arnold Avenue | Post 2008 Development (Residence) | G | W | 56 | 52 | 57 | 52 | 57 | 53 | 57 | 53 | 0.2 | 0.2 | 0.3 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_039 | Arnold Avenue | Post 2008 Development (Residence) | 1 | W | 58 | 54 | 58 | 54 | 59 | 54 | 59 | 55 | 0.3 | 0.2 | 0.3 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_040 | Arnold Avenue | Post 2008 Development (Residence) | G | W | 56 | 51 | 56 | 52 | 56 | 52 | 56 | 52 | 0.2 | 0.2 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_040 | Arnold Avenue | Post 2008 Development (Residence) | 1 | W | 57 | 53 | 57 | 53 | 58 | 53 | 58 | 54 | 0.2 | 0.2 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_041 | Arnold Avenue | Post 2008 Development (Residence) | G | W | 56 | 51 | 56 | 52 | 56 | 52 | 56 | 52 | 0.2 | 0.2 | 0.3 | 0.3 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_041 | Arnold Avenue | Post 2008 Development (Residence) | 1 | W | 57 | 53 | 57 | 53 | 57 | 53 | 58 | 53 | 0.2 | 0.2 | 0.3 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_042 | 3 Half Penny Avenue | Post 2008 Development (Residence) | G | W | 54 | 50 | 54 | 50 | 55 | 51 | 55 | 50 | -0.1 | -0.1 | 0 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_042 | 3 Half Penny Avenue | Post 2008 Development (Residence) | 1 | W | 56 | 52 | 56 | 52 | 56 | 52 | 56 | 52 | 0 | 0 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_043 | 5 Half Penny Avenue | Post 2008 Development (Residence) | G | S | 51 | 47 | 51 | 47 | 52 | 47 | 52 | 47 | 0.1 | 0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_043 | 5 Half Penny Avenue | Post 2008 Development (Residence) | 1 | S | 55 | 51 | 55 | 51 | 56 | 51 | 56 | 52 | 0.2 | 0.2 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_044 | 7 Half Penny Avenue | Post 2008 Development (Residence) | G | W | 54 | 49 | 54 | 50 | 54 | 50 | 54 | 50 | 0.2 | 0.2 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_044 | 7 Half Penny Avenue | Post 2008 Development (Residence) | 1 | W | 56 | 52 | 56 | 52 | 56 | 52 | 57 | 52 | 0.1 | 0.2 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_045 | 9 Half Penny Avenue | Post 2008 Development (Residence) | G | S | 54 | 50 | 54 | 50 | 55 | 50 | 55 | 50 | 0.1 | 0 | 0 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_045 | 9 Half Penny Avenue | Post 2008 Development (Residence) | 1 | S | 57 | 53 | 57 | 53 | 57 | 53 | 57 | 53 | 0.1 | 0.1 | 0.1 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_046 | 11 Half Penny Avenue | Post 2008 Development (Residence) | G | S | 56 | 52 | 56 | 52 | 57 | 53 | 57 | 52 | -0.1 | -0.1 | -0.1 | -0.2 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_047 | Thomas Boulton Circuit | Post 2008 Development (Residence) | G | S | 68 | 64 | 67 | 63 | 69 | 64 | 67 | 63 | -1.1 | -1.2 | -1.1 | -1.1 | 60 | 55 | YES | YES | NO | | |
| 1 | 1_048 | Thomas Boulton Circuit | Post 2008 Development (Residence) | G | S | 68 | 63 | 67 | 62 | 68 | 64 | 67 | 63 | -1 | -1 | -1.1 | -1 | 60 | 55 | YES | YES | NO | | |
| 1 | 1_049 | Thomas Boulton Circuit | Post 2008 Development (Residence) | G | S | 58 | 54 | 58 | 54 | 58 | 54 | 59 | 54 | 0 | 0 | 0.1 | 0 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_049 | Thomas Boulton Circuit | Post 2008 Development (Residence) | 1 | S | 60 | 56 | 60 | 56 | 60 | 56 | 61 | 56 | 0.2 | 0.1 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_050 | Thomas Boulton Circuit | Post 2008 Development (Residence) | G | W | 54 | 49 | 54 | 50 | 54 | 50 | 54 | 50 | 0.4 | 0.4 | 0.4 | 0.5 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_050 | Thomas Boulton Circuit | Post 2008 Development (Residence) | 1 | W | 57 | 53 | 57 | 53 | 58 | 53 | 58 | 54 | 0.2 | 0.3 | 0.3 | 0.3 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_051 | Thomas Boulton Circuit | Post 2008 Development (Residence) | G | W | 53 | 49 | 53 | 49 | 53 | 49 | 53 | 49 | 0.1 | 0 | 0 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_051 | Thomas Boulton Circuit | Post 2008 Development (Residence) | 1 | W | 56 | 52 | 57 | 52 | 57 | 53 | 57 | 53 | 0.2 | 0.2 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |

| NCA | NCA ID | Receiver Address | Receiver Description | Facade | | Opening Year 2019 | | | | Design Year 2029 | | | | Increase (Build - No Build) | | | | RNP External Noise Criteria | | Exposed to Acute Noise Levels | | Consider further treatment? | | |
|-----|--------|-------------------------------|--------------------------------------|--------|-------------|-------------------|-------|-------|-------|------------------|-------|-------|-------|-----------------------------|-------|------|-------|-----------------------------|-------|-------------------------------|----------------|-----------------------------|-----|-------|
| | | | | | | No Build | | Build | | No Build | | Build | | 2019 | | 2029 | | | | | | | | |
| | | | | Floor | Orientation | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | | DAY | NIGHT |
| | | | | | | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB | dB | dB | dB | dB(A) | dB(A) | ≥ 65dB LAeq,15h | ≥ 60dB LAeq,9h | | | |
| 1 | 1_052 | Thomas Boulton Circuit | Post 2008 Development (Residence) | G | W | 50 | 46 | 50 | 46 | 51 | 46 | 51 | 46 | 0.1 | 0.1 | 0.1 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_052 | Thomas Boulton Circuit | Post 2008 Development (Residence) | 1 | W | 55 | 51 | 55 | 51 | 55 | 51 | 56 | 51 | 0.1 | 0.1 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_053 | Thomas Boulton Circuit | Post 2008 Development (Residence) | G | S | 63 | 59 | 63 | 59 | 64 | 60 | 64 | 59 | -0.4 | -0.4 | -0.4 | -0.4 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_053 | Thomas Boulton Circuit | Post 2008 Development (Residence) | 1 | S | 66 | 62 | 65 | 61 | 66 | 62 | 66 | 62 | -0.6 | -0.6 | -0.6 | -0.5 | 60 | 55 | YES | YES | NO | | |
| 1 | 1_054 | Thomas Boulton Circuit | Post 2008 Development (Residence) | G | W | 58 | 54 | 58 | 54 | 59 | 54 | 59 | 54 | 0 | 0 | 0 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_054 | Thomas Boulton Circuit | Post 2008 Development (Residence) | 1 | W | 60 | 56 | 60 | 56 | 61 | 56 | 61 | 57 | 0.2 | 0.1 | 0.1 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_055 | Thomas Boulton Circuit | Post 2008 Development (Residence) | G | S | 55 | 51 | 55 | 51 | 55 | 51 | 56 | 51 | 0.3 | 0.3 | 0.3 | 0.4 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_055 | Thomas Boulton Circuit | Post 2008 Development (Residence) | 1 | S | 57 | 53 | 58 | 53 | 58 | 54 | 58 | 54 | 0.4 | 0.4 | 0.4 | 0.5 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_056 | Thomas Boulton Circuit | Post 2008 Development (Residence) | G | W | 53 | 49 | 54 | 49 | 54 | 49 | 54 | 50 | 0.3 | 0.3 | 0.3 | 0.3 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_056 | Thomas Boulton Circuit | Post 2008 Development (Residence) | 1 | W | 56 | 52 | 57 | 52 | 57 | 53 | 57 | 53 | 0.2 | 0.2 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_057 | Thomas Boulton Circuit | Post 2008 Development (Residence) | G | W | 53 | 49 | 53 | 49 | 54 | 49 | 54 | 50 | 0.2 | 0.2 | 0.3 | 0.3 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_057 | Thomas Boulton Circuit | Post 2008 Development (Residence) | 1 | W | 56 | 52 | 56 | 52 | 57 | 52 | 57 | 52 | 0.2 | 0.2 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_058 | 3 John Hillas Avenue | Post 2008 Development (Residence) | G | S | 59 | 54 | 58 | 54 | 59 | 55 | 59 | 55 | -0.4 | -0.3 | -0.3 | -0.3 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_058 | 3 John Hillas Avenue | Post 2008 Development (Residence) | 1 | S | 62 | 58 | 62 | 58 | 63 | 58 | 62 | 58 | -0.4 | -0.3 | -0.3 | -0.3 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_059 | 5 John Hillas Avenue | Post 2008 Development (Residence) | G | S | 60 | 55 | 59 | 55 | 60 | 56 | 60 | 56 | -0.5 | -0.5 | -0.5 | -0.5 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_059 | 5 John Hillas Avenue | Post 2008 Development (Residence) | 1 | S | 63 | 58 | 62 | 58 | 63 | 59 | 63 | 59 | -0.3 | -0.4 | -0.3 | -0.4 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_060 | 6 John Hillas Avenue | Post 2008 Development (Residence) | G | S | 58 | 53 | 57 | 53 | 58 | 54 | 58 | 54 | -0.3 | -0.3 | -0.3 | -0.4 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_060 | 6 John Hillas Avenue | Post 2008 Development (Residence) | 1 | S | 59 | 55 | 59 | 55 | 60 | 56 | 59 | 55 | -0.3 | -0.3 | -0.3 | -0.3 | 60 | 55 | NO | NO | NO | | |
| 1 | 1_061a | 24 Arnold Avenue | Gracelands Early Education Centre | | | 68 | 63 | 66 | 61 | 69 | 63 | 67 | 61 | -1.9 | -1.9 | -1.9 | -1.9 | 55 | - | - | - | NO | | |
| 1 | 1_061b | 24 Arnold Avenue | Gracelands Early Education Centre | G | S | 67 | 63 | 66 | 62 | 67 | 63 | 66 | 62 | -0.8 | -0.9 | -0.9 | -0.9 | 45 | - | YES | - | YES | | |
| 2 | 2_001 | 40 Memorial Avenue | | G | N | 60 | 56 | 61 | 56 | 61 | 56 | 61 | 57 | 0.5 | 0.4 | 0.5 | 0.5 | 60 | 55 | NO | NO | NO | | |
| 2 | 2_002 | 8 Free Settlers Dr | The Gracewood Community | G | NW | 56 | 51 | 56 | 51 | 56 | 52 | 56 | 52 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 2 | 2_002 | 8 Free Settlers Dr | The Gracewood Community | 1 | NW | 57 | 52 | 56 | 52 | 57 | 53 | 57 | 53 | -0.1 | -0.1 | -0.1 | 0 | 60 | 55 | NO | NO | NO | | |
| 2 | 2_003 | 8 Free Settlers Dr | The Gracewood Community | G | N | 57 | 53 | 57 | 53 | 58 | 53 | 58 | 53 | 0 | 0 | -0.1 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 2 | 2_003 | 8 Free Settlers Dr | The Gracewood Community | 1 | N | 58 | 54 | 58 | 53 | 58 | 54 | 58 | 54 | -0.1 | -0.2 | -0.1 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 2 | 2_004 | 30 Memorial Avenue | | G | N | 64 | 60 | 66 | 61 | 65 | 60 | 66 | 62 | 1.4 | 1.4 | 1.5 | 1.5 | 60 | 55 | YES | YES | YES | | |
| 2 | 2_005 | 32 Memorial Avenue | | G | NW | 54 | 50 | 54 | 50 | 55 | 51 | 55 | 51 | -0.1 | -0.1 | -0.1 | 0 | 60 | 55 | NO | NO | NO | | |
| 3 | 3_001 | 15-17 Memorial Avenue (Front) | Post 2008 Development (Hills Clinic) | G | S | 68 | 63 | 67 | 62 | 68 | 64 | 67 | 63 | -1.1 | -1.1 | -1.1 | -1.1 | 45 | 45 | YES | YES | NO | | |
| 3 | 3_001 | 15-17 Memorial Avenue (Front) | Post 2008 Development (Hills Clinic) | 1 | S | 71 | 66 | 70 | 65 | 71 | 67 | 70 | 66 | -1.2 | -1.2 | -1.1 | -1.1 | 45 | 45 | YES | YES | NO | | |
| 3 | 3_002 | 15-17 Memorial Avenue (Rear) | Post 2008 Development (Hills Clinic) | G | E | 57 | 53 | 58 | 54 | 58 | 54 | 59 | 55 | 0.8 | 0.8 | 0.8 | 0.9 | 45 | 45 | NO | NO | NO | | |
| 3 | 3_002 | 15-17 Memorial Avenue (Rear) | Post 2008 Development (Hills Clinic) | 1 | E | 59 | 55 | 60 | 56 | 60 | 55 | 60 | 56 | 0.8 | 0.7 | 0.8 | 0.8 | 45 | 45 | NO | NO | NO | | |
| 3 | 3_003 | 19 Memorial Avenue | | G | S | 70 | 66 | 68 | 64 | 70 | 66 | 68 | 64 | -2 | -2 | -2 | -2 | 60 | 55 | YES | YES | YES | | |
| 3 | 3_003 | 19 Memorial Avenue | | 1 | S | 72 | 68 | 70 | 66 | 72 | 68 | 71 | 66 | -1.8 | -1.8 | -1.8 | -1.7 | 60 | 55 | YES | YES | YES | | |
| 3 | 3_004 | 21 Memorial Avenue | | G | S | 60 | 56 | 59 | 55 | 61 | 57 | 60 | 56 | -1.1 | -1.1 | -1 | -1 | 60 | 55 | NO | NO | NO | | |
| 3 | 3_006 | 23 Memorial Avenue | | G | SE | 62 | 58 | 61 | 56 | 63 | 58 | 61 | 57 | -1.6 | -1.5 | -1.6 | -1.6 | 60 | 55 | NO | NO | NO | | |
| 3 | 3_007 | 25 Memorial Avenue | | G | S | 67 | 63 | 66 | 61 | 68 | 64 | 66 | 62 | -1.6 | -1.7 | -1.7 | -1.7 | 60 | 55 | YES | YES | YES | | |
| 3 | 3_007 | 25 Memorial Avenue | | 1 | S | 69 | 65 | 68 | 64 | 70 | 66 | 68 | 64 | -1.6 | -1.6 | -1.5 | -1.5 | 60 | 55 | YES | YES | YES | | |
| 3 | 3_008 | 27 Memorial Avenue | | G | S | 66 | 62 | 64 | 60 | 67 | 62 | 64 | 60 | -2.3 | -2.3 | -2.3 | -2.3 | 60 | 55 | NO | YES | YES | | |
| 3 | 3_009 | 29 Memorial Avenue | | G | S | 68 | 64 | 66 | 62 | 69 | 65 | 67 | 62 | -2.2 | -2.3 | -2.3 | -2.3 | 60 | 55 | YES | YES | YES | | |
| 3 | 3_010 | 31 Memorial Avenue | | G | S | 66 | 62 | 64 | 60 | 67 | 63 | 65 | 61 | -2 | -2 | -2 | -2 | 60 | 55 | YES | YES | YES | | |
| 4 | 4_001 | 2 Rocks Street | Post 2008 Development (Residence) | G | N | 62 | 58 | 63 | 59 | 63 | 59 | 64 | 60 | 1.1 | 1.1 | 1.1 | 1 | 60 | 55 | NO | YES | NO | | |
| 4 | 4_001 | 2 Rocks Street | Post 2008 Development (Residence) | 1 | N | 64 | 59 | 65 | 60 | 64 | 60 | 65 | 61 | 1 | 0.9 | 1 | 1 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_002 | 4 Rocks Street | Post 2008 Development (Residence) | G | W | 60 | 56 | 61 | 57 | 61 | 57 | 62 | 58 | 0.9 | 1 | 0.9 | 1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_002 | 4 Rocks Street | Post 2008 Development (Residence) | 1 | W | 62 | 57 | 62 | 58 | 62 | 58 | 63 | 59 | 0.8 | 0.9 | 0.8 | 0.8 | 60 | 55 | NO | NO | NO | | |

| NCA | NCA ID | Receiver Address | Receiver Description | Facade | | Opening Year 2019 | | | | Design Year 2029 | | | | Increase (Build - No Build) | | | | RNP External Noise Criteria | | Exposed to Acute Noise Levels | | Consider further treatment? | | |
|-----|--------|----------------------|-----------------------------------|--------|-------------|-------------------|-------|-------|-------|------------------|-------|-------|-------|-----------------------------|-------|------|-------|-----------------------------|-------|-------------------------------|----------------|-----------------------------|-----|-------|
| | | | | | | No Build | | Build | | No Build | | Build | | 2019 | | 2029 | | | | | | | | |
| | | | | Floor | Orientation | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | | DAY | NIGHT |
| | | | | | | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB | dB | dB | dB | dB(A) | dB(A) | ≥ 65dB LAeq,15h | ≥ 60dB LAeq,9h | | | |
| 4 | 4_003 | 6 Rocks Street | Post 2008 Development (Residence) | G | W | 59 | 55 | 60 | 56 | 60 | 56 | 61 | 57 | 0.8 | 0.8 | 0.8 | 0.9 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_003 | 6 Rocks Street | Post 2008 Development (Residence) | 1 | W | 61 | 56 | 61 | 57 | 61 | 57 | 62 | 58 | 0.7 | 0.7 | 0.6 | 0.7 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_004 | 8 Rocks Street | Post 2008 Development (Residence) | G | W | 58 | 54 | 59 | 55 | 59 | 55 | 60 | 56 | 0.8 | 0.7 | 0.8 | 0.7 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_004 | 8 Rocks Street | Post 2008 Development (Residence) | 1 | W | 60 | 56 | 61 | 56 | 61 | 56 | 61 | 57 | 0.6 | 0.6 | 0.6 | 0.5 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_005 | 10 Rocks Street | Post 2008 Development (Residence) | G | W | 58 | 54 | 59 | 54 | 58 | 54 | 59 | 55 | 0.7 | 0.6 | 0.7 | 0.6 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_005 | 10 Rocks Street | Post 2008 Development (Residence) | 1 | W | 59 | 55 | 60 | 56 | 60 | 56 | 60 | 56 | 0.5 | 0.5 | 0.5 | 0.5 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_006 | 12 Rocks Street | Post 2008 Development (Residence) | G | W | 57 | 53 | 58 | 54 | 58 | 54 | 59 | 54 | 0.6 | 0.6 | 0.6 | 0.6 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_006 | 12 Rocks Street | Post 2008 Development (Residence) | 1 | W | 59 | 55 | 59 | 55 | 59 | 55 | 60 | 56 | 0.4 | 0.4 | 0.4 | 0.4 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_007 | 14 Rocks Street | Post 2008 Development (Residence) | G | W | 57 | 53 | 57 | 53 | 57 | 53 | 58 | 54 | 0.5 | 0.6 | 0.5 | 0.6 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_007 | 14 Rocks Street | Post 2008 Development (Residence) | 1 | W | 58 | 54 | 59 | 54 | 59 | 55 | 59 | 55 | 0.3 | 0.3 | 0.4 | 0.3 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_008 | 2 Rutherford Avenue | Post 2008 Development (Residence) | G | SE | 51 | 47 | 52 | 48 | 51 | 47 | 53 | 49 | 1.5 | 1.5 | 1.5 | 1.6 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_008 | 2 Rutherford Avenue | Post 2008 Development (Residence) | 1 | NW | 54 | 50 | 55 | 51 | 55 | 51 | 56 | 51 | 0.7 | 0.7 | 0.7 | 0.7 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_009 | 4 Rutherford Avenue | Post 2008 Development (Residence) | G | SE | 51 | 46 | 52 | 48 | 51 | 47 | 53 | 49 | 1.7 | 1.7 | 1.7 | 1.7 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_009 | 4 Rutherford Avenue | Post 2008 Development (Residence) | 1 | N | 54 | 50 | 55 | 50 | 55 | 50 | 55 | 51 | 0.8 | 0.8 | 0.8 | 0.9 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_010 | 6 Rutherford Avenue | Post 2008 Development (Residence) | G | S | 51 | 47 | 52 | 48 | 51 | 47 | 53 | 49 | 1.4 | 1.3 | 1.4 | 1.4 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_010 | 6 Rutherford Avenue | Post 2008 Development (Residence) | 1 | S | 53 | 49 | 54 | 50 | 54 | 49 | 55 | 50 | 1.1 | 1.2 | 1.1 | 1.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_011 | 8 Rutherford Avenue | Post 2008 Development (Residence) | G | S | 51 | 47 | 52 | 48 | 51 | 47 | 53 | 49 | 1.3 | 1.4 | 1.4 | 1.4 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_011 | 8 Rutherford Avenue | Post 2008 Development (Residence) | 1 | S | 53 | 49 | 54 | 50 | 54 | 49 | 55 | 51 | 1.2 | 1.1 | 1.2 | 1.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_012 | 10 Rutherford Avenue | Post 2008 Development (Residence) | G | SE | 51 | 47 | 52 | 48 | 52 | 48 | 53 | 49 | 1.1 | 1.2 | 1.2 | 1.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_012 | 10 Rutherford Avenue | Post 2008 Development (Residence) | 1 | SE | 54 | 49 | 55 | 50 | 54 | 50 | 55 | 51 | 1 | 1 | 1 | 1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_013 | 12 Rutherford Avenue | Post 2008 Development (Residence) | G | SE | 51 | 47 | 53 | 49 | 52 | 48 | 53 | 49 | 1.6 | 1.6 | 1.7 | 1.6 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_013 | 12 Rutherford Avenue | Post 2008 Development (Residence) | 1 | SE | 54 | 49 | 55 | 51 | 54 | 50 | 56 | 51 | 1.2 | 1.3 | 1.3 | 1.3 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_014 | 14 Rutherford Avenue | Post 2008 Development (Residence) | G | NW | 50 | 45 | 50 | 45 | 50 | 46 | 50 | 46 | 0 | 0 | 0 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_014 | 14 Rutherford Avenue | Post 2008 Development (Residence) | 1 | SE | 54 | 49 | 55 | 51 | 54 | 50 | 56 | 51 | 1.2 | 1.2 | 1.3 | 1.3 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_015 | 16 Rutherford Avenue | Post 2008 Development (Residence) | G | NW | 50 | 45 | 50 | 45 | 50 | 46 | 50 | 46 | 0 | -0.1 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_015 | 16 Rutherford Avenue | Post 2008 Development (Residence) | 1 | SE | 54 | 49 | 55 | 51 | 54 | 50 | 55 | 51 | 1.2 | 1.2 | 1.2 | 1.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_016 | 18 Rutherford Avenue | Post 2008 Development (Residence) | G | NW | 49 | 45 | 49 | 45 | 50 | 46 | 50 | 46 | -0.1 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_016 | 18 Rutherford Avenue | Post 2008 Development (Residence) | 1 | SE | 53 | 49 | 54 | 50 | 54 | 50 | 55 | 51 | 1.1 | 1.2 | 1.1 | 1.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_017 | 20 Rutherford Avenue | Post 2008 Development (Residence) | G | NW | 49 | 44 | 49 | 44 | 49 | 45 | 49 | 45 | 0 | 0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_017 | 20 Rutherford Avenue | Post 2008 Development (Residence) | 1 | NE | 53 | 49 | 53 | 49 | 54 | 50 | 54 | 50 | 0.1 | 0.1 | 0.1 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_018 | 22 Rutherford Avenue | Post 2008 Development (Residence) | G | NE | 53 | 49 | 53 | 49 | 53 | 49 | 54 | 49 | 0.2 | 0.2 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_018 | 22 Rutherford Avenue | Post 2008 Development (Residence) | 1 | NE | 56 | 52 | 57 | 53 | 57 | 52 | 57 | 53 | 0.7 | 0.7 | 0.7 | 0.8 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_019 | 24 Rutherford Avenue | Post 2008 Development (Residence) | G | NE | 53 | 48 | 53 | 49 | 53 | 49 | 53 | 49 | 0.3 | 0.2 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_019 | 24 Rutherford Avenue | Post 2008 Development (Residence) | 1 | NE | 56 | 52 | 57 | 53 | 57 | 52 | 58 | 53 | 0.9 | 1 | 1 | 1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_020 | 26 Rutherford Avenue | Post 2008 Development (Residence) | G | NE | 52 | 47 | 52 | 47 | 52 | 48 | 52 | 48 | 0.1 | 0.1 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_020 | 26 Rutherford Avenue | Post 2008 Development (Residence) | 1 | NE | 56 | 51 | 56 | 52 | 56 | 52 | 57 | 53 | 0.7 | 0.7 | 0.7 | 0.6 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_021 | 28 Rutherford Avenue | Post 2008 Development (Residence) | G | NE | 51 | 47 | 51 | 47 | 52 | 48 | 52 | 48 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_021 | 28 Rutherford Avenue | Post 2008 Development (Residence) | 1 | NE | 55 | 51 | 56 | 52 | 56 | 52 | 57 | 52 | 0.8 | 0.7 | 0.8 | 0.7 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_022 | 30 Rutherford Avenue | Post 2008 Development (Residence) | G | NE | 51 | 47 | 51 | 47 | 51 | 47 | 51 | 47 | -0.1 | 0 | -0.1 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_022 | 30 Rutherford Avenue | Post 2008 Development (Residence) | 1 | NE | 55 | 51 | 55 | 51 | 56 | 51 | 56 | 52 | 0.5 | 0.5 | 0.5 | 0.5 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_023 | 32 Rutherford Avenue | Post 2008 Development (Residence) | G | SE | 51 | 47 | 52 | 48 | 52 | 48 | 53 | 49 | 0.7 | 0.8 | 0.7 | 0.7 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_023 | 32 Rutherford Avenue | Post 2008 Development (Residence) | 1 | SE | 54 | 50 | 55 | 51 | 55 | 51 | 56 | 52 | 1 | 1.1 | 1.1 | 1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_024 | 34 Rutherford Avenue | Post 2008 Development (Residence) | G | E | 56 | 51 | 57 | 52 | 56 | 52 | 57 | 53 | 1 | 1 | 1 | 1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_024 | 34 Rutherford Avenue | Post 2008 Development (Residence) | 1 | E | 57 | 53 | 58 | 54 | 58 | 54 | 59 | 55 | 1 | 1.1 | 1 | 1 | 60 | 55 | NO | NO | NO | | |

| NCA | NCA ID | Receiver Address | Receiver Description | Facade | | Opening Year 2019 | | | | Design Year 2029 | | | | Increase (Build - No Build) | | | | RNP External Noise Criteria | | Exposed to Acute Noise Levels | | Consider further treatment? | | |
|-----|--------|----------------------|-----------------------------------|--------|-------------|-------------------|-------|-------|-------|------------------|-------|-------|-------|-----------------------------|-------|------|-------|-----------------------------|-------|-------------------------------|----------------|-----------------------------|-----|-------|
| | | | | | | No Build | | Build | | No Build | | Build | | 2019 | | 2029 | | | | | | | | |
| | | | | Floor | Orientation | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | | DAY | NIGHT |
| | | | | | | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB | dB | dB | dB | dB(A) | dB(A) | ≥ 65dB LAeq,15h | ≥ 60dB LAeq,9h | | | |
| 4 | 4_025 | 36 Rutherford Avenue | Post 2008 Development (Residence) | G | E | 55 | 51 | 57 | 52 | 56 | 52 | 57 | 53 | 1.2 | 1.1 | 1.2 | 1.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_025 | 36 Rutherford Avenue | Post 2008 Development (Residence) | 1 | E | 57 | 53 | 58 | 54 | 58 | 54 | 59 | 55 | 1 | 1 | 1 | 1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_026 | 38 Rutherford Avenue | Post 2008 Development (Residence) | G | NE | 50 | 45 | 50 | 46 | 50 | 46 | 50 | 46 | 0.2 | 0.2 | 0.2 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_026 | 38 Rutherford Avenue | Post 2008 Development (Residence) | 1 | NE | 54 | 50 | 54 | 50 | 55 | 51 | 55 | 51 | 0.1 | 0.1 | 0.2 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_027 | 40 Rutherford Avenue | Post 2008 Development (Residence) | G | NE | 50 | 45 | 50 | 46 | 50 | 46 | 50 | 46 | 0.3 | 0.3 | 0.3 | 0.3 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_027 | 40 Rutherford Avenue | Post 2008 Development (Residence) | 1 | NE | 55 | 50 | 55 | 51 | 55 | 51 | 56 | 51 | 0.3 | 0.3 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_028 | 42 Rutherford Avenue | Post 2008 Development (Residence) | G | E | 52 | 48 | 52 | 48 | 52 | 48 | 53 | 49 | 0.2 | 0.2 | 0.3 | 0.3 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_028 | 42 Rutherford Avenue | Post 2008 Development (Residence) | 1 | E | 56 | 52 | 57 | 52 | 57 | 53 | 57 | 53 | 0.4 | 0.4 | 0.4 | 0.4 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_029 | 44 Rutherford Avenue | Post 2008 Development (Residence) | G | N | 55 | 51 | 57 | 52 | 56 | 52 | 57 | 53 | 1.4 | 1.3 | 1.4 | 1.4 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_029 | 44 Rutherford Avenue | Post 2008 Development (Residence) | 1 | N | 58 | 53 | 59 | 54 | 58 | 54 | 59 | 55 | 0.9 | 1 | 0.9 | 0.9 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_030 | 46 Rutherford Avenue | Post 2008 Development (Residence) | G | SE | 55 | 51 | 57 | 52 | 56 | 52 | 57 | 53 | 1.4 | 1.4 | 1.4 | 1.4 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_030 | 46 Rutherford Avenue | Post 2008 Development (Residence) | 1 | SE | 57 | 53 | 58 | 54 | 57 | 53 | 59 | 54 | 1.2 | 1.3 | 1.2 | 1.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_031 | 48 Rutherford Avenue | Post 2008 Development (Residence) | G | SE | 55 | 50 | 56 | 52 | 55 | 51 | 57 | 53 | 1.7 | 1.6 | 1.7 | 1.7 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_031 | 48 Rutherford Avenue | Post 2008 Development (Residence) | 1 | SE | 57 | 52 | 58 | 54 | 57 | 53 | 59 | 54 | 1.5 | 1.5 | 1.5 | 1.5 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_032 | 50 Rutherford Avenue | Post 2008 Development (Residence) | G | SE | 55 | 51 | 57 | 52 | 56 | 51 | 57 | 53 | 1.5 | 1.6 | 1.6 | 1.6 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_032 | 50 Rutherford Avenue | Post 2008 Development (Residence) | 1 | SE | 57 | 53 | 58 | 54 | 58 | 53 | 59 | 55 | 1.4 | 1.5 | 1.4 | 1.4 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_033 | 52 Rutherford Avenue | Post 2008 Development (Residence) | G | NE | 59 | 54 | 60 | 56 | 59 | 55 | 61 | 56 | 1.2 | 1.2 | 1.2 | 1.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_033 | 52 Rutherford Avenue | Post 2008 Development (Residence) | 1 | NE | 60 | 56 | 61 | 57 | 61 | 57 | 62 | 58 | 1.1 | 1.1 | 1.1 | 1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_034 | 54 Rutherford Avenue | Post 2008 Development (Residence) | G | N | 65 | 61 | 67 | 63 | 66 | 61 | 68 | 63 | 2.2 | 2.2 | 2.2 | 2.2 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_034 | 54 Rutherford Avenue | Post 2008 Development (Residence) | 1 | N | 67 | 62 | 69 | 65 | 67 | 63 | 69 | 65 | 2.1 | 2.2 | 2.1 | 2.1 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_035 | 56 Rutherford Avenue | Post 2008 Development (Residence) | G | N | 65 | 61 | 67 | 63 | 65 | 61 | 68 | 63 | 2.2 | 2.2 | 2.1 | 2.1 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_035 | 56 Rutherford Avenue | Post 2008 Development (Residence) | 1 | N | 67 | 62 | 69 | 64 | 67 | 63 | 69 | 65 | 2.1 | 2.1 | 2.1 | 2.1 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_036 | 58 Rutherford Avenue | Post 2008 Development (Residence) | G | N | 65 | 61 | 67 | 63 | 65 | 61 | 67 | 63 | 2.1 | 2.1 | 2.1 | 2.1 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_036 | 58 Rutherford Avenue | Post 2008 Development (Residence) | 1 | N | 66 | 62 | 69 | 64 | 67 | 63 | 69 | 65 | 2.1 | 2.1 | 2.1 | 2 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_037 | 60 Rutherford Avenue | Post 2008 Development (Residence) | G | N | 65 | 60 | 67 | 62 | 65 | 61 | 67 | 63 | 2.1 | 2 | 2.1 | 2.1 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_037 | 60 Rutherford Avenue | Post 2008 Development (Residence) | 1 | N | 66 | 62 | 68 | 64 | 67 | 63 | 69 | 65 | 2 | 2 | 2 | 2 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_038 | 62 Rutherford Avenue | Post 2008 Development (Residence) | G | N | 65 | 60 | 66 | 62 | 65 | 61 | 67 | 63 | 1.9 | 2 | 2 | 2 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_038 | 62 Rutherford Avenue | Post 2008 Development (Residence) | 1 | N | 66 | 62 | 68 | 64 | 67 | 63 | 69 | 64 | 2 | 1.9 | 2 | 1.9 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_039 | 64 Rutherford Avenue | Post 2008 Development (Residence) | G | N | 64 | 60 | 66 | 62 | 65 | 61 | 67 | 63 | 2 | 1.9 | 1.9 | 1.9 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_039 | 64 Rutherford Avenue | Post 2008 Development (Residence) | 1 | N | 66 | 62 | 68 | 64 | 67 | 62 | 69 | 64 | 1.9 | 1.9 | 1.9 | 1.9 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_040 | 66 Rutherford Avenue | Post 2008 Development (Residence) | G | N | 64 | 60 | 66 | 62 | 65 | 61 | 67 | 62 | 1.9 | 1.9 | 1.8 | 1.9 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_040 | 66 Rutherford Avenue | Post 2008 Development (Residence) | 1 | N | 66 | 62 | 68 | 64 | 67 | 62 | 68 | 64 | 1.9 | 1.8 | 1.9 | 1.8 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_041 | 68 Rutherford Avenue | Post 2008 Development (Residence) | G | N | 64 | 60 | 66 | 62 | 65 | 61 | 67 | 62 | 1.9 | 1.8 | 1.8 | 1.8 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_041 | 68 Rutherford Avenue | Post 2008 Development (Residence) | 1 | N | 66 | 62 | 68 | 63 | 67 | 62 | 68 | 64 | 1.8 | 1.8 | 1.8 | 1.7 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_042 | 70 Rutherford Avenue | Post 2008 Development (Residence) | G | N | 64 | 60 | 66 | 62 | 65 | 60 | 66 | 62 | 1.8 | 1.7 | 1.8 | 1.7 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_042 | 70 Rutherford Avenue | Post 2008 Development (Residence) | 1 | N | 66 | 62 | 68 | 63 | 66 | 62 | 68 | 64 | 1.8 | 1.7 | 1.7 | 1.8 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_043 | 72 Rutherford Avenue | Post 2008 Development (Residence) | G | N | 64 | 60 | 66 | 62 | 65 | 60 | 66 | 62 | 1.7 | 1.8 | 1.7 | 1.7 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_043 | 72 Rutherford Avenue | Post 2008 Development (Residence) | 1 | N | 66 | 62 | 67 | 63 | 66 | 62 | 68 | 64 | 1.7 | 1.7 | 1.7 | 1.7 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_044 | 74 Rutherford Avenue | Post 2008 Development (Residence) | G | N | 64 | 60 | 66 | 61 | 64 | 60 | 66 | 62 | 1.7 | 1.7 | 1.7 | 1.7 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_044 | 74 Rutherford Avenue | Post 2008 Development (Residence) | 1 | N | 66 | 61 | 67 | 63 | 66 | 62 | 68 | 64 | 1.7 | 1.7 | 1.7 | 1.7 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_045 | 76 Rutherford Avenue | Post 2008 Development (Residence) | G | N | 65 | 60 | 66 | 62 | 65 | 61 | 67 | 63 | 1.9 | 1.9 | 1.8 | 1.9 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_045 | 76 Rutherford Avenue | Post 2008 Development (Residence) | 1 | N | 66 | 62 | 68 | 64 | 67 | 63 | 69 | 65 | 1.9 | 1.9 | 1.9 | 1.9 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_046 | 78 Rutherford Avenue | Post 2008 Development (Residence) | G | N | 65 | 60 | 67 | 62 | 65 | 61 | 67 | 63 | 1.9 | 1.9 | 1.9 | 1.9 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_046 | 78 Rutherford Avenue | Post 2008 Development (Residence) | 1 | N | 66 | 62 | 68 | 64 | 67 | 63 | 69 | 65 | 2 | 2 | 1.9 | 1.9 | 60 | 55 | YES | YES | NO | | |

| NCA | NCA ID | Receiver Address | Receiver Description | Facade | | Opening Year 2019 | | | | Design Year 2029 | | | | Increase (Build - No Build) | | | | RNP External Noise Criteria | | Exposed to Acute Noise Levels | | Consider further treatment? | | |
|-----|--------|-----------------------|-----------------------------------|--------|-------------|-------------------|-------|-------|-------|------------------|-------|-------|-------|-----------------------------|-------|------|-------|-----------------------------|-------|-------------------------------|----------------|-----------------------------|-----|-------|
| | | | | | | No Build | | Build | | No Build | | Build | | 2019 | | 2029 | | | | | | | | |
| | | | | Floor | Orientation | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | | DAY | NIGHT |
| | | | | | | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB | dB | dB | dB | dB(A) | dB(A) | ≥ 65dB LAeq,15h | ≥ 60dB LAeq,9h | | | |
| 4 | 4_047 | 80 Rutherford Avenue | Post 2008 Development (Residence) | G | N | 64 | 59 | 65 | 61 | 64 | 60 | 66 | 62 | 1.4 | 1.5 | 1.5 | 1.5 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_047 | 80 Rutherford Avenue | Post 2008 Development (Residence) | 1 | N | 66 | 61 | 67 | 63 | 66 | 62 | 68 | 64 | 1.8 | 1.8 | 1.8 | 1.8 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_048 | 82 Rutherford Avenue | Post 2008 Development (Residence) | G | E | 57 | 53 | 58 | 54 | 58 | 54 | 59 | 55 | 1.1 | 1 | 1.1 | 1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_048 | 82 Rutherford Avenue | Post 2008 Development (Residence) | 1 | E | 60 | 56 | 61 | 57 | 61 | 56 | 62 | 57 | 1 | 1 | 0.9 | 0.9 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_049 | 84 Rutherford Avenue | Post 2008 Development (Residence) | G | W | 58 | 54 | 59 | 54 | 59 | 55 | 59 | 55 | 0.3 | 0.2 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_049 | 84 Rutherford Avenue | Post 2008 Development (Residence) | 1 | W | 61 | 57 | 62 | 57 | 62 | 57 | 62 | 58 | 0.5 | 0.5 | 0.5 | 0.4 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_050 | 86 Rutherford Avenue | Post 2008 Development (Residence) | G | NW | 57 | 53 | 57 | 53 | 58 | 53 | 58 | 54 | 0.2 | 0.2 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_050 | 86 Rutherford Avenue | Post 2008 Development (Residence) | 1 | NW | 60 | 55 | 60 | 56 | 60 | 56 | 60 | 56 | 0.2 | 0.3 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_051 | 88 Rutherford Avenue | Post 2008 Development (Residence) | G | NW | 56 | 52 | 56 | 52 | 57 | 52 | 57 | 52 | 0 | 0 | 0.1 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_051 | 88 Rutherford Avenue | Post 2008 Development (Residence) | 1 | NW | 59 | 54 | 59 | 55 | 59 | 55 | 60 | 55 | 0.2 | 0.3 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_052 | 90 Rutherford Avenue | Post 2008 Development (Residence) | G | NW | 55 | 51 | 55 | 51 | 55 | 51 | 55 | 51 | 0.1 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_052 | 90 Rutherford Avenue | Post 2008 Development (Residence) | 1 | NW | 58 | 53 | 58 | 53 | 58 | 54 | 58 | 54 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_053 | 92 Rutherford Avenue | Post 2008 Development (Residence) | G | SE | 54 | 49 | 54 | 50 | 54 | 50 | 55 | 50 | 0.5 | 0.5 | 0.4 | 0.4 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_053 | 92 Rutherford Avenue | Post 2008 Development (Residence) | 1 | SE | 57 | 52 | 57 | 53 | 57 | 53 | 58 | 53 | 0.5 | 0.5 | 0.6 | 0.5 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_054 | 94 Rutherford Avenue | Post 2008 Development (Residence) | G | SE | 53 | 49 | 54 | 49 | 54 | 50 | 54 | 50 | 0.4 | 0.4 | 0.4 | 0.4 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_054 | 94 Rutherford Avenue | Post 2008 Development (Residence) | 1 | SE | 56 | 52 | 57 | 53 | 57 | 53 | 57 | 53 | 0.6 | 0.6 | 0.5 | 0.5 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_055 | 96 Rutherford Avenue | Post 2008 Development (Residence) | G | SE | 53 | 49 | 54 | 49 | 54 | 49 | 54 | 50 | 0.4 | 0.4 | 0.4 | 0.4 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_055 | 96 Rutherford Avenue | Post 2008 Development (Residence) | 1 | SE | 56 | 52 | 57 | 52 | 57 | 52 | 57 | 53 | 0.7 | 0.6 | 0.7 | 0.7 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_056 | 98 Rutherford Avenue | Post 2008 Development (Residence) | G | E | 53 | 49 | 54 | 49 | 54 | 49 | 54 | 50 | 0.5 | 0.6 | 0.6 | 0.6 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_056 | 98 Rutherford Avenue | Post 2008 Development (Residence) | 1 | E | 56 | 52 | 57 | 52 | 57 | 52 | 57 | 53 | 0.8 | 0.7 | 0.8 | 0.8 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_057 | 100 Rutherford Avenue | Post 2008 Development (Residence) | G | E | 53 | 49 | 54 | 50 | 54 | 49 | 54 | 50 | 0.8 | 0.9 | 0.8 | 0.9 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_057 | 100 Rutherford Avenue | Post 2008 Development (Residence) | 1 | E | 56 | 52 | 57 | 52 | 56 | 52 | 57 | 53 | 0.8 | 0.9 | 0.8 | 0.8 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_058 | 102 Rutherford Avenue | Post 2008 Development (Residence) | G | E | 53 | 48 | 54 | 49 | 53 | 49 | 54 | 50 | 1 | 1.1 | 1 | 1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_058 | 102 Rutherford Avenue | Post 2008 Development (Residence) | 1 | E | 56 | 51 | 57 | 52 | 56 | 52 | 57 | 53 | 1 | 1 | 1 | 1.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_059 | 104 Rutherford Avenue | Post 2008 Development (Residence) | G | E | 52 | 48 | 53 | 49 | 53 | 49 | 54 | 49 | 0.8 | 0.8 | 0.8 | 0.8 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_059 | 104 Rutherford Avenue | Post 2008 Development (Residence) | 1 | E | 55 | 51 | 56 | 52 | 56 | 52 | 57 | 53 | 1 | 1.1 | 1 | 1.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_060 | 106 Rutherford Avenue | Post 2008 Development (Residence) | G | W | 53 | 49 | 53 | 49 | 54 | 49 | 53 | 49 | 0 | -0.1 | -0.1 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_060 | 106 Rutherford Avenue | Post 2008 Development (Residence) | 1 | E | 55 | 51 | 56 | 52 | 56 | 52 | 57 | 53 | 1 | 1 | 1 | 1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_061 | 108 Rutherford Avenue | Post 2008 Development (Residence) | G | W | 54 | 50 | 54 | 50 | 55 | 51 | 55 | 51 | 0.2 | 0.2 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_061 | 108 Rutherford Avenue | Post 2008 Development (Residence) | 1 | W | 56 | 52 | 56 | 52 | 57 | 53 | 57 | 53 | 0 | 0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_062 | 110 Rutherford Avenue | Post 2008 Development (Residence) | G | W | 54 | 50 | 54 | 50 | 54 | 50 | 55 | 51 | 0.4 | 0.4 | 0.4 | 0.4 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_062 | 110 Rutherford Avenue | Post 2008 Development (Residence) | 1 | W | 56 | 52 | 56 | 52 | 57 | 52 | 57 | 53 | 0.1 | 0.2 | 0.1 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_063 | 112 Rutherford Avenue | Post 2008 Development (Residence) | G | W | 55 | 51 | 55 | 51 | 56 | 51 | 56 | 52 | 0.4 | 0.3 | 0.3 | 0.3 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_063 | 112 Rutherford Avenue | Post 2008 Development (Residence) | 1 | W | 57 | 52 | 57 | 53 | 57 | 53 | 57 | 53 | 0.1 | 0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_064 | 114 Rutherford Avenue | Post 2008 Development (Residence) | G | N | 64 | 59 | 65 | 61 | 64 | 60 | 66 | 62 | 1.5 | 1.5 | 1.4 | 1.4 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_064 | 114 Rutherford Avenue | Post 2008 Development (Residence) | 1 | N | 66 | 62 | 68 | 64 | 67 | 63 | 69 | 64 | 1.8 | 1.8 | 1.8 | 1.8 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_065 | 116 Rutherford Avenue | Post 2008 Development (Residence) | G | N | 65 | 60 | 66 | 61 | 65 | 61 | 66 | 62 | 1 | 0.9 | 0.9 | 0.9 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_065 | 116 Rutherford Avenue | Post 2008 Development (Residence) | 1 | N | 66 | 62 | 68 | 64 | 67 | 63 | 68 | 64 | 1.5 | 1.5 | 1.5 | 1.5 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_066 | 118 Rutherford Avenue | Post 2008 Development (Residence) | G | S | 48 | -89 | -90 | -89 | -90 | -89 | -90 | -89 | -138.4 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_066 | 118 Rutherford Avenue | Post 2008 Development (Residence) | 1 | S | 54 | -89 | -90 | -89 | -90 | -89 | -90 | -89 | -143.9 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_067 | 120 Rutherford Avenue | Post 2008 Development (Residence) | G | S | 48 | -89 | -90 | -89 | -90 | -89 | -90 | -89 | -138.6 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_067 | 120 Rutherford Avenue | Post 2008 Development (Residence) | 1 | S | 54 | -89 | -90 | -89 | -90 | -89 | -90 | -89 | -144 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_068 | 122 Rutherford Avenue | Post 2008 Development (Residence) | G | N | 65 | 60 | 66 | 62 | 65 | 61 | 67 | 62 | 1.3 | 1.3 | 1.3 | 1.3 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_068 | 122 Rutherford Avenue | Post 2008 Development (Residence) | 1 | N | 66 | 62 | 68 | 64 | 67 | 63 | 68 | 64 | 1.6 | 1.5 | 1.5 | 1.5 | 60 | 55 | YES | YES | NO | | |

| NCA | NCA ID | Receiver Address | Receiver Description | Facade | | Opening Year 2019 | | | | Design Year 2029 | | | | Increase (Build - No Build) | | | | RNP External Noise Criteria | | Exposed to Acute Noise Levels | | Consider further treatment? | | |
|-----|--------|------------------------|-----------------------------------|--------|-------------|-------------------|-------|-------|-------|------------------|-------|-------|-------|-----------------------------|-------|------|-------|-----------------------------|-------|-------------------------------|----------------|-----------------------------|-----|-------|
| | | | | | | No Build | | Build | | No Build | | Build | | 2019 | | 2029 | | | | | | | | |
| | | | | Floor | Orientation | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | | DAY | NIGHT |
| | | | | | | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB | dB | dB | dB | dB(A) | dB(A) | ≥ 65dB LAeq,15h | ≥ 60dB LAeq,9h | | | |
| 4 | 4_069 | 124 Rutherford Avenue | Post 2008 Development (Residence) | G | N | 65 | 60 | 66 | 62 | 65 | 61 | 67 | 62 | 1.4 | 1.4 | 1.5 | 1.4 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_069 | 124 Rutherford Avenue | Post 2008 Development (Residence) | 1 | N | 66 | 62 | 68 | 64 | 67 | 63 | 68 | 64 | 1.5 | 1.6 | 1.5 | 1.5 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_070 | 126 Rutherford Avenue | Post 2008 Development (Residence) | G | N | 65 | 61 | 66 | 62 | 65 | 61 | 67 | 63 | 1.5 | 1.6 | 1.6 | 1.6 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_070 | 126 Rutherford Avenue | Post 2008 Development (Residence) | 1 | N | 67 | 62 | 68 | 64 | 67 | 63 | 69 | 65 | 1.6 | 1.6 | 1.6 | 1.7 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_071 | 23 Pellizzer Boulevard | Post 2008 Development (Residence) | G | NW | 52 | 48 | 52 | 48 | 52 | 48 | 52 | 48 | 0 | 0.1 | 0 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_071 | 23 Pellizzer Boulevard | Post 2008 Development (Residence) | 1 | SE | 54 | 50 | 55 | 51 | 54 | 50 | 56 | 51 | 1.2 | 1.2 | 1.2 | 1.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_072 | 25 Pellizzer Boulevard | Post 2008 Development (Residence) | G | NW | 52 | 48 | 52 | 48 | 53 | 48 | 53 | 48 | 0.1 | 0.1 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_072 | 25 Pellizzer Boulevard | Post 2008 Development (Residence) | 1 | SE | 54 | 50 | 55 | 51 | 55 | 50 | 56 | 52 | 1.3 | 1.3 | 1.3 | 1.3 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_073 | 27 Pellizzer Boulevard | Post 2008 Development (Residence) | G | NW | 52 | 48 | 52 | 48 | 53 | 49 | 53 | 49 | 0.1 | 0.1 | 0.2 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_073 | 27 Pellizzer Boulevard | Post 2008 Development (Residence) | 1 | SE | 54 | 50 | 55 | 51 | 55 | 50 | 56 | 51 | 1 | 1 | 1 | 1.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_074 | 29 Pellizzer Boulevard | Post 2008 Development (Residence) | G | NW | 53 | 48 | 53 | 48 | 53 | 49 | 53 | 49 | 0.1 | 0.1 | 0.2 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_074 | 29 Pellizzer Boulevard | Post 2008 Development (Residence) | 1 | NW | 55 | 51 | 55 | 51 | 55 | 51 | 55 | 51 | 0 | 0 | 0 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_075 | 31 Pellizzer Boulevard | Post 2008 Development (Residence) | G | W | 53 | 49 | 53 | 49 | 53 | 49 | 54 | 49 | 0.2 | 0.3 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_075 | 31 Pellizzer Boulevard | Post 2008 Development (Residence) | 1 | W | 55 | 51 | 55 | 51 | 56 | 52 | 56 | 52 | 0.1 | 0 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_076 | 33 Pellizzer Boulevard | Post 2008 Development (Residence) | G | W | 53 | 49 | 54 | 49 | 54 | 50 | 54 | 50 | 0.3 | 0.3 | 0.3 | 0.3 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_076 | 33 Pellizzer Boulevard | Post 2008 Development (Residence) | 1 | W | 56 | 51 | 56 | 52 | 56 | 52 | 56 | 52 | 0.2 | 0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_077 | 35 Pellizzer Boulevard | Post 2008 Development (Residence) | G | W | 54 | 49 | 54 | 50 | 54 | 50 | 55 | 50 | 0.4 | 0.3 | 0.3 | 0.3 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_077 | 35 Pellizzer Boulevard | Post 2008 Development (Residence) | 1 | W | 56 | 52 | 56 | 52 | 57 | 53 | 57 | 53 | 0.3 | 0.2 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_078 | 37 Pellizzer Boulevard | Post 2008 Development (Residence) | G | W | 54 | 50 | 55 | 50 | 55 | 51 | 55 | 51 | 0.4 | 0.4 | 0.5 | 0.5 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_078 | 37 Pellizzer Boulevard | Post 2008 Development (Residence) | 1 | W | 57 | 53 | 57 | 53 | 57 | 53 | 58 | 53 | 0.3 | 0.2 | 0.3 | 0.3 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_079 | 39 Pellizzer Boulevard | Post 2008 Development (Residence) | G | W | 55 | 50 | 55 | 51 | 55 | 51 | 56 | 52 | 0.6 | 0.6 | 0.5 | 0.5 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_079 | 39 Pellizzer Boulevard | Post 2008 Development (Residence) | 1 | W | 57 | 53 | 58 | 54 | 58 | 54 | 58 | 54 | 0.4 | 0.4 | 0.4 | 0.4 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_080 | 41 Pellizzer Boulevard | Post 2008 Development (Residence) | G | W | 55 | 51 | 56 | 52 | 56 | 52 | 57 | 52 | 0.6 | 0.6 | 0.6 | 0.6 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_080 | 41 Pellizzer Boulevard | Post 2008 Development (Residence) | 1 | W | 58 | 54 | 59 | 54 | 59 | 54 | 59 | 55 | 0.5 | 0.5 | 0.4 | 0.4 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_081 | 43 Pellizzer Boulevard | Post 2008 Development (Residence) | G | W | 56 | 52 | 56 | 52 | 56 | 52 | 57 | 53 | 0.7 | 0.7 | 0.7 | 0.7 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_081 | 43 Pellizzer Boulevard | Post 2008 Development (Residence) | 1 | W | 58 | 54 | 59 | 55 | 59 | 55 | 60 | 55 | 0.6 | 0.5 | 0.5 | 0.5 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_082 | 45 Pellizzer Boulevard | Post 2008 Development (Residence) | G | W | 58 | 53 | 59 | 54 | 58 | 54 | 59 | 55 | 0.9 | 0.8 | 0.8 | 0.8 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_082 | 45 Pellizzer Boulevard | Post 2008 Development (Residence) | 1 | W | 60 | 56 | 61 | 57 | 61 | 57 | 62 | 57 | 0.8 | 0.7 | 0.7 | 0.7 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_083 | 47 Pellizzer Boulevard | Post 2008 Development (Residence) | G | N | 61 | 57 | 62 | 58 | 62 | 58 | 63 | 58 | 1 | 0.9 | 1 | 0.9 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_083 | 47 Pellizzer Boulevard | Post 2008 Development (Residence) | 1 | N | 63 | 59 | 65 | 60 | 64 | 60 | 65 | 61 | 1.2 | 1.2 | 1.1 | 1.1 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_084 | Grace Crescent | Post 2008 Development (Residence) | G | SE | 54 | 50 | 55 | 51 | 55 | 51 | 56 | 52 | 1.1 | 1.1 | 1.1 | 1.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_084 | Grace Crescent | Post 2008 Development (Residence) | 1 | SE | 57 | 53 | 58 | 53 | 58 | 54 | 58 | 54 | 0.6 | 0.6 | 0.5 | 0.5 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_085 | Grace Crescent | Post 2008 Development (Residence) | G | SE | 54 | 50 | 55 | 51 | 55 | 51 | 56 | 52 | 1.1 | 1.1 | 1.2 | 1.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_085 | Grace Crescent | Post 2008 Development (Residence) | 1 | SE | 57 | 53 | 58 | 54 | 58 | 54 | 59 | 54 | 0.5 | 0.5 | 0.6 | 0.5 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_086 | Grace Crescent | Post 2008 Development (Residence) | G | SE | 55 | 51 | 56 | 52 | 55 | 51 | 56 | 52 | 1 | 1 | 1 | 1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_086 | Grace Crescent | Post 2008 Development (Residence) | 1 | SE | 58 | 54 | 58 | 54 | 58 | 54 | 59 | 55 | 0.4 | 0.4 | 0.5 | 0.4 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_087 | Grace Crescent | Post 2008 Development (Residence) | G | SE | 55 | 51 | 56 | 52 | 55 | 51 | 57 | 52 | 1.1 | 1.1 | 1.1 | 1.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_087 | Grace Crescent | Post 2008 Development (Residence) | 1 | SE | 58 | 54 | 59 | 54 | 59 | 55 | 59 | 55 | 0.3 | 0.3 | 0.4 | 0.3 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_088 | Grace Crescent | Post 2008 Development (Residence) | G | SE | 55 | 50 | 56 | 51 | 55 | 51 | 56 | 52 | 1 | 1 | 1 | 1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_088 | Grace Crescent | Post 2008 Development (Residence) | 1 | SE | 59 | 54 | 59 | 55 | 59 | 55 | 60 | 55 | 0.3 | 0.3 | 0.3 | 0.3 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_089 | Grace Crescent | Post 2008 Development (Residence) | G | SE | 55 | 51 | 56 | 52 | 56 | 52 | 57 | 53 | 1 | 1 | 1 | 0.9 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_089 | Grace Crescent | Post 2008 Development (Residence) | 1 | SE | 59 | 55 | 59 | 55 | 60 | 56 | 60 | 56 | 0.2 | 0.2 | 0.1 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_090 | Grace Crescent | Post 2008 Development (Residence) | G | SE | 56 | 51 | 57 | 52 | 56 | 52 | 57 | 53 | 1 | 0.9 | 1 | 1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_090 | Grace Crescent | Post 2008 Development (Residence) | 1 | SE | 60 | 56 | 60 | 56 | 61 | 56 | 61 | 56 | 0 | 0 | 0.1 | 0 | 60 | 55 | NO | NO | NO | | |

| NCA | NCA ID | Receiver Address | Receiver Description | Facade | | Opening Year 2019 | | | | Design Year 2029 | | | | Increase (Build - No Build) | | | | RNP External Noise Criteria | | Exposed to Acute Noise Levels | | Consider further treatment? | | |
|-----|--------|------------------|-----------------------------------|--------|-------------|-------------------|-------|-------|-------|------------------|-------|-------|-------|-----------------------------|-------|------|-------|-----------------------------|-------|-------------------------------|----------------|-----------------------------|-----|-------|
| | | | | | | No Build | | Build | | No Build | | Build | | 2019 | | 2029 | | | | | | | | |
| | | | | Floor | Orientation | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | | DAY | NIGHT |
| | | | | | | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB | dB | dB | dB | dB(A) | dB(A) | ≥ 65dB LAeq,15h | ≥ 60dB LAeq,9h | | | |
| 4 | 4_091 | Grace Crescent | Post 2008 Development (Residence) | G | SE | 56 | 52 | 57 | 53 | 57 | 52 | 58 | 53 | 1 | 1 | 1 | 0.9 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_091 | Grace Crescent | Post 2008 Development (Residence) | 1 | SE | 60 | 56 | 60 | 56 | 61 | 57 | 61 | 57 | 0 | 0 | 0.1 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_092 | Grace Crescent | Post 2008 Development (Residence) | G | SE | 57 | 53 | 58 | 54 | 57 | 53 | 58 | 54 | 1.1 | 1 | 1.1 | 1.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_092 | Grace Crescent | Post 2008 Development (Residence) | 1 | SE | 61 | 57 | 61 | 57 | 62 | 58 | 62 | 58 | 0.1 | 0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_093 | Grace Crescent | Post 2008 Development (Residence) | G | E | 61 | 56 | 61 | 57 | 61 | 57 | 62 | 58 | 0.8 | 0.7 | 0.8 | 0.8 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_093 | Grace Crescent | Post 2008 Development (Residence) | 1 | E | 64 | 60 | 64 | 60 | 64 | 60 | 65 | 61 | 0.3 | 0.3 | 0.3 | 0.2 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_094 | Grace Crescent | Post 2008 Development (Residence) | G | E | 61 | 57 | 62 | 58 | 62 | 58 | 63 | 58 | 0.8 | 0.8 | 0.8 | 0.8 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_094 | Grace Crescent | Post 2008 Development (Residence) | 1 | E | 65 | 60 | 65 | 61 | 65 | 61 | 66 | 62 | 0.5 | 0.5 | 0.6 | 0.5 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_095 | Grace Crescent | Post 2008 Development (Residence) | G | N | 65 | 61 | 67 | 62 | 66 | 61 | 67 | 63 | 1.6 | 1.7 | 1.6 | 1.6 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_095 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 68 | 64 | 70 | 66 | 69 | 65 | 71 | 67 | 2 | 1.9 | 2 | 2 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_096 | Grace Crescent | Post 2008 Development (Residence) | G | N | 65 | 61 | 67 | 63 | 66 | 61 | 67 | 63 | 1.8 | 1.9 | 1.8 | 1.8 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_096 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 68 | 64 | 70 | 66 | 68 | 64 | 71 | 67 | 2.5 | 2.5 | 2.5 | 2.5 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_097 | Grace Crescent | Post 2008 Development (Residence) | G | N | 65 | 61 | 67 | 62 | 65 | 61 | 67 | 63 | 1.9 | 1.9 | 1.9 | 1.9 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_097 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 68 | 63 | 70 | 66 | 68 | 64 | 71 | 67 | 2.7 | 2.6 | 2.7 | 2.6 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_098 | Grace Crescent | Post 2008 Development (Residence) | G | N | 65 | 61 | 67 | 62 | 65 | 61 | 67 | 63 | 1.9 | 1.8 | 1.9 | 1.9 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_098 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 68 | 63 | 70 | 66 | 68 | 64 | 71 | 67 | 2.7 | 2.6 | 2.6 | 2.7 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_099 | Grace Crescent | Post 2008 Development (Residence) | G | N | 65 | 61 | 67 | 63 | 66 | 61 | 67 | 63 | 1.8 | 1.9 | 1.9 | 1.8 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_099 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 68 | 63 | 70 | 66 | 68 | 64 | 71 | 67 | 2.7 | 2.7 | 2.7 | 2.7 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_100 | Grace Crescent | Post 2008 Development (Residence) | G | N | 65 | 61 | 67 | 63 | 66 | 61 | 67 | 63 | 1.8 | 1.9 | 1.8 | 1.8 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_100 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 68 | 63 | 70 | 66 | 68 | 64 | 71 | 67 | 2.7 | 2.7 | 2.7 | 2.7 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_101 | Grace Crescent | Post 2008 Development (Residence) | G | N | 65 | 61 | 67 | 63 | 66 | 62 | 67 | 63 | 1.8 | 1.8 | 1.7 | 1.7 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_101 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 67 | 63 | 70 | 66 | 68 | 64 | 71 | 67 | 2.8 | 2.7 | 2.7 | 2.7 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_102 | Grace Crescent | Post 2008 Development (Residence) | G | N | 65 | 61 | 67 | 62 | 66 | 61 | 67 | 63 | 1.6 | 1.5 | 1.6 | 1.6 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_102 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 67 | 63 | 70 | 66 | 68 | 64 | 71 | 66 | 2.7 | 2.6 | 2.6 | 2.6 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_103 | Grace Crescent | Post 2008 Development (Residence) | G | N | 65 | 61 | 66 | 62 | 66 | 61 | 67 | 63 | 1.4 | 1.3 | 1.3 | 1.3 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_103 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 67 | 63 | 70 | 66 | 68 | 64 | 70 | 66 | 2.6 | 2.5 | 2.5 | 2.5 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_104 | Grace Crescent | Post 2008 Development (Residence) | G | N | 65 | 61 | 66 | 62 | 66 | 61 | 67 | 63 | 1.2 | 1.2 | 1.2 | 1.2 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_104 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 67 | 63 | 70 | 65 | 68 | 64 | 70 | 66 | 2.4 | 2.4 | 2.4 | 2.4 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_105 | Grace Crescent | Post 2008 Development (Residence) | G | N | 66 | 61 | 67 | 63 | 66 | 62 | 68 | 63 | 1.3 | 1.2 | 1.2 | 1.2 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_105 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 67 | 63 | 70 | 65 | 68 | 64 | 70 | 66 | 2.3 | 2.2 | 2.3 | 2.3 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_106 | Grace Crescent | Post 2008 Development (Residence) | G | N | 64 | 60 | 65 | 60 | 65 | 60 | 65 | 61 | 0.8 | 0.8 | 0.8 | 0.8 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_106 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 66 | 62 | 68 | 64 | 67 | 62 | 69 | 64 | 1.9 | 1.9 | 1.9 | 1.9 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_107 | Grace Crescent | Post 2008 Development (Residence) | G | N | 64 | 60 | 65 | 61 | 65 | 61 | 66 | 62 | 1 | 1.1 | 1 | 1 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_107 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 66 | 62 | 68 | 64 | 67 | 63 | 69 | 64 | 1.9 | 1.9 | 1.9 | 1.9 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_108 | Grace Crescent | Post 2008 Development (Residence) | G | N | 65 | 61 | 66 | 62 | 66 | 61 | 67 | 63 | 1.2 | 1.2 | 1.2 | 1.2 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_108 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 66 | 62 | 68 | 64 | 67 | 63 | 69 | 65 | 1.9 | 1.8 | 1.8 | 1.9 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_109 | Grace Crescent | Post 2008 Development (Residence) | G | N | 64 | 60 | 66 | 61 | 65 | 61 | 66 | 62 | 1.3 | 1.2 | 1.2 | 1.2 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_109 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 66 | 62 | 68 | 63 | 67 | 62 | 68 | 64 | 1.6 | 1.7 | 1.7 | 1.6 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_110 | Grace Crescent | Post 2008 Development (Residence) | G | N | 63 | 58 | 63 | 59 | 63 | 59 | 64 | 60 | 0.7 | 0.6 | 0.7 | 0.6 | 60 | 55 | NO | YES | NO | | |
| 4 | 4_110 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 64 | 60 | 65 | 61 | 65 | 61 | 66 | 62 | 1 | 1 | 1 | 1 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_111 | Grace Crescent | Post 2008 Development (Residence) | G | N | 63 | 58 | 63 | 59 | 63 | 59 | 64 | 60 | 0.6 | 0.6 | 0.6 | 0.6 | 60 | 55 | NO | YES | NO | | |
| 4 | 4_111 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 64 | 60 | 65 | 61 | 65 | 61 | 66 | 62 | 1 | 1.1 | 1 | 1 | 60 | 55 | YES | YES | NO | | |
| 4 | 4_112 | Grace Crescent | Post 2008 Development (Residence) | G | N | 63 | 59 | 64 | 60 | 64 | 59 | 64 | 60 | 0.9 | 0.9 | 0.8 | 0.8 | 60 | 55 | NO | YES | NO | | |
| 4 | 4_112 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 64 | 60 | 65 | 61 | 65 | 61 | 66 | 62 | 1 | 1.1 | 1 | 1 | 60 | 55 | YES | YES | NO | | |

| NCA | NCA ID | Receiver Address | Receiver Description | Facade | | Opening Year 2019 | | | | Design Year 2029 | | | | Increase (Build - No Build) | | | | RNP External Noise Criteria | | Exposed to Acute Noise Levels | | Consider further treatment? | | |
|-----|--------|------------------|-----------------------------------|--------|-------------|-------------------|-------|-------|-------|------------------|-------|-------|-------|-----------------------------|-------|------|-------|-----------------------------|-------|-------------------------------|----------------|-----------------------------|-----|-------|
| | | | | | | No Build | | Build | | No Build | | Build | | 2019 | | 2029 | | | | | | | | |
| | | | | Floor | Orientation | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | | DAY | NIGHT |
| | | | | | | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB | dB | dB | dB | dB(A) | dB(A) | ≥ 65dB LAeq,15h | ≥ 60dB LAeq,9h | | | |
| 4 | 4_113 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 62 | 58 | 62 | 58 | 62 | 58 | 63 | 59 | 0.7 | 0.6 | 0.7 | 0.7 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_113 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 63 | 59 | 64 | 60 | 64 | 60 | 64 | 60 | 0.7 | 0.7 | 0.7 | 0.7 | 60 | 55 | NO | YES | NO | | |
| 4 | 4_114 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 60 | 56 | 61 | 57 | 61 | 57 | 62 | 57 | 0.6 | 0.6 | 0.6 | 0.7 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_114 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 62 | 57 | 62 | 58 | 62 | 58 | 63 | 59 | 0.6 | 0.6 | 0.6 | 0.6 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_115 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 61 | 57 | 61 | 57 | 62 | 57 | 62 | 58 | 0.5 | 0.6 | 0.5 | 0.5 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_115 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 62 | 58 | 63 | 59 | 63 | 59 | 63 | 59 | 0.6 | 0.5 | 0.6 | 0.6 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_116 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 60 | 56 | 61 | 56 | 61 | 57 | 61 | 57 | 0.5 | 0.5 | 0.5 | 0.5 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_116 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 62 | 57 | 62 | 58 | 62 | 58 | 63 | 58 | 0.4 | 0.5 | 0.4 | 0.4 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_117 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 59 | 54 | 59 | 55 | 59 | 55 | 60 | 56 | 0.5 | 0.5 | 0.5 | 0.6 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_117 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 60 | 56 | 61 | 56 | 61 | 56 | 61 | 57 | 0.5 | 0.4 | 0.5 | 0.4 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_118 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 59 | 55 | 59 | 55 | 59 | 55 | 60 | 56 | 0.5 | 0.4 | 0.5 | 0.5 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_118 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 60 | 56 | 61 | 56 | 61 | 57 | 61 | 57 | 0.4 | 0.4 | 0.3 | 0.4 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_119 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 58 | 54 | 59 | 54 | 59 | 54 | 59 | 55 | 0.5 | 0.5 | 0.4 | 0.4 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_119 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 59 | 55 | 60 | 56 | 60 | 56 | 60 | 56 | 0.4 | 0.4 | 0.4 | 0.3 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_120 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 56 | 52 | 57 | 52 | 57 | 53 | 57 | 53 | 0.4 | 0.5 | 0.4 | 0.4 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_120 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 58 | 53 | 58 | 54 | 58 | 54 | 59 | 54 | 0.3 | 0.3 | 0.3 | 0.3 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_121 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 57 | 53 | 57 | 53 | 58 | 53 | 58 | 54 | 0.4 | 0.3 | 0.4 | 0.4 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_121 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 58 | 54 | 59 | 54 | 59 | 55 | 59 | 55 | 0.3 | 0.2 | 0.3 | 0.3 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_122 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 56 | 52 | 57 | 52 | 57 | 53 | 57 | 53 | 0.3 | 0.3 | 0.3 | 0.3 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_122 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 58 | 53 | 58 | 54 | 58 | 54 | 58 | 54 | 0.2 | 0.2 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_123 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 54 | 49 | 54 | 50 | 54 | 50 | 55 | 50 | 0.3 | 0.3 | 0.3 | 0.3 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_123 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 55 | 51 | 56 | 51 | 56 | 52 | 56 | 52 | 0.2 | 0.1 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_124 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 55 | 51 | 56 | 51 | 56 | 52 | 56 | 52 | 0.2 | 0.3 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_124 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 57 | 53 | 57 | 53 | 57 | 53 | 57 | 53 | 0.1 | 0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_125 | Grace Crescent | Post 2008 Development (Residence) | G | W | 54 | 50 | 54 | 50 | 54 | 50 | 55 | 50 | 0.2 | 0.2 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_125 | Grace Crescent | Post 2008 Development (Residence) | 1 | W | 55 | 51 | 56 | 51 | 56 | 52 | 56 | 52 | 0.1 | 0.1 | 0 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_126 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 53 | 49 | 53 | 49 | 54 | 49 | 54 | 50 | 0.2 | 0.2 | 0.3 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_126 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 55 | 50 | 55 | 51 | 55 | 51 | 55 | 51 | 0.1 | 0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_127 | Grace Crescent | Post 2008 Development (Residence) | G | W | 53 | 49 | 54 | 49 | 54 | 50 | 54 | 50 | 0.2 | 0.2 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_127 | Grace Crescent | Post 2008 Development (Residence) | 1 | W | 55 | 51 | 55 | 51 | 56 | 51 | 56 | 51 | 0 | 0.1 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_128 | Grace Crescent | Post 2008 Development (Residence) | G | W | 52 | 47 | 52 | 48 | 52 | 48 | 52 | 48 | 0.1 | 0.2 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_128 | Grace Crescent | Post 2008 Development (Residence) | 1 | W | 53 | 49 | 53 | 49 | 54 | 50 | 54 | 50 | 0.1 | 0.1 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_129 | Grace Crescent | Post 2008 Development (Residence) | G | W | 52 | 47 | 52 | 47 | 52 | 48 | 52 | 48 | 0.2 | 0.2 | 0.1 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_129 | Grace Crescent | Post 2008 Development (Residence) | 1 | W | 53 | 49 | 53 | 49 | 54 | 50 | 54 | 50 | 0.1 | 0 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_130 | Grace Crescent | Post 2008 Development (Residence) | G | W | 51 | 47 | 51 | 47 | 52 | 48 | 52 | 48 | 0.2 | 0.2 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_130 | Grace Crescent | Post 2008 Development (Residence) | 1 | W | 53 | 49 | 53 | 49 | 54 | 49 | 54 | 49 | 0.1 | 0.1 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_131 | Grace Crescent | Post 2008 Development (Residence) | G | W | 51 | 47 | 51 | 47 | 52 | 47 | 52 | 48 | 0.2 | 0.1 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_131 | Grace Crescent | Post 2008 Development (Residence) | 1 | W | 53 | 48 | 53 | 48 | 53 | 49 | 53 | 49 | 0.1 | 0.1 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_132 | Grace Crescent | Post 2008 Development (Residence) | G | W | 51 | 47 | 51 | 47 | 51 | 47 | 52 | 47 | 0.2 | 0.1 | 0.2 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_132 | Grace Crescent | Post 2008 Development (Residence) | 1 | W | 52 | 48 | 52 | 48 | 53 | 49 | 53 | 49 | 0 | 0 | 0 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_133 | Grace Crescent | Post 2008 Development (Residence) | G | W | 51 | 46 | 51 | 47 | 51 | 47 | 51 | 47 | 0.1 | 0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_133 | Grace Crescent | Post 2008 Development (Residence) | 1 | W | 52 | 48 | 52 | 48 | 53 | 49 | 53 | 49 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_134 | Grace Crescent | Post 2008 Development (Residence) | G | N | 51 | 46 | 51 | 47 | 51 | 47 | 51 | 47 | 0.1 | 0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_134 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 53 | 48 | 53 | 48 | 53 | 49 | 53 | 49 | 0 | 0 | 0.1 | 0 | 60 | 55 | NO | NO | NO | | |

| NCA | NCA ID | Receiver Address | Receiver Description | Facade | | Opening Year 2019 | | | | Design Year 2029 | | | | Increase (Build - No Build) | | | | RNP External Noise Criteria | | Exposed to Acute Noise Levels | | Consider further treatment? | | |
|-----|--------|------------------|-----------------------------------|--------|-------------|-------------------|-------|-------|-------|------------------|-------|-------|-------|-----------------------------|-------|------|-------|-----------------------------|-------|-------------------------------|----------------|-----------------------------|-----|-------|
| | | | | | | No Build | | Build | | No Build | | Build | | 2019 | | 2029 | | | | | | | | |
| | | | | Floor | Orientation | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | | DAY | NIGHT |
| | | | | | | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB | dB | dB | dB | dB(A) | dB(A) | ≥ 65dB LAeq,15h | ≥ 60dB LAeq,9h | | | |
| 4 | 4_135 | Grace Crescent | Post 2008 Development (Residence) | G | N | 51 | 47 | 51 | 47 | 52 | 48 | 52 | 48 | 0.1 | 0 | 0.1 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_135 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 53 | 49 | 53 | 49 | 53 | 49 | 53 | 49 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_136 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 51 | 47 | 52 | 47 | 52 | 48 | 52 | 48 | 0.1 | 0.1 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_136 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 53 | 49 | 53 | 49 | 54 | 49 | 54 | 49 | 0 | 0 | 0 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_137 | Grace Crescent | Post 2008 Development (Residence) | G | N | 54 | 49 | 54 | 50 | 54 | 50 | 55 | 50 | 0.5 | 0.4 | 0.5 | 0.5 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_137 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 58 | 54 | 58 | 54 | 58 | 54 | 59 | 55 | 0.3 | 0.3 | 0.3 | 0.3 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_138 | Grace Crescent | Post 2008 Development (Residence) | G | N | 53 | 48 | 53 | 49 | 53 | 49 | 53 | 49 | 0.2 | 0.2 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_138 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 56 | 52 | 56 | 52 | 57 | 52 | 57 | 52 | 0.1 | 0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_139 | Grace Crescent | Post 2008 Development (Residence) | G | N | 52 | 48 | 52 | 48 | 52 | 48 | 53 | 49 | 0.5 | 0.4 | 0.5 | 0.5 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_139 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 55 | 51 | 56 | 52 | 56 | 51 | 56 | 52 | 0.8 | 0.8 | 0.7 | 0.7 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_140 | Grace Crescent | Post 2008 Development (Residence) | G | N | 53 | 49 | 53 | 49 | 54 | 50 | 54 | 50 | 0.1 | 0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_140 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 58 | 54 | 58 | 53 | 59 | 54 | 58 | 54 | -0.2 | -0.3 | -0.2 | -0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_141 | Grace Crescent | Post 2008 Development (Residence) | G | N | 53 | 49 | 53 | 49 | 54 | 50 | 54 | 50 | 0 | 0.1 | 0 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_141 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 58 | 54 | 58 | 54 | 58 | 54 | 58 | 54 | -0.1 | 0 | -0.1 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_142 | Grace Crescent | Post 2008 Development (Residence) | G | N | 52 | 47 | 52 | 47 | 52 | 48 | 52 | 48 | 0.1 | 0.1 | 0.1 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_142 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 55 | 51 | 55 | 51 | 56 | 52 | 56 | 52 | -0.1 | -0.2 | -0.1 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_143 | Grace Crescent | Post 2008 Development (Residence) | G | N | 53 | 49 | 53 | 49 | 54 | 49 | 54 | 50 | 0.2 | 0.1 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_143 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 58 | 54 | 58 | 53 | 59 | 54 | 58 | 54 | -0.3 | -0.3 | -0.3 | -0.3 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_144 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 53 | 49 | 53 | 49 | 54 | 50 | 54 | 50 | 0.1 | 0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_144 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 58 | 54 | 58 | 54 | 59 | 55 | 58 | 54 | -0.2 | -0.3 | -0.3 | -0.3 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_145 | Grace Crescent | Post 2008 Development (Residence) | G | N | 51 | 47 | 51 | 47 | 52 | 48 | 52 | 48 | -0.1 | 0 | -0.1 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_145 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 55 | 51 | 55 | 51 | 56 | 52 | 56 | 52 | -0.1 | -0.1 | -0.1 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_146 | Grace Crescent | Post 2008 Development (Residence) | G | N | 53 | 49 | 53 | 49 | 54 | 49 | 54 | 50 | 0.1 | 0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_146 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 56 | 52 | 56 | 52 | 57 | 53 | 57 | 53 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_147 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 55 | 51 | 55 | 51 | 56 | 52 | 56 | 52 | 0.2 | 0.2 | 0.2 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_147 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 59 | 55 | 59 | 55 | 59 | 55 | 59 | 55 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_148 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 54 | 50 | 55 | 50 | 55 | 51 | 55 | 51 | 0.2 | 0.2 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_148 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 58 | 53 | 58 | 53 | 58 | 54 | 58 | 54 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_149 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 52 | 48 | 52 | 48 | 52 | 48 | 52 | 48 | 0 | -0.1 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_149 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 56 | 52 | 56 | 51 | 57 | 52 | 56 | 52 | -0.2 | -0.2 | -0.2 | -0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_150 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 52 | 48 | 52 | 48 | 53 | 48 | 53 | 48 | 0.1 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_150 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 56 | 52 | 56 | 52 | 57 | 53 | 57 | 52 | -0.2 | -0.2 | -0.2 | -0.3 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_151 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 52 | 48 | 52 | 48 | 53 | 48 | 53 | 48 | 0 | 0 | -0.1 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_151 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 56 | 52 | 56 | 52 | 57 | 52 | 56 | 52 | -0.3 | -0.2 | -0.3 | -0.3 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_152 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 50 | 46 | 50 | 46 | 51 | 47 | 51 | 46 | -0.1 | -0.1 | -0.1 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_152 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 55 | 50 | 54 | 50 | 55 | 51 | 55 | 51 | -0.3 | -0.3 | -0.4 | -0.3 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_153 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 52 | 47 | 52 | 47 | 52 | 48 | 52 | 48 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_153 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 55 | 51 | 55 | 51 | 56 | 52 | 56 | 52 | -0.2 | -0.3 | -0.2 | -0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_154 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 51 | 47 | 51 | 47 | 52 | 48 | 52 | 48 | 0 | -0.1 | -0.1 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_154 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 55 | 51 | 55 | 50 | 55 | 51 | 55 | 51 | -0.2 | -0.2 | -0.2 | -0.3 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_155 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 49 | 45 | 49 | 45 | 50 | 46 | 50 | 45 | -0.1 | -0.1 | 0 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_155 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 53 | 49 | 53 | 49 | 54 | 50 | 54 | 50 | -0.1 | -0.2 | -0.2 | -0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_156 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 51 | 47 | 51 | 47 | 52 | 47 | 51 | 47 | -0.1 | -0.1 | -0.1 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_156 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 54 | 50 | 54 | 50 | 55 | 51 | 55 | 51 | -0.1 | -0.1 | -0.2 | -0.2 | 60 | 55 | NO | NO | NO | | |

| NCA | NCA ID | Receiver Address | Receiver Description | Facade | | Opening Year 2019 | | | | Design Year 2029 | | | | Increase (Build - No Build) | | | | RNP External Noise Criteria | | Exposed to Acute Noise Levels | | Consider further treatment? | | |
|-----|--------|------------------|-----------------------------------|--------|-------------|-------------------|-------|-------|-------|------------------|-------|-------|-------|-----------------------------|-------|------|-------|-----------------------------|-------|-------------------------------|----------------|-----------------------------|-----|-------|
| | | | | | | No Build | | Build | | No Build | | Build | | 2019 | | 2029 | | | | | | | | |
| | | | | Floor | Orientation | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | | DAY | NIGHT |
| | | | | | | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB | dB | dB | dB | dB(A) | dB(A) | ≥ 65dB LAeq,15h | ≥ 60dB LAeq,9h | | | |
| 4 | 4_157 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 51 | 46 | 51 | 46 | 51 | 47 | 51 | 47 | 0 | -0.1 | -0.1 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_157 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 54 | 50 | 54 | 49 | 54 | 50 | 54 | 50 | -0.2 | -0.2 | -0.1 | -0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_158 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 49 | 44 | 49 | 44 | 49 | 45 | 49 | 45 | -0.1 | -0.1 | 0 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_158 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 53 | 48 | 53 | 48 | 53 | 49 | 53 | 49 | -0.2 | -0.2 | -0.2 | -0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_159 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 50 | 46 | 50 | 46 | 51 | 47 | 51 | 47 | 0 | -0.1 | -0.1 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_159 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 53 | 49 | 53 | 49 | 54 | 50 | 54 | 50 | -0.1 | -0.2 | -0.2 | -0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_160 | Grace Crescent | Post 2008 Development (Residence) | G | W | 50 | 45 | 50 | 45 | 50 | 46 | 50 | 46 | -0.1 | 0 | -0.1 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_160 | Grace Crescent | Post 2008 Development (Residence) | 1 | W | 53 | 48 | 53 | 48 | 53 | 49 | 53 | 49 | -0.1 | -0.1 | -0.2 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_161 | Grace Crescent | Post 2008 Development (Residence) | G | W | 47 | 43 | 47 | 43 | 48 | 44 | 48 | 43 | -0.2 | -0.2 | -0.2 | -0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_161 | Grace Crescent | Post 2008 Development (Residence) | 1 | W | 51 | 46 | 50 | 46 | 51 | 47 | 51 | 47 | -0.3 | -0.3 | -0.3 | -0.3 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_162 | Grace Crescent | Post 2008 Development (Residence) | G | W | 50 | 45 | 49 | 45 | 50 | 46 | 50 | 46 | -0.2 | -0.1 | -0.2 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_162 | Grace Crescent | Post 2008 Development (Residence) | 1 | W | 52 | 48 | 52 | 48 | 53 | 49 | 53 | 48 | -0.2 | -0.2 | -0.1 | -0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_163 | Grace Crescent | Post 2008 Development (Residence) | G | N | 51 | 46 | 51 | 47 | 51 | 47 | 51 | 47 | 0.1 | 0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_163 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 54 | 50 | 54 | 50 | 54 | 50 | 54 | 50 | 0 | 0 | 0 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_164 | Grace Crescent | Post 2008 Development (Residence) | G | N | 51 | 47 | 51 | 47 | 51 | 47 | 51 | 47 | 0.1 | 0.1 | 0 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_164 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 54 | 49 | 54 | 49 | 54 | 50 | 54 | 50 | 0 | 0 | -0.1 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_165 | Grace Crescent | Post 2008 Development (Residence) | G | N | 50 | 46 | 50 | 46 | 51 | 47 | 51 | 46 | -0.1 | -0.2 | -0.1 | -0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_165 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 53 | 49 | 53 | 49 | 54 | 50 | 53 | 49 | -0.3 | -0.3 | -0.3 | -0.3 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_166 | Grace Crescent | Post 2008 Development (Residence) | G | N | 52 | 47 | 52 | 47 | 52 | 48 | 52 | 48 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_166 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 54 | 50 | 54 | 50 | 55 | 51 | 55 | 50 | 0 | -0.1 | -0.1 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_167 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 52 | 47 | 52 | 47 | 52 | 48 | 52 | 48 | 0 | 0 | -0.1 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_167 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 54 | 50 | 54 | 50 | 55 | 51 | 55 | 50 | -0.1 | -0.1 | -0.2 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_168 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 52 | 47 | 51 | 47 | 52 | 48 | 52 | 48 | -0.2 | -0.2 | -0.1 | -0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_168 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 54 | 50 | 54 | 50 | 55 | 50 | 54 | 50 | -0.2 | -0.2 | -0.2 | -0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_169 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 51 | 47 | 51 | 47 | 52 | 48 | 52 | 48 | -0.1 | -0.1 | -0.1 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_169 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 54 | 50 | 54 | 49 | 55 | 50 | 54 | 50 | -0.3 | -0.3 | -0.4 | -0.3 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_170 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 52 | 48 | 52 | 48 | 53 | 48 | 53 | 48 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_170 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 55 | 50 | 54 | 50 | 55 | 51 | 55 | 51 | -0.2 | -0.2 | -0.1 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_171 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 52 | 47 | 52 | 47 | 52 | 48 | 52 | 48 | 0 | 0 | -0.1 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_171 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 54 | 50 | 54 | 50 | 55 | 51 | 55 | 50 | -0.2 | -0.2 | -0.2 | -0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_172 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 52 | 47 | 52 | 47 | 52 | 48 | 52 | 48 | 0.1 | 0.1 | 0 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_172 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 54 | 50 | 54 | 50 | 55 | 51 | 55 | 51 | -0.1 | -0.2 | -0.1 | -0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_173 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 51 | 47 | 51 | 47 | 52 | 47 | 51 | 47 | -0.1 | -0.1 | -0.2 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_173 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 54 | 50 | 54 | 49 | 55 | 50 | 54 | 50 | -0.3 | -0.3 | -0.2 | -0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_174 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 51 | 47 | 51 | 47 | 52 | 48 | 52 | 48 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_174 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 54 | 50 | 54 | 50 | 55 | 51 | 55 | 51 | 0 | -0.1 | -0.1 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_175 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 51 | 47 | 51 | 47 | 52 | 47 | 52 | 47 | 0.1 | 0.1 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_175 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 54 | 50 | 54 | 50 | 55 | 51 | 55 | 50 | -0.1 | -0.1 | -0.1 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_176 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 51 | 47 | 51 | 47 | 51 | 47 | 51 | 47 | 0.1 | 0.1 | 0 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_176 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 54 | 50 | 54 | 50 | 55 | 51 | 55 | 50 | 0 | -0.1 | 0 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_177 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 50 | 46 | 50 | 46 | 51 | 47 | 51 | 47 | 0.1 | 0.1 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_177 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 54 | 50 | 54 | 50 | 55 | 50 | 55 | 50 | -0.1 | 0 | -0.1 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_178 | Grace Crescent | Post 2008 Development (Residence) | G | NE | 51 | 47 | 52 | 47 | 52 | 48 | 52 | 48 | 0.2 | 0.2 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_178 | Grace Crescent | Post 2008 Development (Residence) | 1 | NE | 55 | 51 | 56 | 51 | 56 | 52 | 56 | 52 | 0.2 | 0.3 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |

| NCA | NCA ID | Receiver Address | Receiver Description | Facade | | Opening Year 2019 | | | | Design Year 2029 | | | | Increase (Build - No Build) | | | | RNP External Noise Criteria | | Exposed to Acute Noise Levels | | Consider further treatment? | | |
|-----|--------|------------------|-----------------------------------|--------|-------------|-------------------|-------|-------|-------|------------------|-------|-------|-------|-----------------------------|-------|------|-------|-----------------------------|-------|-------------------------------|----------------|-----------------------------|-----|-------|
| | | | | | | No Build | | Build | | No Build | | Build | | 2019 | | 2029 | | | | | | | | |
| | | | | Floor | Orientation | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | | DAY | NIGHT |
| | | | | | | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB | dB | dB | dB | dB(A) | dB(A) | ≥ 65dB LAeq,15h | ≥ 60dB LAeq,9h | | | |
| 4 | 4_179 | Grace Crescent | Post 2008 Development (Residence) | G | N | 51 | 46 | 50 | 46 | 51 | 47 | 51 | 47 | -0.1 | -0.1 | -0.1 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_179 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 53 | 49 | 53 | 49 | 53 | 49 | 53 | 49 | 0 | 0 | 0 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_180 | Grace Crescent | Post 2008 Development (Residence) | G | N | 51 | 46 | 51 | 46 | 51 | 47 | 51 | 47 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_180 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 53 | 49 | 53 | 49 | 54 | 49 | 54 | 49 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_181 | Grace Crescent | Post 2008 Development (Residence) | G | N | 51 | 46 | 51 | 46 | 51 | 47 | 51 | 47 | 0 | -0.1 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_181 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 53 | 49 | 53 | 49 | 54 | 49 | 54 | 49 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_182 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 51 | 46 | 51 | 46 | 51 | 47 | 51 | 47 | 0 | 0 | 0 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_182 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 53 | 49 | 53 | 49 | 53 | 49 | 54 | 49 | 0.1 | 0.1 | 0.1 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_183 | Grace Crescent | Post 2008 Development (Residence) | G | N | 51 | 46 | 51 | 46 | 51 | 47 | 51 | 47 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_183 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 53 | 49 | 53 | 49 | 53 | 49 | 53 | 49 | 0.1 | 0.1 | 0 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_184 | Grace Crescent | Post 2008 Development (Residence) | G | N | 51 | 46 | 51 | 46 | 51 | 47 | 51 | 47 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_184 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 53 | 48 | 53 | 49 | 53 | 49 | 53 | 49 | 0.1 | 0.1 | 0.1 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_185 | Grace Crescent | Post 2008 Development (Residence) | G | N | 51 | 46 | 51 | 46 | 51 | 47 | 51 | 47 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_185 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 53 | 48 | 53 | 49 | 53 | 49 | 53 | 49 | 0.2 | 0.2 | 0.1 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_186 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 50 | 46 | 50 | 46 | 51 | 47 | 51 | 47 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_186 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 52 | 48 | 53 | 48 | 53 | 49 | 53 | 49 | 0.2 | 0.2 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_187 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 51 | 46 | 51 | 46 | 51 | 47 | 51 | 47 | 0 | 0 | -0.1 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_187 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 53 | 48 | 53 | 48 | 53 | 49 | 53 | 49 | 0.1 | 0.1 | 0.2 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_188 | Grace Crescent | Post 2008 Development (Residence) | G | N | 51 | 46 | 50 | 46 | 51 | 47 | 51 | 47 | -0.1 | -0.1 | -0.1 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_188 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 53 | 48 | 53 | 48 | 53 | 49 | 53 | 49 | -0.1 | -0.1 | 0 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_189 | Grace Crescent | Post 2008 Development (Residence) | G | N | 50 | 46 | 50 | 46 | 51 | 47 | 51 | 47 | -0.2 | -0.2 | -0.2 | -0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_189 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 53 | 49 | 53 | 48 | 53 | 49 | 53 | 49 | -0.2 | -0.2 | -0.2 | -0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_190 | Grace Crescent | Post 2008 Development (Residence) | G | N | 52 | 47 | 52 | 47 | 52 | 48 | 52 | 48 | 0.1 | 0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_190 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 54 | 50 | 55 | 50 | 55 | 51 | 55 | 51 | 0.1 | 0.1 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_191 | Grace Crescent | Post 2008 Development (Residence) | G | N | 50 | 46 | 50 | 46 | 51 | 47 | 51 | 47 | 0 | 0 | 0 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_191 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 53 | 49 | 53 | 49 | 54 | 49 | 54 | 50 | 0.1 | 0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_192 | Grace Crescent | Post 2008 Development (Residence) | G | N | 50 | 46 | 50 | 45 | 51 | 46 | 50 | 46 | -0.3 | -0.3 | -0.3 | -0.3 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_192 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 53 | 48 | 53 | 48 | 53 | 49 | 53 | 49 | -0.2 | -0.2 | -0.3 | -0.3 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_193 | Grace Crescent | Post 2008 Development (Residence) | G | N | 51 | 47 | 51 | 47 | 52 | 47 | 52 | 48 | 0.1 | 0.1 | 0.2 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_193 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 54 | 50 | 54 | 50 | 55 | 50 | 55 | 51 | 0.3 | 0.3 | 0.2 | 0.3 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_194 | Grace Crescent | Post 2008 Development (Residence) | G | N | 51 | 47 | 51 | 47 | 51 | 47 | 52 | 47 | 0.2 | 0.2 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_194 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 54 | 50 | 54 | 50 | 55 | 50 | 55 | 51 | 0.3 | 0.3 | 0.2 | 0.3 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_195 | Grace Crescent | Post 2008 Development (Residence) | G | N | 49 | 45 | 49 | 44 | 50 | 45 | 49 | 45 | -0.2 | -0.2 | -0.2 | -0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_195 | Grace Crescent | Post 2008 Development (Residence) | 1 | N | 53 | 48 | 52 | 48 | 53 | 49 | 53 | 49 | -0.3 | -0.3 | -0.4 | -0.3 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_196 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 51 | 47 | 51 | 47 | 51 | 47 | 52 | 47 | 0.3 | 0.3 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_196 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 54 | 50 | 54 | 50 | 55 | 50 | 55 | 51 | 0.1 | 0.2 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_197 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 51 | 47 | 51 | 47 | 52 | 47 | 52 | 48 | 0.2 | 0.2 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_197 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 54 | 50 | 54 | 50 | 55 | 51 | 55 | 51 | 0.1 | 0.1 | 0.1 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_198 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 51 | 46 | 51 | 46 | 51 | 47 | 51 | 47 | 0.2 | 0.1 | 0.1 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_198 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 54 | 49 | 54 | 49 | 54 | 50 | 54 | 50 | -0.1 | -0.1 | -0.1 | -0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_199 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 49 | 45 | 49 | 45 | 50 | 46 | 50 | 46 | -0.1 | -0.2 | -0.1 | -0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_199 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 53 | 49 | 53 | 49 | 54 | 50 | 53 | 49 | -0.4 | -0.4 | -0.4 | -0.5 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_200 | Grace Crescent | Post 2008 Development (Residence) | G | SE | 52 | 47 | 52 | 48 | 52 | 48 | 53 | 49 | 0.4 | 0.5 | 0.4 | 0.4 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_200 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 54 | 50 | 54 | 50 | 55 | 51 | 55 | 51 | 0.1 | 0.1 | 0.1 | 0 | 60 | 55 | NO | NO | NO | | |

| NCA | NCA ID | Receiver Address | Receiver Description | Facade | | Opening Year 2019 | | | | Design Year 2029 | | | | Increase (Build - No Build) | | | | RNP External Noise Criteria | | Exposed to Acute Noise Levels | | Consider further treatment? | | |
|-----|--------|--------------------|-----------------------------------|--------|-------------|-------------------|-------|-------|-------|------------------|-------|-------|-------|-----------------------------|-------|------|-------|-----------------------------|-------|-------------------------------|----------------|-----------------------------|-----|-------|
| | | | | | | No Build | | Build | | No Build | | Build | | 2019 | | 2029 | | | | | | | | |
| | | | | Floor | Orientation | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | | DAY | NIGHT |
| | | | | | | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB | dB | dB | dB | dB(A) | dB(A) | ≥ 65dB LAeq,15h | ≥ 60dB LAeq,9h | | | |
| 4 | 4_201 | Grace Crescent | Post 2008 Development (Residence) | G | SE | 52 | 48 | 53 | 48 | 53 | 49 | 53 | 49 | 0.5 | 0.5 | 0.6 | 0.5 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_201 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 54 | 50 | 55 | 50 | 55 | 51 | 55 | 51 | 0.1 | 0.1 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_202 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 49 | 45 | 49 | 45 | 50 | 46 | 50 | 45 | -0.1 | -0.1 | -0.1 | -0.2 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_202 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 53 | 49 | 53 | 49 | 54 | 50 | 54 | 49 | -0.3 | -0.3 | -0.2 | -0.3 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_203 | Grace Crescent | Post 2008 Development (Residence) | G | SE | 53 | 48 | 53 | 49 | 53 | 49 | 54 | 50 | 0.7 | 0.7 | 0.7 | 0.7 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_203 | Grace Crescent | Post 2008 Development (Residence) | 1 | SE | 54 | 50 | 55 | 50 | 55 | 51 | 55 | 51 | 0.6 | 0.5 | 0.6 | 0.5 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_204 | Grace Crescent | Post 2008 Development (Residence) | G | SE | 53 | 48 | 53 | 49 | 53 | 49 | 54 | 50 | 0.8 | 0.8 | 0.8 | 0.8 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_204 | Grace Crescent | Post 2008 Development (Residence) | 1 | SE | 54 | 50 | 55 | 51 | 55 | 51 | 55 | 51 | 0.6 | 0.5 | 0.6 | 0.5 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_205 | Grace Crescent | Post 2008 Development (Residence) | G | SE | 52 | 48 | 53 | 49 | 53 | 49 | 54 | 49 | 0.5 | 0.5 | 0.6 | 0.5 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_205 | Grace Crescent | Post 2008 Development (Residence) | 1 | SE | 54 | 50 | 54 | 50 | 55 | 50 | 55 | 51 | 0.4 | 0.4 | 0.4 | 0.5 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_206 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 48 | 43 | 48 | 43 | 48 | 44 | 48 | 44 | 0 | -0.1 | 0 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_206 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 52 | 48 | 52 | 48 | 52 | 48 | 52 | 48 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_207 | Grace Crescent | Post 2008 Development (Residence) | G | SE | 54 | 49 | 54 | 50 | 54 | 50 | 55 | 51 | 0.9 | 0.9 | 0.9 | 0.9 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_207 | Grace Crescent | Post 2008 Development (Residence) | 1 | SE | 55 | 51 | 56 | 52 | 56 | 52 | 56 | 52 | 0.6 | 0.7 | 0.6 | 0.7 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_208 | Grace Crescent | Post 2008 Development (Residence) | G | SE | 54 | 49 | 54 | 50 | 54 | 50 | 55 | 51 | 0.8 | 0.8 | 0.9 | 0.8 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_208 | Grace Crescent | Post 2008 Development (Residence) | 1 | SE | 55 | 51 | 56 | 52 | 56 | 52 | 56 | 52 | 0.6 | 0.5 | 0.6 | 0.5 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_209 | Grace Crescent | Post 2008 Development (Residence) | G | NW | 49 | 44 | 49 | 44 | 49 | 45 | 49 | 45 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_209 | Grace Crescent | Post 2008 Development (Residence) | 1 | NW | 53 | 48 | 53 | 48 | 53 | 49 | 53 | 49 | 0 | 0 | 0 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_210 | Grace Crescent | Post 2008 Development (Residence) | G | SE | 54 | 50 | 55 | 51 | 55 | 51 | 56 | 52 | 1 | 1 | 0.9 | 1 | 60 | 55 | NO | NO | NO | | |
| 4 | 4_210 | Grace Crescent | Post 2008 Development (Residence) | 1 | SE | 56 | 52 | 57 | 52 | 57 | 53 | 57 | 53 | 0.7 | 0.6 | 0.7 | 0.6 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_001 | 75 Hartigan Avenue | Post 2008 Development (Residence) | G | W | 51 | 47 | 52 | 48 | 52 | 48 | 53 | 49 | 0.8 | 0.9 | 0.8 | 0.8 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_001 | 75 Hartigan Avenue | Post 2008 Development (Residence) | 1 | E | 53 | 49 | 54 | 50 | 54 | 50 | 55 | 50 | 0.6 | 0.6 | 0.6 | 0.6 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_002 | 77 Hartigan Avenue | Post 2008 Development (Residence) | G | S | 52 | 48 | 53 | 49 | 53 | 49 | 54 | 50 | 0.9 | 0.9 | 0.9 | 0.9 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_002 | 77 Hartigan Avenue | Post 2008 Development (Residence) | 1 | S | 54 | 50 | 55 | 51 | 55 | 51 | 56 | 52 | 0.8 | 0.8 | 0.9 | 0.8 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_003 | 79 Hartigan Avenue | Post 2008 Development (Residence) | G | S | 54 | 50 | 55 | 51 | 55 | 50 | 56 | 52 | 1.3 | 1.4 | 1.4 | 1.4 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_003 | 79 Hartigan Avenue | Post 2008 Development (Residence) | 1 | S | 56 | 51 | 57 | 52 | 56 | 52 | 57 | 53 | 1.1 | 1.1 | 1.2 | 1.1 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_004 | 81 Hartigan Avenue | Post 2008 Development (Residence) | G | SW | 54 | 50 | 56 | 52 | 55 | 50 | 56 | 52 | 1.8 | 1.8 | 1.7 | 1.8 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_004 | 81 Hartigan Avenue | Post 2008 Development (Residence) | 1 | SW | 56 | 51 | 57 | 53 | 56 | 52 | 58 | 54 | 1.5 | 1.5 | 1.4 | 1.5 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_005 | 83 Hartigan Avenue | Post 2008 Development (Residence) | G | W | 55 | 51 | 57 | 53 | 56 | 52 | 58 | 54 | 2 | 2 | 2 | 2.1 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_005 | 83 Hartigan Avenue | Post 2008 Development (Residence) | 1 | S | 57 | 53 | 59 | 55 | 58 | 54 | 60 | 55 | 1.6 | 1.6 | 1.7 | 1.7 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_006 | 85 Hartigan Avenue | Post 2008 Development (Residence) | G | W | 56 | 52 | 58 | 54 | 57 | 53 | 59 | 55 | 2 | 2 | 2 | 2 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_007 | 87 Hartigan Avenue | Post 2008 Development (Residence) | G | S | 58 | 54 | 60 | 56 | 59 | 55 | 61 | 57 | 2.5 | 2.4 | 2.5 | 2.4 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_007 | 87 Hartigan Avenue | Post 2008 Development (Residence) | 1 | S | 60 | 56 | 62 | 58 | 61 | 56 | 63 | 59 | 2.1 | 2.2 | 2.1 | 2.1 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_008 | 89 Hartigan Avenue | Post 2008 Development (Residence) | G | S | 63 | 59 | 67 | 63 | 64 | 60 | 67 | 63 | 3.3 | 3.2 | 3.3 | 3.3 | 60 | 55 | YES | YES | NO | | |
| 5 | 5_008 | 89 Hartigan Avenue | Post 2008 Development (Residence) | 1 | S | 65 | 61 | 68 | 64 | 66 | 62 | 69 | 65 | 3.2 | 3.3 | 3.2 | 3.2 | 60 | 55 | YES | YES | NO | | |
| 5 | 5_009 | Hartigan Avenue | Post 2008 Development (Residence) | G | NE | 51 | 47 | 51 | 47 | 52 | 47 | 52 | 48 | 0.1 | 0.1 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_009 | Hartigan Avenue | Post 2008 Development (Residence) | 1 | SE | 53 | 49 | 54 | 50 | 54 | 50 | 55 | 50 | 0.7 | 0.7 | 0.7 | 0.7 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_010 | Hartigan Avenue | Post 2008 Development (Residence) | G | W | 50 | 46 | 51 | 46 | 50 | 46 | 51 | 47 | 0.9 | 0.9 | 1 | 0.9 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_010 | Hartigan Avenue | Post 2008 Development (Residence) | 1 | W | 53 | 49 | 54 | 50 | 54 | 50 | 55 | 51 | 0.8 | 0.8 | 0.8 | 0.9 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_011 | Hartigan Avenue | Post 2008 Development (Residence) | G | W | 51 | 47 | 52 | 48 | 52 | 47 | 52 | 48 | 0.7 | 0.8 | 0.8 | 0.8 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_011 | Hartigan Avenue | Post 2008 Development (Residence) | 1 | W | 53 | 49 | 54 | 50 | 54 | 50 | 55 | 51 | 1 | 0.9 | 0.9 | 0.9 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_012 | Hartigan Avenue | Post 2008 Development (Residence) | G | SW | 50 | 46 | 52 | 47 | 51 | 47 | 52 | 48 | 1.3 | 1.3 | 1.4 | 1.3 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_012 | Hartigan Avenue | Post 2008 Development (Residence) | 1 | S | 54 | 50 | 55 | 51 | 55 | 50 | 56 | 52 | 1 | 1.1 | 1.1 | 1.1 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_013 | Hartigan Avenue | Post 2008 Development (Residence) | G | W | 52 | 48 | 53 | 49 | 53 | 49 | 54 | 50 | 0.9 | 1 | 0.9 | 0.9 | 60 | 55 | NO | NO | NO | | |

| NCA | NCA ID | Receiver Address | Receiver Description | Facade | | Opening Year 2019 | | | | Design Year 2029 | | | | Increase (Build - No Build) | | | | RNP External Noise Criteria | | Exposed to Acute Noise Levels | | Consider further treatment? | | |
|-----|--------|------------------|-----------------------------------|--------|-------------|-------------------|-------|-------|-------|------------------|-------|-------|-------|-----------------------------|-------|------|-------|-----------------------------|-------|-------------------------------|----------------|-----------------------------|-----|-------|
| | | | | | | No Build | | Build | | No Build | | Build | | 2019 | | 2029 | | | | | | | | |
| | | | | Floor | Orientation | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | | DAY | NIGHT |
| | | | | | | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB | dB | dB | dB | dB(A) | dB(A) | ≥ 65dB LAeq,15h | ≥ 60dB LAeq,9h | | | |
| 5 | 5_014 | Hartigan Avenue | Post 2008 Development (Residence) | G | SW | 51 | 47 | 52 | 48 | 52 | 48 | 53 | 49 | 1.3 | 1.3 | 1.4 | 1.3 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_014 | Hartigan Avenue | Post 2008 Development (Residence) | 1 | S | 56 | 51 | 57 | 53 | 56 | 52 | 57 | 53 | 1.2 | 1.2 | 1.2 | 1.2 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_015 | Hartigan Avenue | Post 2008 Development (Residence) | G | W | 54 | 50 | 55 | 51 | 54 | 50 | 56 | 52 | 1.5 | 1.5 | 1.6 | 1.5 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_016 | Hartigan Avenue | Post 2008 Development (Residence) | G | S | 53 | 49 | 55 | 50 | 54 | 50 | 55 | 51 | 1.3 | 1.3 | 1.4 | 1.3 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_016 | Hartigan Avenue | Post 2008 Development (Residence) | 1 | S | 58 | 54 | 60 | 55 | 59 | 55 | 60 | 56 | 1.5 | 1.4 | 1.5 | 1.5 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_017 | Hartigan Avenue | Post 2008 Development (Residence) | G | SW | 56 | 51 | 57 | 53 | 56 | 52 | 58 | 54 | 1.9 | 1.8 | 1.9 | 1.8 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_018 | 3 Gorman Avenue | Post 2008 Development (Residence) | G | E | 52 | 48 | 53 | 48 | 53 | 48 | 53 | 49 | 0.5 | 0.6 | 0.5 | 0.6 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_018 | 3 Gorman Avenue | Post 2008 Development (Residence) | 1 | E | 54 | 50 | 55 | 50 | 54 | 50 | 55 | 51 | 0.6 | 0.6 | 0.7 | 0.6 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_019 | 5 Gorman Avenue | Post 2008 Development (Residence) | G | E | 52 | 48 | 53 | 49 | 53 | 49 | 53 | 49 | 0.6 | 0.7 | 0.7 | 0.6 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_019 | 5 Gorman Avenue | Post 2008 Development (Residence) | 1 | S | 54 | 50 | 55 | 51 | 55 | 51 | 56 | 52 | 1.1 | 1 | 1.1 | 1.1 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_020 | 7 Gorman Avenue | Post 2008 Development (Residence) | G | E | 53 | 48 | 53 | 49 | 53 | 49 | 54 | 50 | 0.7 | 0.8 | 0.8 | 0.8 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_021 | 9 Gorman Avenue | Post 2008 Development (Residence) | G | E | 53 | 49 | 54 | 50 | 54 | 50 | 55 | 51 | 1.2 | 1.2 | 1.1 | 1.2 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_021 | 9 Gorman Avenue | Post 2008 Development (Residence) | 1 | E | 56 | 51 | 57 | 53 | 56 | 52 | 57 | 53 | 1.1 | 1.2 | 1.1 | 1.2 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_022 | 10 Gorman Avenue | Post 2008 Development (Residence) | G | W | 52 | 48 | 53 | 49 | 52 | 48 | 53 | 49 | 0.9 | 1 | 1 | 1 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_022 | 10 Gorman Avenue | Post 2008 Development (Residence) | 1 | W | 54 | 50 | 55 | 51 | 55 | 51 | 56 | 52 | 1.1 | 1.1 | 1.2 | 1.1 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_023 | 11 Gorman Avenue | Post 2008 Development (Residence) | G | E | 54 | 50 | 56 | 51 | 55 | 51 | 56 | 52 | 1.4 | 1.5 | 1.5 | 1.5 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_023 | 11 Gorman Avenue | Post 2008 Development (Residence) | 1 | E | 56 | 52 | 58 | 54 | 57 | 53 | 58 | 54 | 1.4 | 1.4 | 1.4 | 1.4 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_024 | 12 Gorman Avenue | Post 2008 Development (Residence) | G | W | 52 | 48 | 53 | 49 | 53 | 49 | 54 | 50 | 1.2 | 1.1 | 1.2 | 1.1 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_024 | 12 Gorman Avenue | Post 2008 Development (Residence) | 1 | W | 55 | 51 | 56 | 52 | 55 | 51 | 57 | 53 | 1.3 | 1.2 | 1.3 | 1.2 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_025 | 13 Gorman Avenue | Post 2008 Development (Residence) | G | E | 56 | 51 | 57 | 53 | 56 | 52 | 58 | 54 | 1.7 | 1.8 | 1.8 | 1.8 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_025 | 13 Gorman Avenue | Post 2008 Development (Residence) | 1 | S | 59 | 55 | 61 | 56 | 59 | 55 | 61 | 57 | 1.8 | 1.7 | 1.8 | 1.7 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_026 | 14 Gorman Avenue | Post 2008 Development (Residence) | G | S | 55 | 51 | 56 | 52 | 55 | 51 | 57 | 53 | 1.5 | 1.5 | 1.4 | 1.4 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_026 | 14 Gorman Avenue | Post 2008 Development (Residence) | 1 | S | 58 | 54 | 59 | 55 | 58 | 54 | 60 | 56 | 1.4 | 1.5 | 1.5 | 1.5 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_027 | 15 Gorman Avenue | Post 2008 Development (Residence) | G | E | 57 | 53 | 59 | 55 | 58 | 54 | 60 | 56 | 2.1 | 2.1 | 2.2 | 2.1 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_028 | 16 Gorman Avenue | Post 2008 Development (Residence) | G | S | 60 | 56 | 63 | 58 | 61 | 57 | 63 | 59 | 2.3 | 2.4 | 2.3 | 2.3 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_029 | 17 Gorman Avenue | Post 2008 Development (Residence) | G | S | 64 | 59 | 67 | 63 | 64 | 60 | 68 | 64 | 3.6 | 3.6 | 3.7 | 3.6 | 60 | 55 | YES | YES | NO | | |
| 5 | 5_029 | 17 Gorman Avenue | Post 2008 Development (Residence) | 1 | S | 65 | 61 | 69 | 65 | 66 | 62 | 70 | 66 | 3.6 | 3.6 | 3.6 | 3.6 | 60 | 55 | YES | YES | NO | | |
| 5 | 5_030 | 19 Gorman Avenue | Post 2008 Development (Residence) | G | S | 64 | 59 | 67 | 63 | 64 | 60 | 68 | 64 | 3.4 | 3.5 | 3.4 | 3.4 | 60 | 55 | YES | YES | NO | | |
| 5 | 5_031 | 21 Gorman Avenue | Post 2008 Development (Residence) | G | S | 64 | 59 | 67 | 63 | 64 | 60 | 68 | 64 | 3.4 | 3.5 | 3.4 | 3.4 | 60 | 55 | YES | YES | NO | | |
| 5 | 5_031 | 21 Gorman Avenue | Post 2008 Development (Residence) | 1 | S | 65 | 61 | 69 | 65 | 66 | 62 | 69 | 65 | 3.4 | 3.4 | 3.5 | 3.5 | 60 | 55 | YES | YES | NO | | |
| 5 | 5_032 | 10 Burns Rd | Post 2008 Development (Residence) | G | S | 55 | 51 | 56 | 52 | 56 | 51 | 57 | 53 | 1.5 | 1.5 | 1.6 | 1.5 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_033 | 12 Burns Rd | Post 2008 Development (Residence) | G | E | 53 | 49 | 54 | 49 | 53 | 49 | 54 | 50 | 0.6 | 0.6 | 0.7 | 0.6 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_033 | 12 Burns Rd | Post 2008 Development (Residence) | 1 | S | 56 | 52 | 58 | 54 | 57 | 53 | 58 | 54 | 1.3 | 1.4 | 1.4 | 1.3 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_034 | Burns Road | Post 2008 Development (Residence) | G | S | 64 | 59 | 67 | 63 | 64 | 60 | 67 | 63 | 3 | 3.1 | 3.1 | 3.1 | 60 | 55 | YES | YES | NO | | |
| 5 | 5_034 | Burns Road | Post 2008 Development (Residence) | 1 | S | 67 | 63 | 71 | 67 | 68 | 64 | 72 | 68 | 4 | 4.1 | 4.1 | 4 | 60 | 55 | YES | YES | NO | | |
| 5 | 5_035 | Burns Road | Post 2008 Development (Residence) | G | S | 63 | 59 | 66 | 62 | 64 | 60 | 67 | 63 | 3 | 3 | 3 | 3 | 60 | 55 | YES | YES | NO | | |
| 5 | 5_035 | Burns Road | Post 2008 Development (Residence) | 1 | S | 67 | 63 | 71 | 67 | 68 | 64 | 71 | 67 | 3.8 | 3.8 | 3.8 | 3.8 | 60 | 55 | YES | YES | NO | | |
| 5 | 5_036 | Burns Road | Post 2008 Development (Residence) | G | S | 63 | 59 | 66 | 62 | 64 | 60 | 67 | 63 | 3 | 3 | 3 | 3 | 60 | 55 | YES | YES | NO | | |
| 5 | 5_036 | Burns Road | Post 2008 Development (Residence) | 1 | S | 67 | 63 | 71 | 66 | 68 | 63 | 71 | 67 | 3.7 | 3.7 | 3.7 | 3.7 | 60 | 55 | YES | YES | NO | | |
| 5 | 5_037 | Burns Road | Post 2008 Development (Residence) | G | S | 63 | 59 | 66 | 62 | 64 | 60 | 67 | 63 | 2.9 | 2.9 | 2.9 | 3 | 60 | 55 | YES | YES | NO | | |
| 5 | 5_037 | Burns Road | Post 2008 Development (Residence) | 1 | S | 67 | 63 | 71 | 67 | 68 | 64 | 72 | 68 | 3.9 | 3.9 | 3.9 | 3.9 | 60 | 55 | YES | YES | NO | | |
| 5 | 5_038 | Burns Road | Post 2008 Development (Residence) | G | S | 64 | 59 | 66 | 62 | 64 | 60 | 67 | 63 | 2.9 | 2.8 | 2.9 | 2.8 | 60 | 55 | YES | YES | NO | | |
| 5 | 5_038 | Burns Road | Post 2008 Development (Residence) | 1 | S | 67 | 63 | 71 | 67 | 68 | 64 | 72 | 68 | 3.9 | 3.9 | 4 | 3.9 | 60 | 55 | YES | YES | NO | | |
| 5 | 5_039 | Burns Road | Post 2008 Development (Residence) | G | S | 63 | 59 | 66 | 62 | 64 | 60 | 67 | 63 | 2.8 | 2.9 | 2.9 | 2.9 | 60 | 55 | YES | YES | NO | | |

| NCA | NCA ID | Receiver Address | Receiver Description | Facade | | Opening Year 2019 | | | | Design Year 2029 | | | | Increase (Build - No Build) | | | | RNP External Noise Criteria | | Exposed to Acute Noise Levels | | Consider further treatment? | | |
|-----|--------|--------------------|-----------------------------------|--------|-------------|-------------------|-------|-------|-------|------------------|-------|-------|-------|-----------------------------|-------|------|-------|-----------------------------|-------|-------------------------------|----------------|-----------------------------|-----|-------|
| | | | | | | No Build | | Build | | No Build | | Build | | 2019 | | 2029 | | | | | | | | |
| | | | | Floor | Orientation | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | | DAY | NIGHT |
| | | | | | | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB | dB | dB | dB | dB(A) | dB(A) | ≥ 65dB LAeq,15h | ≥ 60dB LAeq,9h | | | |
| 5 | 5_039 | Burns Road | Post 2008 Development (Residence) | 1 | S | 67 | 63 | 71 | 67 | 68 | 64 | 72 | 68 | 3.9 | 3.9 | 3.9 | 3.9 | 60 | 55 | YES | YES | NO | | |
| 5 | 5_040 | Burns Road | Post 2008 Development (Residence) | G | W | 59 | 55 | 61 | 57 | 60 | 56 | 62 | 58 | 2.1 | 2.1 | 2.2 | 2.2 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_040 | Burns Road | Post 2008 Development (Residence) | 1 | W | 61 | 57 | 63 | 59 | 62 | 57 | 64 | 60 | 2.3 | 2.3 | 2.3 | 2.3 | 60 | 55 | NO | YES | NO | | |
| 5 | 5_041 | Burns Road | Post 2008 Development (Residence) | G | W | 57 | 53 | 59 | 55 | 58 | 54 | 60 | 56 | 1.9 | 2 | 1.9 | 1.9 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_041 | Burns Road | Post 2008 Development (Residence) | 1 | W | 59 | 55 | 62 | 57 | 60 | 56 | 62 | 58 | 2.1 | 2.1 | 2.1 | 2.1 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_042 | Burns Road | Post 2008 Development (Residence) | G | W | 57 | 53 | 59 | 54 | 57 | 53 | 59 | 55 | 1.9 | 1.9 | 1.9 | 1.9 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_042 | Burns Road | Post 2008 Development (Residence) | 1 | W | 59 | 54 | 61 | 56 | 59 | 55 | 61 | 57 | 1.9 | 1.9 | 1.8 | 1.8 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_043 | Burns Road | Post 2008 Development (Residence) | G | W | 56 | 51 | 57 | 53 | 56 | 52 | 58 | 54 | 1.8 | 1.8 | 1.8 | 1.9 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_043 | Burns Road | Post 2008 Development (Residence) | 1 | W | 58 | 54 | 59 | 55 | 58 | 54 | 60 | 56 | 1.7 | 1.7 | 1.7 | 1.7 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_044 | Burns Road | Post 2008 Development (Residence) | G | W | 55 | 51 | 56 | 52 | 55 | 51 | 57 | 53 | 1.7 | 1.7 | 1.6 | 1.6 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_044 | Burns Road | Post 2008 Development (Residence) | 1 | W | 57 | 53 | 59 | 54 | 58 | 54 | 59 | 55 | 1.4 | 1.4 | 1.5 | 1.4 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_045 | Burns Road | Post 2008 Development (Residence) | G | W | 53 | 49 | 55 | 51 | 54 | 50 | 56 | 51 | 1.5 | 1.5 | 1.6 | 1.6 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_045 | Burns Road | Post 2008 Development (Residence) | 1 | W | 56 | 52 | 58 | 54 | 57 | 53 | 58 | 54 | 1.3 | 1.3 | 1.3 | 1.3 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_046 | Burns Road | Post 2008 Development (Residence) | G | SE | 56 | 52 | 58 | 53 | 56 | 52 | 58 | 54 | 1.7 | 1.8 | 1.7 | 1.7 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_046 | Burns Road | Post 2008 Development (Residence) | 1 | S | 59 | 54 | 60 | 56 | 59 | 55 | 61 | 57 | 1.6 | 1.7 | 1.7 | 1.7 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_047 | Burns Road | Post 2008 Development (Residence) | G | NE | 55 | 50 | 56 | 52 | 55 | 51 | 57 | 53 | 1.7 | 1.9 | 1.8 | 1.8 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_047 | Burns Road | Post 2008 Development (Residence) | 1 | NE | 57 | 52 | 59 | 54 | 57 | 53 | 59 | 55 | 1.9 | 2.1 | 2 | 2 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_048 | Burns Road | Post 2008 Development (Residence) | G | E | 55 | 50 | 56 | 52 | 55 | 51 | 57 | 53 | 1.7 | 1.8 | 1.8 | 1.8 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_048 | Burns Road | Post 2008 Development (Residence) | 1 | E | 57 | 52 | 59 | 54 | 57 | 53 | 59 | 55 | 1.8 | 1.9 | 1.9 | 1.9 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_049 | Burns Road | Post 2008 Development (Residence) | G | E | 55 | 50 | 56 | 52 | 55 | 51 | 57 | 53 | 1.5 | 1.5 | 1.6 | 1.6 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_049 | Burns Road | Post 2008 Development (Residence) | 1 | E | 57 | 53 | 59 | 54 | 57 | 53 | 59 | 55 | 1.7 | 1.7 | 1.7 | 1.7 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_050 | Burns Road | Post 2008 Development (Residence) | G | E | 55 | 50 | 56 | 52 | 55 | 51 | 56 | 52 | 1.3 | 1.4 | 1.4 | 1.4 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_050 | Burns Road | Post 2008 Development (Residence) | 1 | E | 57 | 52 | 58 | 54 | 57 | 53 | 59 | 55 | 1.4 | 1.4 | 1.5 | 1.5 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_051 | Burns Road | Post 2008 Development (Residence) | G | E | 54 | 50 | 56 | 51 | 55 | 51 | 56 | 52 | 1.2 | 1.2 | 1.3 | 1.3 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_051 | Burns Road | Post 2008 Development (Residence) | 1 | E | 57 | 52 | 58 | 54 | 57 | 53 | 58 | 54 | 1.2 | 1.3 | 1.3 | 1.3 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_052 | Burns Road | Post 2008 Development (Residence) | G | W | 53 | 49 | 54 | 50 | 54 | 50 | 55 | 50 | 0.9 | 0.9 | 1 | 0.9 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_052 | Burns Road | Post 2008 Development (Residence) | 1 | W | 55 | 51 | 56 | 52 | 56 | 52 | 57 | 53 | 0.9 | 0.9 | 1 | 0.9 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_053 | Burns Road | Post 2008 Development (Residence) | G | SW | 53 | 49 | 54 | 50 | 53 | 49 | 55 | 50 | 1.1 | 1.2 | 1.2 | 1.2 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_053 | Burns Road | Post 2008 Development (Residence) | 1 | SW | 55 | 51 | 56 | 52 | 56 | 52 | 57 | 53 | 1.1 | 1.1 | 1.1 | 1.1 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_054 | Burns Road | Post 2008 Development (Residence) | G | N | 54 | 49 | 54 | 49 | 54 | 50 | 54 | 50 | 0 | 0.1 | 0.1 | 0 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_054 | Burns Road | Post 2008 Development (Residence) | 1 | N | 56 | 51 | 56 | 51 | 56 | 52 | 56 | 52 | 0.1 | 0.1 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_055 | Burns Road | Post 2008 Development (Residence) | G | S | 53 | 49 | 54 | 50 | 53 | 49 | 55 | 51 | 1.4 | 1.5 | 1.4 | 1.4 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_055 | Burns Road | Post 2008 Development (Residence) | 1 | S | 56 | 51 | 57 | 53 | 56 | 52 | 57 | 53 | 1.4 | 1.5 | 1.5 | 1.4 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_056 | Burns Road | Post 2008 Development (Residence) | G | NE | 56 | 51 | 57 | 52 | 56 | 52 | 57 | 53 | 0.6 | 0.6 | 0.5 | 0.5 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_056 | Burns Road | Post 2008 Development (Residence) | 1 | NE | 58 | 53 | 58 | 54 | 58 | 54 | 59 | 55 | 0.7 | 0.7 | 0.7 | 0.7 | 60 | 55 | NO | NO | NO | | |
| 5 | 5_057 | 6 Windsor Road | | G | E | 65 | 61 | 67 | 63 | 66 | 62 | 68 | 63 | 1.9 | 2 | 1.9 | 1.9 | 60 | 55 | YES | YES | YES | | |
| 5 | 5_058 | 8 Windsor Road | | G | E | 67 | 62 | 68 | 63 | 67 | 63 | 68 | 64 | 1 | 1.1 | 1.1 | 1.1 | 60 | 55 | YES | YES | YES | | |
| 5 | 5_058 | 8 Windsor Road | | 1 | E | 69 | 65 | 70 | 66 | 70 | 65 | 70 | 66 | 0.8 | 0.8 | 0.8 | 0.8 | 60 | 55 | YES | YES | YES | | |
| 5 | 5_059 | 10 Windsor Road | | G | E | 67 | 62 | 68 | 63 | 67 | 63 | 68 | 64 | 0.8 | 0.9 | 0.8 | 0.8 | 60 | 55 | YES | YES | YES | | |
| 5 | 5_060 | 12 Windsor Road | | G | E | 67 | 63 | 68 | 64 | 68 | 64 | 68 | 64 | 0.7 | 0.7 | 0.6 | 0.6 | 60 | 55 | YES | YES | YES | | |
| 5 | 5_061 | 14-16 Windsor Road | | G | E | 68 | 63 | 69 | 64 | 68 | 64 | 69 | 65 | 0.8 | 0.8 | 0.8 | 0.8 | 60 | 55 | YES | YES | YES | | |
| 5 | 5_062 | 18-20 Windsor Road | | G | E | 67 | 63 | 68 | 63 | 67 | 63 | 68 | 64 | 0.8 | 0.8 | 0.8 | 0.8 | 60 | 55 | YES | YES | YES | | |
| 5 | 5_062 | 18-20 Windsor Road | | 1 | E | 69 | 65 | 70 | 65 | 70 | 65 | 70 | 66 | 0.7 | 0.7 | 0.8 | 0.7 | 60 | 55 | YES | YES | YES | | |
| 5 | 5_063 | 1 Arnold Avenue | | G | S | 64 | 60 | 65 | 61 | 65 | 61 | 66 | 62 | 1 | 1 | 1 | 1 | 60 | 55 | YES | YES | YES | | |

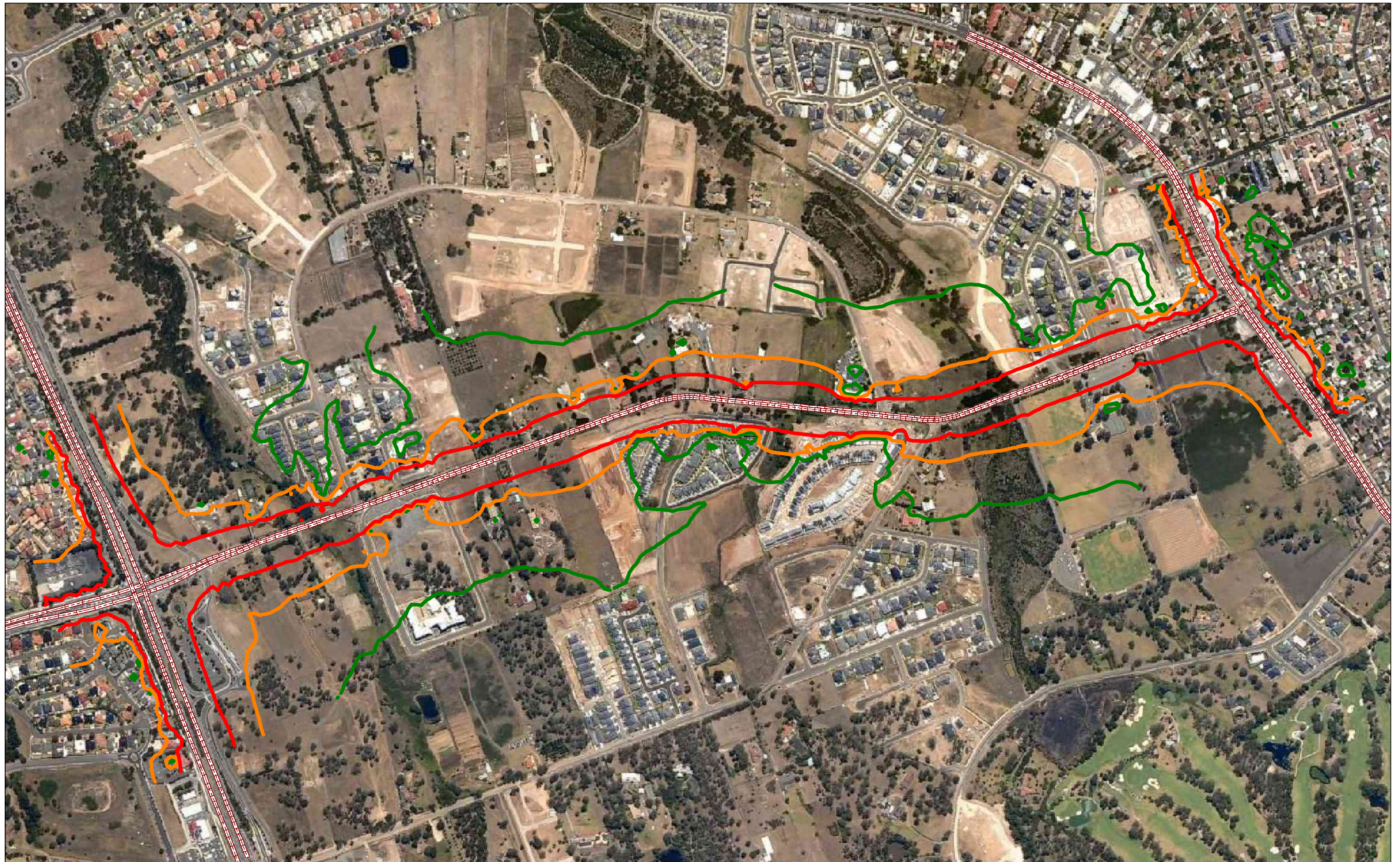
| NCA | NCA ID | Receiver Address | Receiver Description | Facade | | Opening Year 2019 | | | | Design Year 2029 | | | | Increase (Build - No Build) | | | | RNP External Noise Criteria | | Exposed to Acute Noise Levels | | Consider further treatment? | | |
|-----|--------|------------------------|--------------------------------------|--------|-------------|-------------------|-------|-------|-------|------------------|-------|-------|-------|-----------------------------|-------|------|-------|-----------------------------|-------|-------------------------------|----------------|-----------------------------|-----|-------|
| | | | | | | No Build | | Build | | No Build | | Build | | 2019 | | 2029 | | | | | | | | |
| | | | | Floor | Orientation | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | | DAY | NIGHT |
| | | | | | | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB | dB | dB | dB | dB(A) | dB(A) | ≥ 65dB LAeq,15h | ≥ 60dB LAeq,9h | | | |
| 5 | 5_064 | 22 Windsor Road | | G | E | 66 | 62 | 67 | 62 | 66 | 62 | 67 | 63 | 0.5 | 0.4 | 0.4 | 0.4 | 60 | 55 | YES | YES | YES | | |
| 5 | 5_065 | 24 Windsor Road | | G | E | 69 | 64 | 69 | 65 | 69 | 65 | 69 | 65 | 0.3 | 0.3 | 0.3 | 0.3 | 60 | 55 | YES | YES | YES | | |
| 5 | 5_066 | 26 Windsor Road | | G | E | 67 | 62 | 67 | 63 | 67 | 63 | 67 | 63 | 0.1 | 0.1 | 0.1 | 0.1 | 60 | 55 | YES | YES | YES | | |
| 5 | 5_066 | 26 Windsor Road | | 1 | E | 70 | 65 | 70 | 65 | 70 | 66 | 70 | 66 | 0.2 | 0.1 | 0.1 | 0.1 | 60 | 55 | YES | YES | YES | | |
| 5 | 5_067 | 28 Windsor Road | | G | E | 67 | 63 | 67 | 63 | 67 | 63 | 67 | 63 | 0.1 | 0.1 | 0.1 | 0 | 60 | 55 | YES | YES | YES | | |
| 6 | 6_001 | 2 Hector Court | | G | NE | 59 | 55 | 60 | 56 | 60 | 56 | 61 | 57 | 0.7 | 0.7 | 0.8 | 0.7 | 60 | 55 | NO | NO | NO | | |
| 6 | 6_002 | 2A Hector Court | | G | N | 56 | 52 | 57 | 53 | 57 | 53 | 58 | 53 | 0.8 | 0.7 | 0.8 | 0.8 | 60 | 55 | NO | NO | NO | | |
| 6 | 6_003 | 2B Hector Court | | G | N | 55 | 51 | 56 | 51 | 56 | 51 | 56 | 52 | 0.7 | 0.7 | 0.7 | 0.7 | 60 | 55 | NO | NO | NO | | |
| 6 | 6_004a | Memorial Avenue | Kellyville Cricket Club (Outdoor) | | | 61 | 56 | 61 | 56 | 61 | 56 | 61 | 56 | 0 | 0 | 0.1 | 0 | 60 | - | - | - | NO | | |
| 6 | 6_004b | Memorial Avenue | Kellyville Cricket Club (Building) | G | N | 63 | 59 | 63 | 59 | 63 | 59 | 63 | 59 | -0.1 | 0 | -0.1 | -0.1 | - | - | - | - | NO | | |
| 6 | 6_005 | Memorial Avenue | Kellyville Cricket Club (Residence?) | G | N | 69 | 65 | 68 | 64 | 70 | 66 | 69 | 65 | -1 | -1 | -1 | -1 | 60 | 55 | YES | YES | YES | | |
| 6 | 6_006 | Lot 59B Windsor Road | | G | E | 69 | 64 | 70 | 65 | 69 | 65 | 70 | 66 | 0.8 | 0.8 | 0.8 | 0.8 | 60 | 55 | YES | YES | YES | | |
| 6 | 6_007 | Windsor Road | Residence (Dilapidated) | G | E | 65 | 61 | 66 | 61 | 66 | 61 | 66 | 62 | 0.2 | 0.2 | 0.2 | 0.2 | 60 | 55 | YES | YES | NO | | |
| 7 | 7_008 | 1 President Road | | G | N | 56 | 52 | 56 | 52 | 57 | 52 | 57 | 52 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 7 | 7_009 | 1B President Road | | G | W | 61 | 56 | 61 | 56 | 61 | 57 | 61 | 57 | 0.1 | 0.1 | 0 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 7 | 7_011 | Lot 9 Windsor Road | Residence (Dilapidated) | G | W | 67 | 62 | 67 | 62 | 67 | 63 | 67 | 63 | 0 | -0.1 | -0.1 | -0.1 | 60 | 55 | YES | YES | NO | | |
| 7 | 7_012 | 3 Windsor Road | Repco | G | SW | 68 | 63 | 68 | 63 | 68 | 64 | 68 | 64 | -0.2 | -0.2 | -0.3 | -0.3 | - | - | - | - | NO | | |
| 7 | 7_013 | 5 Windsor Road | Caltex | G | SW | 71 | 66 | 70 | 66 | 71 | 67 | 71 | 67 | -0.2 | -0.2 | -0.2 | -0.2 | - | - | - | - | NO | | |
| 7 | 7_014 | 12 Benalla Ave | | G | S | 59 | 54 | 59 | 54 | 59 | 55 | 59 | 55 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 7 | 7_015 | 14 Benalla Ave | | G | W | 60 | 55 | 60 | 55 | 60 | 56 | 60 | 56 | 0 | 0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 7 | 7_016 | 16 Benalla Ave | | G | SW | 59 | 55 | 59 | 55 | 59 | 55 | 60 | 55 | 0.1 | 0.1 | 0.1 | 0 | 60 | 55 | NO | NO | NO | | |
| 7 | 7_017 | 18 Benalla Ave | | G | W | 65 | 60 | 65 | 60 | 65 | 61 | 65 | 61 | 0 | 0 | 0 | 0.1 | 60 | 55 | YES | YES | YES | | |
| 7 | 7_018 | 20 Benalla Ave | | G | SW | 65 | 60 | 65 | 60 | 65 | 61 | 65 | 61 | 0.1 | 0.1 | 0.1 | 0 | 60 | 55 | YES | YES | YES | | |
| 7 | 7_019 | 22 Benalla Ave | | G | SW | 65 | 60 | 65 | 60 | 65 | 61 | 65 | 61 | 0.2 | 0.1 | 0.2 | 0.1 | 60 | 55 | YES | YES | YES | | |
| 7 | 7_020 | 24 Benalla Ave | | G | SW | 66 | 61 | 66 | 61 | 66 | 62 | 66 | 62 | 0.1 | 0.2 | 0.1 | 0.2 | 60 | 55 | YES | YES | YES | | |
| 7 | 7_021 | 26 Benalla Ave | | G | SW | 57 | 53 | 57 | 53 | 58 | 53 | 58 | 54 | 0.1 | 0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 7 | 7_021 | 26 Benalla Ave | | 1 | SW | 62 | 57 | 62 | 57 | 62 | 58 | 62 | 58 | 0.2 | 0.2 | 0.2 | 0.3 | 60 | 55 | NO | NO | NO | | |
| 7 | 7_022 | 28 Benalla Ave | | G | SW | 58 | 54 | 58 | 54 | 59 | 54 | 59 | 54 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 7 | 7_023 | 30 Benalla Ave | | G | SW | 59 | 55 | 59 | 55 | 60 | 55 | 60 | 56 | 0.2 | 0.2 | 0.2 | 0.3 | 60 | 55 | NO | NO | NO | | |
| 7 | 7_024 | 32 Benalla Ave | | G | SW | 59 | 55 | 60 | 55 | 60 | 55 | 60 | 56 | 0.2 | 0.1 | 0.1 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 7 | 7_025 | 34 Benalla Ave | | G | SW | 59 | 54 | 59 | 54 | 59 | 55 | 59 | 55 | 0.1 | 0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 7 | 7_026 | 36 Benalla Ave | | G | W | 65 | 61 | 65 | 61 | 65 | 61 | 66 | 62 | 0.3 | 0.2 | 0.3 | 0.2 | 60 | 55 | YES | YES | YES | | |
| 7 | 7_027 | 38 Benalla Ave | | G | SW | 65 | 60 | 65 | 60 | 65 | 61 | 65 | 61 | 0.2 | 0.2 | 0.2 | 0.2 | 60 | 55 | YES | YES | YES | | |
| 7 | 7_028 | 40 Benalla Ave | | G | SW | 65 | 60 | 65 | 60 | 65 | 61 | 65 | 61 | 0 | 0 | 0 | 0 | 60 | 55 | YES | YES | YES | | |
| 7 | 7_029 | 42 Benalla Ave | | G | SW | 65 | 60 | 65 | 60 | 65 | 61 | 65 | 61 | 0 | 0 | 0 | 0 | 60 | 55 | YES | YES | YES | | |
| 7 | 7_030 | 44 Benalla Ave | | G | W | 58 | 53 | 58 | 54 | 58 | 54 | 58 | 54 | 0.2 | 0.1 | 0.1 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 7 | 7_031 | 46 Benalla Ave | | G | W | 57 | 52 | 57 | 52 | 57 | 53 | 57 | 53 | 0 | -0.1 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 7 | 7_031 | 46 Benalla Ave | | 1 | S | 60 | 56 | 60 | 56 | 60 | 56 | 61 | 56 | 0.1 | 0.2 | 0.2 | 0.2 | 60 | 55 | NO | NO | NO | | |
| 7 | 7_032 | 48 Benalla Ave | | G | SW | 56 | 51 | 55 | 51 | 56 | 52 | 56 | 52 | -0.1 | 0 | -0.1 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 7 | 7_033 | 50 Benalla Ave | | G | N | 55 | 50 | 54 | 50 | 55 | 51 | 55 | 51 | -0.1 | -0.1 | -0.1 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 7 | 7_033 | 50 Benalla Ave | | 1 | W | 58 | 53 | 58 | 54 | 58 | 54 | 58 | 54 | 0.1 | 0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 7 | 7_034 | Lot 1 Old Windsor Road | | G | W | 67 | 62 | 67 | 62 | 67 | 63 | 67 | 63 | 0 | -0.1 | -0.1 | -0.1 | 60 | 55 | YES | YES | YES | | |
| 7 | 7_034 | Lot 1 Old Windsor Road | | 1 | W | 70 | 65 | 69 | 65 | 70 | 66 | 70 | 65 | -0.1 | -0.1 | -0.1 | -0.2 | 60 | 55 | YES | YES | YES | | |
| 7 | 7_035 | 10 Hart Place | | G | W | 57 | 53 | 57 | 52 | 57 | 53 | 57 | 53 | -0.1 | -0.1 | 0 | 0 | 60 | 55 | NO | NO | NO | | |

| NCA | NCA ID | Receiver Address | Receiver Description | Facade | | Opening Year 2019 | | | | Design Year 2029 | | | | Increase (Build - No Build) | | | | RNP External Noise Criteria | | Exposed to Acute Noise Levels | | Consider further treatment? | | |
|-----|--------|----------------------|-----------------------------------|--------|-------------|-------------------|-------|-------|-------|------------------|-------|-------|-------|-----------------------------|-------|------|-------|-----------------------------|-------|-------------------------------|----------------|-----------------------------|-----|-------|
| | | | | | | No Build | | Build | | No Build | | Build | | 2019 | | 2029 | | | | | | | | |
| | | | | Floor | Orientation | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | | DAY | NIGHT |
| | | | | | | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB | dB | dB | dB | dB(A) | dB(A) | ≥ 65dB LAeq,15h | ≥ 60dB LAeq,9h | | | |
| 7 | 7_036 | 12 Hart Place | | G | W | 59 | 55 | 59 | 55 | 59 | 55 | 59 | 55 | 0 | 0 | 0 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 7 | 7_037 | 16 Hart Place | | G | W | 65 | 61 | 65 | 60 | 66 | 61 | 65 | 61 | -0.2 | -0.1 | -0.1 | -0.1 | 60 | 55 | YES | YES | YES | | |
| 7 | 7_038 | 17 Hart Place | | G | W | 61 | 57 | 61 | 57 | 62 | 58 | 62 | 57 | -0.1 | -0.1 | -0.1 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 7 | 7_039 | 18 Hart Place | | G | SW | 65 | 61 | 65 | 61 | 66 | 61 | 66 | 61 | -0.1 | -0.1 | -0.2 | -0.1 | 60 | 55 | YES | YES | YES | | |
| 7 | 7_040 | 20 Hart Place | | G | SW | 67 | 62 | 67 | 62 | 67 | 63 | 67 | 63 | -0.1 | -0.1 | -0.1 | -0.1 | 60 | 55 | YES | YES | YES | | |
| 7 | 7_041 | 22 Hart Place | | G | SW | 61 | 57 | 61 | 57 | 62 | 57 | 62 | 57 | 0 | 0 | 0 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 7 | 7_042 | 2 Wrights Road | | G | SW | 64 | 59 | 64 | 59 | 64 | 60 | 64 | 60 | -0.1 | -0.1 | -0.1 | -0.1 | 60 | 55 | NO | YES | YES | | |
| 7 | 7_042 | 2 Wrights Road | | 1 | SW | 69 | 65 | 69 | 65 | 70 | 65 | 69 | 65 | -0.1 | -0.1 | -0.1 | -0.1 | 60 | 55 | YES | YES | YES | | |
| 7 | 7_043 | 4 Wrights Road | | G | SE | 60 | 55 | 60 | 55 | 60 | 56 | 60 | 56 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 7 | 7_044 | 6 Wrights Road | | G | SW | 59 | 54 | 59 | 54 | 59 | 55 | 59 | 55 | 0 | -0.1 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 7 | 7_045a | 3-5 President Road | Kellyville Preschool Kindergarten | | | 55 | 50 | 55 | 50 | 56 | 50 | 56 | 50 | 0 | 0 | 0 | 0 | 55 | - | - | - | NO | | |
| 7 | 7_045b | 3-5 President Road | Kellyville Preschool Kindergarten | G | W | 57 | 52 | 56 | 52 | 57 | 53 | 57 | 53 | -0.1 | 0 | 0 | -0.1 | 45 | - | NO | - | NO | | |
| 8 | 8_010 | 36 Kentwell Crescent | | G | NE | 58 | 53 | 58 | 53 | 58 | 54 | 58 | 54 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_014 | 43 Kentwell Crescent | | G | E | 63 | 59 | 63 | 59 | 64 | 59 | 64 | 59 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_015 | 49 Kentwell Crescent | | G | NE | 63 | 59 | 63 | 59 | 63 | 59 | 63 | 59 | 0 | 0 | 0 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_016 | 45 Kentwell Crescent | | G | E | 63 | 59 | 63 | 59 | 64 | 59 | 64 | 59 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_016 | 45 Kentwell Crescent | | 1 | E | 70 | 66 | 70 | 66 | 70 | 66 | 70 | 66 | 0 | 0 | 0 | 0 | 60 | 55 | YES | YES | YES | | |
| 8 | 8_017 | 47 Kentwell Crescent | | G | E | 63 | 59 | 63 | 59 | 63 | 59 | 63 | 59 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_017 | 47 Kentwell Crescent | | 1 | E | 71 | 66 | 71 | 66 | 71 | 67 | 71 | 67 | 0 | 0 | 0.1 | 0 | 60 | 55 | YES | YES | YES | | |
| 8 | 8_018 | 51 Kentwell Crescent | | G | S | 59 | 55 | 59 | 55 | 60 | 55 | 60 | 55 | 0 | 0 | 0 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_019 | 53 Kentwell Crescent | | G | N | 57 | 53 | 57 | 53 | 57 | 53 | 57 | 53 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_020 | 55 Kentwell Crescent | | G | N | 56 | 51 | 56 | 51 | 56 | 52 | 56 | 52 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_020 | 55 Kentwell Crescent | | 1 | E | 61 | 57 | 61 | 57 | 61 | 57 | 61 | 57 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_022 | 6 Meldon Place | | G | SE | 57 | 53 | 57 | 53 | 57 | 53 | 57 | 53 | 0 | -0.1 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_023 | 8 Meldon Place | | G | E | 57 | 52 | 57 | 52 | 57 | 53 | 57 | 53 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_024 | 9 Meldon Place | | G | S | 57 | 53 | 57 | 53 | 57 | 53 | 57 | 53 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_025 | 10 Meldon Place | | G | E | 57 | 53 | 57 | 53 | 58 | 53 | 58 | 53 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_026 | 11 Meldon Place | | G | S | 57 | 53 | 57 | 53 | 57 | 53 | 57 | 53 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_026 | 11 Meldon Place | | 1 | S | 61 | 57 | 61 | 57 | 61 | 57 | 61 | 57 | 0.1 | 0 | 0 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_027 | 12 Meldon Place | | G | SW | 57 | 53 | 57 | 53 | 58 | 53 | 58 | 53 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_028 | 13 Meldon Place | | G | S | 57 | 53 | 57 | 53 | 58 | 53 | 58 | 53 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_028 | 13 Meldon Place | | 1 | S | 62 | 58 | 62 | 58 | 62 | 58 | 62 | 58 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_029 | 14 Meldon Place | | G | S | 58 | 54 | 58 | 54 | 59 | 55 | 59 | 55 | 0 | -0.1 | 0.1 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_029 | 14 Meldon Place | | 1 | S | 60 | 56 | 60 | 56 | 61 | 57 | 61 | 57 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_030 | 15 Meldon Place | | G | E | 62 | 58 | 62 | 58 | 62 | 58 | 62 | 58 | 0 | 0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_030 | 15 Meldon Place | | 1 | E | 68 | 63 | 68 | 64 | 68 | 64 | 68 | 64 | 0.2 | 0.2 | 0.1 | 0.2 | 60 | 55 | YES | YES | YES | | |
| 8 | 8_031 | 16 Meldon Place | | G | S | 59 | 54 | 59 | 54 | 59 | 55 | 59 | 55 | 0 | -0.1 | 0 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_031 | 16 Meldon Place | | 1 | S | 61 | 57 | 61 | 57 | 61 | 57 | 61 | 57 | 0 | -0.1 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_032 | 17 Meldon Place | | G | E | 62 | 58 | 62 | 58 | 62 | 58 | 62 | 58 | 0 | 0 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_033 | 19 Meldon Place | | G | N | 61 | 57 | 62 | 57 | 62 | 58 | 62 | 58 | 0.1 | 0 | 0.1 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_034 | 21 Meldon Place | | G | E | 60 | 56 | 60 | 56 | 61 | 56 | 61 | 57 | 0 | 0 | 0 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_035 | 23 Meldon Place | | G | E | 61 | 57 | 61 | 57 | 62 | 57 | 62 | 57 | 0 | 0 | 0 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_036 | 25 Meldon Place | | G | E | 61 | 57 | 62 | 57 | 62 | 58 | 62 | 58 | 0.1 | 0 | 0.1 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_037 | 27 Meldon Place | | G | NE | 62 | 57 | 62 | 57 | 62 | 58 | 62 | 58 | 0 | 0 | 0.1 | 0 | 60 | 55 | NO | NO | NO | | |

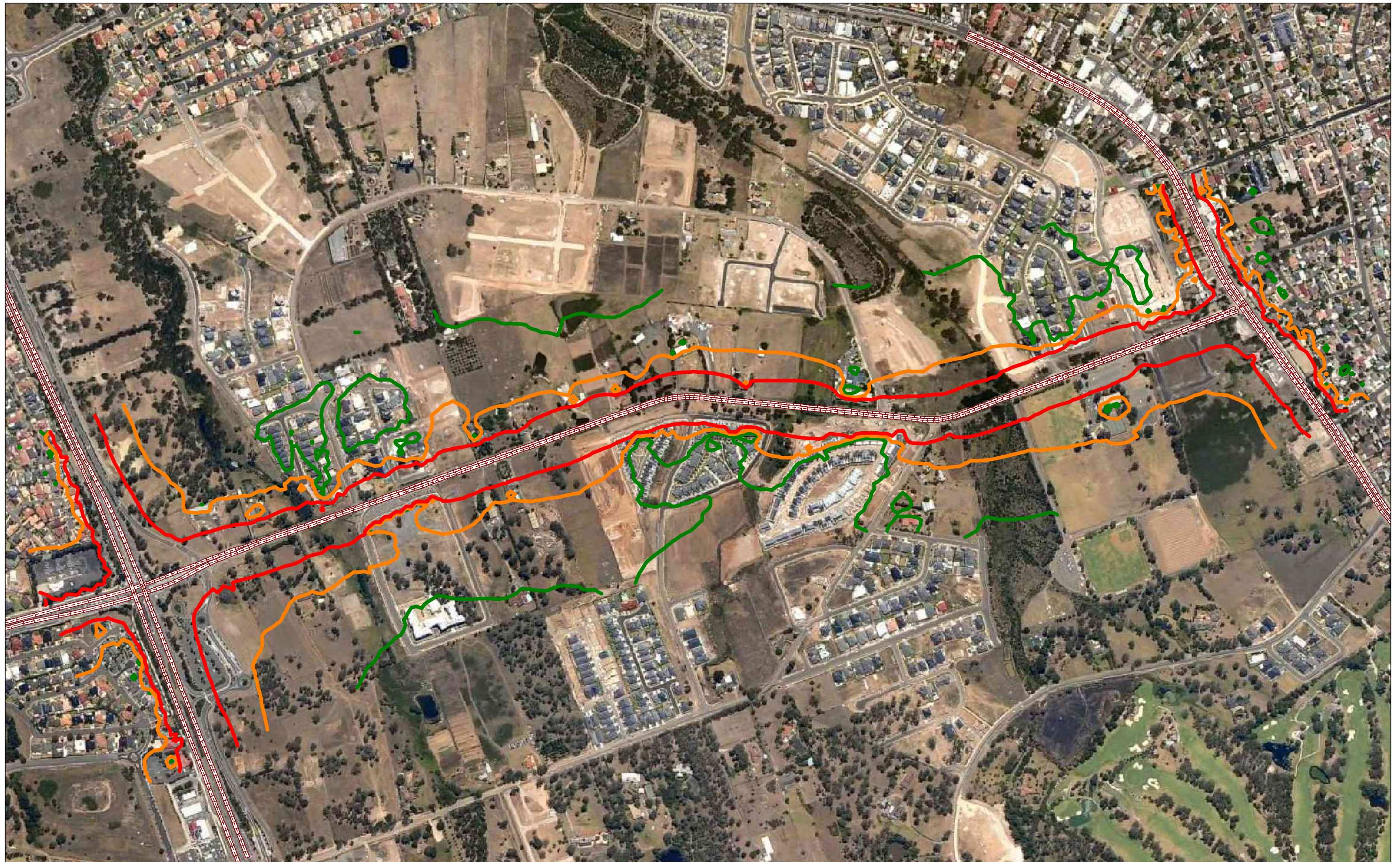
| NCA | NCA ID | Receiver Address | Receiver Description | Facade | | Opening Year 2019 | | | | Design Year 2029 | | | | Increase (Build - No Build) | | | | RNP External Noise Criteria | | Exposed to Acute Noise Levels | | Consider further treatment? | | |
|-----|--------|----------------------|-----------------------------------|--------|-------------|-------------------|-------|-------|-------|------------------|-------|-------|-------|-----------------------------|-------|------|-------|-----------------------------|-------|-------------------------------|----------------|-----------------------------|-----|-------|
| | | | | | | No Build | | Build | | No Build | | Build | | 2019 | | 2029 | | | | | | | | |
| | | | | Floor | Orientation | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | | DAY | NIGHT |
| | | | | | | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB | dB | dB | dB | dB(A) | dB(A) | ≥ 65dB LAeq,15h | ≥ 60dB LAeq,9h | | | |
| 8 | 8_037 | 27 Meldon Place | | 1 | NE | 67 | 63 | 67 | 63 | 67 | 63 | 67 | 63 | 0.1 | 0.1 | 0.1 | 0.1 | 60 | 55 | YES | YES | YES | | |
| 8 | 8_038 | 29 Meldon Place | | G | SE | 60 | 56 | 60 | 56 | 60 | 56 | 60 | 56 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_038 | 29 Meldon Place | | 1 | NE | 65 | 60 | 65 | 60 | 65 | 61 | 65 | 61 | 0 | 0 | 0 | 0.1 | 60 | 55 | YES | YES | YES | | |
| 8 | 8_039 | 1 Carolyn Court | Post 2008 Development (Residence) | G | N | 63 | 58 | 63 | 58 | 63 | 59 | 63 | 59 | -0.1 | -0.1 | 0 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_039 | 1 Carolyn Court | Post 2008 Development (Residence) | 1 | N | 67 | 63 | 67 | 63 | 68 | 63 | 68 | 63 | 0 | 0 | 0.1 | 0 | 60 | 55 | YES | YES | NO | | |
| 8 | 8_040 | 3 Carolyn Court | Post 2008 Development (Residence) | G | N | 62 | 58 | 62 | 58 | 63 | 58 | 63 | 58 | -0.1 | -0.1 | 0.1 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_040 | 3 Carolyn Court | Post 2008 Development (Residence) | 1 | N | 66 | 62 | 66 | 62 | 67 | 63 | 67 | 63 | 0 | 0 | 0.1 | 0.1 | 60 | 55 | YES | YES | NO | | |
| 8 | 8_041 | 15 Carolyn Court | | G | N | 62 | 58 | 62 | 58 | 63 | 59 | 63 | 59 | 0 | 0 | 0.1 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_041 | 15 Carolyn Court | | 1 | NE | 70 | 66 | 70 | 66 | 71 | 66 | 71 | 66 | 0.1 | 0.1 | 0.1 | 0.1 | 60 | 55 | YES | YES | YES | | |
| 8 | 8_042 | 2 Jakob Way | | G | NW | 60 | 55 | 60 | 55 | 60 | 56 | 60 | 56 | -0.1 | -0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_042 | 2 Jakob Way | | 1 | NW | 63 | 58 | 62 | 58 | 63 | 59 | 63 | 59 | -0.1 | -0.1 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_043 | 3 Jakob Way | | G | E | 63 | 58 | 63 | 58 | 63 | 59 | 63 | 59 | 0 | 0.1 | 0 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_043 | 3 Jakob Way | | 1 | E | 68 | 64 | 68 | 64 | 69 | 64 | 69 | 64 | 0.1 | 0 | 0.1 | 0 | 60 | 55 | YES | YES | YES | | |
| 8 | 8_044 | 4 Jakob Way | | G | NE | 58 | 54 | 58 | 54 | 59 | 54 | 59 | 54 | -0.1 | -0.1 | 0 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_044 | 4 Jakob Way | | 1 | NE | 61 | 57 | 61 | 57 | 62 | 57 | 62 | 57 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_045 | 5 Jakob Way | | G | NE | 62 | 58 | 62 | 58 | 63 | 58 | 63 | 58 | 0 | 0.1 | 0.1 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_045 | 5 Jakob Way | | 1 | NE | 68 | 64 | 69 | 64 | 69 | 64 | 69 | 64 | 0.1 | 0.1 | 0.1 | 0 | 60 | 55 | YES | YES | YES | | |
| 8 | 8_046 | 7 Jakob Way | | G | E | 62 | 58 | 62 | 58 | 63 | 58 | 63 | 58 | 0 | 0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_046 | 7 Jakob Way | | 1 | E | 68 | 64 | 68 | 64 | 69 | 64 | 69 | 64 | 0.1 | 0.1 | 0 | 0.1 | 60 | 55 | YES | YES | YES | | |
| 8 | 8_047 | 3 Rory Court | | G | NE | 58 | 54 | 58 | 54 | 58 | 54 | 58 | 54 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_047 | 3 Rory Court | | 1 | NE | 61 | 57 | 61 | 57 | 61 | 57 | 61 | 57 | 0 | -0.1 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_048 | 4 Rory Court | | G | NW | 57 | 53 | 57 | 53 | 57 | 53 | 57 | 53 | -0.1 | -0.1 | 0.1 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_048 | 4 Rory Court | | 1 | NW | 60 | 55 | 60 | 55 | 60 | 56 | 60 | 56 | 0 | 0 | 0.1 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_049 | 6 Rory Court | | G | SE | 58 | 53 | 58 | 53 | 58 | 54 | 58 | 54 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_049 | 6 Rory Court | | 1 | NE | 61 | 57 | 61 | 57 | 62 | 57 | 62 | 57 | 0 | 0 | 0 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_050 | 8 Rory Court | | G | E | 64 | 59 | 64 | 59 | 64 | 59 | 64 | 59 | 0 | 0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_050 | 8 Rory Court | | 1 | E | 69 | 64 | 69 | 64 | 69 | 65 | 69 | 65 | 0.1 | 0.1 | 0.1 | 0.2 | 60 | 55 | YES | YES | YES | | |
| 8 | 8_051 | 10 Rory Court | | G | E | 62 | 58 | 62 | 58 | 62 | 58 | 62 | 58 | 0.1 | 0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_051 | 10 Rory Court | | 1 | E | 70 | 66 | 70 | 66 | 71 | 66 | 71 | 66 | 0.2 | 0.1 | 0.2 | 0.2 | 60 | 55 | YES | YES | YES | | |
| 8 | 8_052 | 12 Rory Court | | G | NE | 62 | 58 | 62 | 58 | 62 | 58 | 62 | 58 | 0.1 | 0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_052 | 12 Rory Court | | 1 | NE | 70 | 65 | 70 | 66 | 70 | 66 | 70 | 66 | 0.2 | 0.2 | 0.1 | 0.1 | 60 | 55 | YES | YES | YES | | |
| 8 | 8_053a | 6 Rothwell Circuit | Fit Kidz Day Care Centre | | | 63 | 57 | 63 | 58 | 63 | 58 | 63 | 58 | 0.1 | 0.2 | 0.1 | 0.2 | 55 | - | - | - | NO | | |
| 8 | 8_053b | 6 Rothwell Circuit | Fit Kidz Day Care Centre | G | E | 62 | 58 | 62 | 58 | 63 | 58 | 63 | 58 | 0.1 | 0.1 | 0.1 | 0.1 | 45 | - | NO | - | NO | | |
| 8 | 8_054 | 8 Rothwell Circuit | | G | E | 62 | 58 | 62 | 58 | 62 | 58 | 62 | 58 | 0.1 | 0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_055 | 10 Rothwell Circuit | | G | E | 63 | 59 | 63 | 59 | 63 | 59 | 63 | 59 | 0.1 | 0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_055 | 10 Rothwell Circuit | | 1 | E | 68 | 64 | 68 | 64 | 69 | 64 | 69 | 64 | 0.1 | 0.1 | 0.1 | 0.1 | 60 | 55 | YES | YES | YES | | |
| 8 | 8_056 | 12 Rothwell Circuit | | G | S | 62 | 58 | 62 | 58 | 62 | 58 | 63 | 58 | 0.1 | 0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_056 | 12 Rothwell Circuit | | 1 | E | 72 | 67 | 72 | 67 | 72 | 67 | 72 | 68 | 0.2 | 0.2 | 0.2 | 0.2 | 60 | 55 | YES | YES | YES | | |
| 8 | 8_057 | 14 Rothwell Circuit | | G | SE | 59 | 54 | 59 | 54 | 59 | 55 | 59 | 55 | 0.1 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_057 | 14 Rothwell Circuit | | 1 | SE | 63 | 58 | 63 | 58 | 63 | 59 | 63 | 59 | 0 | 0 | 0.1 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_058 | 16 Rothwell Circuit | | G | NE | 56 | 52 | 56 | 52 | 57 | 52 | 57 | 52 | 0 | 0 | 0 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_058 | 16 Rothwell Circuit | | 1 | NE | 60 | 56 | 60 | 56 | 61 | 56 | 61 | 56 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_059 | 16A Rothwell Circuit | | G | NE | 64 | 60 | 64 | 60 | 65 | 60 | 65 | 60 | 0.1 | 0.1 | 0.1 | 0.1 | 60 | 55 | YES | YES | YES | | |
| 8 | 8_059 | 16A Rothwell Circuit | | 1 | NE | 71 | 66 | 71 | 67 | 71 | 67 | 71 | 67 | 0.1 | 0.2 | 0.1 | 0.2 | 60 | 55 | YES | YES | YES | | |

| NCA | NCA ID | Receiver Address | Receiver Description | Facade | | Opening Year 2019 | | | | Design Year 2029 | | | | Increase (Build - No Build) | | | | RNP External Noise Criteria | | Exposed to Acute Noise Levels | | Consider further treatment? | | |
|-----|--------|-----------------------------|----------------------|--------|-------------|-------------------|-------|-------|-------|------------------|-------|-------|-------|-----------------------------|-------|------|-------|-----------------------------|-------|-------------------------------|----------------|-----------------------------|-----|-------|
| | | | | | | No Build | | Build | | No Build | | Build | | 2019 | | 2029 | | | | | | | | |
| | | | | Floor | Orientation | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | DAY | NIGHT | | DAY | NIGHT |
| | | | | | | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB(A) | dB | dB | dB | dB | dB(A) | dB(A) | ≥ 65dB LAeq,15h | ≥ 60dB LAeq,9h | | | |
| 8 | 8_060 | 18 Rothwell Circuit | | G | NE | 56 | 51 | 56 | 51 | 56 | 51 | 56 | 51 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_060 | 18 Rothwell Circuit | | 1 | NE | 59 | 55 | 59 | 55 | 60 | 55 | 60 | 55 | 0 | 0 | 0 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_061 | 18A Rothwell Circuit | | G | NE | 63 | 59 | 63 | 59 | 63 | 59 | 63 | 59 | 0.1 | 0.1 | 0 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_061 | 18A Rothwell Circuit | | 1 | NE | 70 | 65 | 70 | 66 | 70 | 66 | 70 | 66 | 0.1 | 0.2 | 0.1 | 0.2 | 60 | 55 | YES | YES | YES | | |
| 8 | 8_062 | 20 Rothwell Circuit | | G | NE | 58 | 53 | 58 | 53 | 58 | 53 | 58 | 54 | 0.1 | 0 | 0 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_062 | 20 Rothwell Circuit | | 1 | NE | 61 | 57 | 61 | 57 | 61 | 57 | 61 | 57 | 0.1 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_063 | 22 Rothwell Circuit | | G | NE | 64 | 60 | 64 | 60 | 64 | 60 | 64 | 60 | 0.1 | 0 | 0.1 | 0.1 | 60 | 55 | NO | YES | YES | | |
| 8 | 8_063 | 22 Rothwell Circuit | | 1 | NE | 71 | 66 | 71 | 66 | 71 | 66 | 71 | 67 | 0.2 | 0.2 | 0.1 | 0.1 | 60 | 55 | YES | YES | YES | | |
| 8 | 8_064 | 24 Rothwell Circuit | | G | NE | 63 | 59 | 64 | 59 | 64 | 59 | 64 | 59 | 0.1 | 0.1 | 0.1 | 0.1 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_064 | 24 Rothwell Circuit | | 1 | NE | 70 | 65 | 70 | 65 | 70 | 65 | 70 | 66 | 0.2 | 0.1 | 0.1 | 0.1 | 60 | 55 | YES | YES | YES | | |
| 8 | 8_065 | 26 Rothwell Circuit | | G | NE | 57 | 53 | 57 | 53 | 57 | 53 | 57 | 53 | 0 | 0 | 0 | 0 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_065 | 26 Rothwell Circuit | | 1 | NE | 60 | 56 | 60 | 56 | 61 | 56 | 61 | 56 | -0.1 | 0 | 0 | -0.1 | 60 | 55 | NO | NO | NO | | |
| 8 | 8_066 | Lot 4 1190 Old Windsor Road | Outback Steakhouse | G | E | 69 | 65 | 69 | 65 | 70 | 65 | 70 | 65 | 0 | 0.1 | 0 | 0 | - | - | - | - | NO | | |

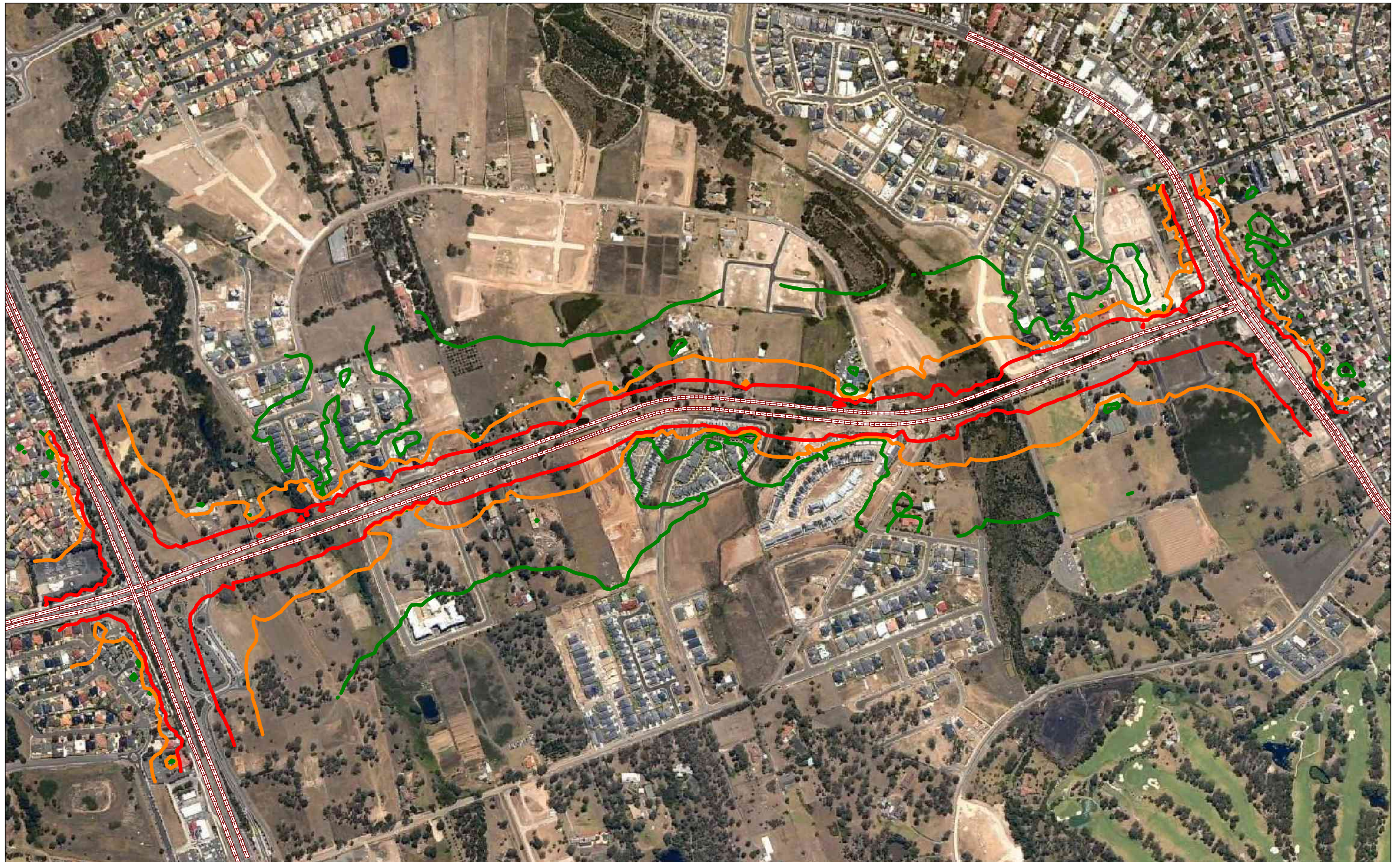
APPENDIX D Noise Contours



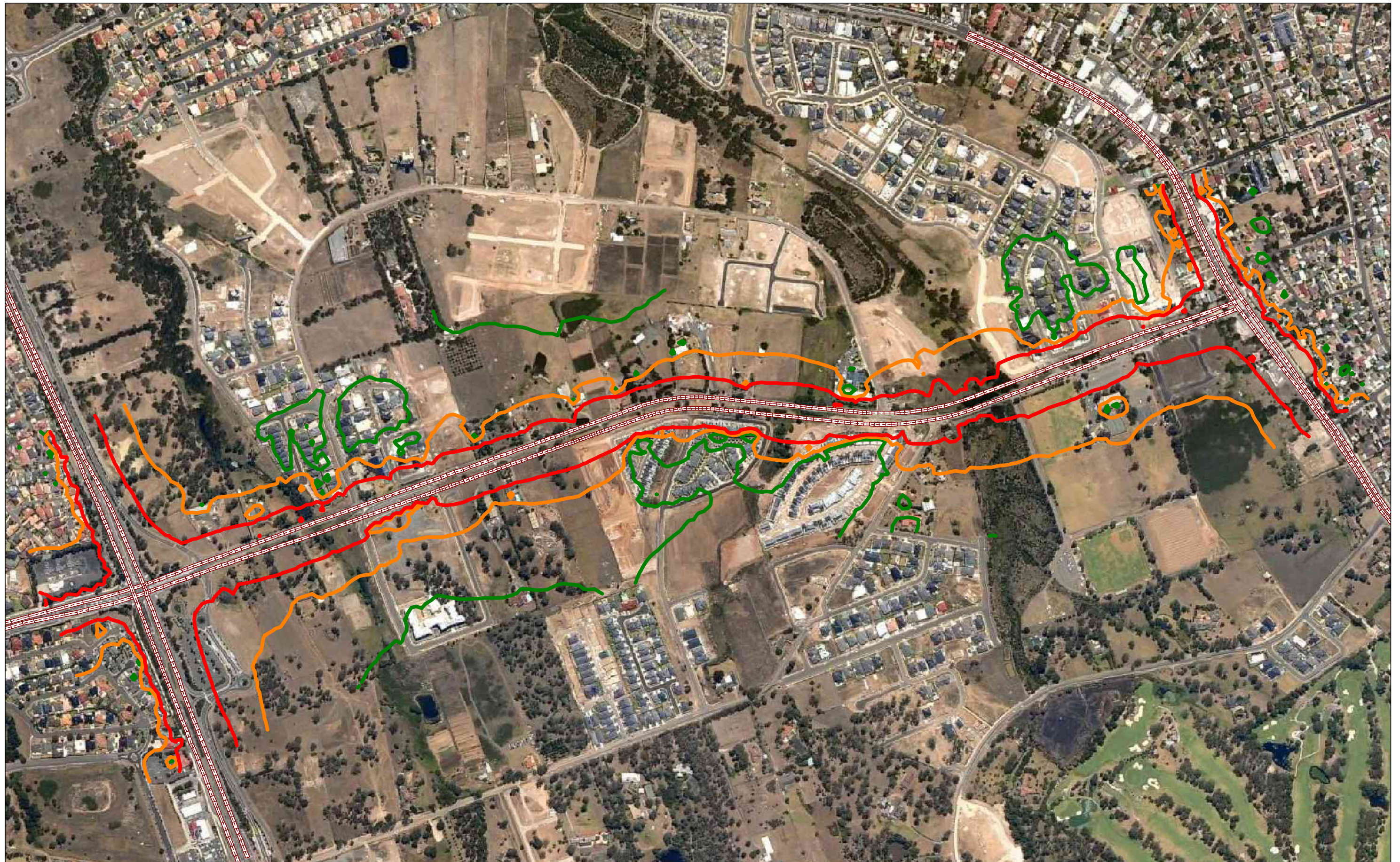
| | | | | | | | | | | | | | | | | | |
|-------------------------------------|---|--|------------------------|---|--|--------------|----------|-------------|----|----------|---------------------------|-------|-------|-------|------------|--------|------------|
| <p>Legend:</p> <p> Road</p> <p></p> | <p>Noise level dB(A)</p> <p> = 55</p> <p> = 60</p> <p> = 65</p> | <p>Consultant:</p> <p>RENZO TONIN & ASSOCIATES <i>inspired to achieve</i></p> <p>Acoustics, Vibration & Structural Dynamics Sydney Melbourne Brisbane Gold Coast Kuwait 1/418A Elizabeth Street, SURRY HILLS NSW 2010 P: 02 8218 0500 F: 02 8218 0501</p> | <p>Client:</p> <p></p> | <p>Project:</p> <p>MEMORIAL AVENUE UPGRADE OLD WINDSOR ROAD TO WINDSOR ROAD</p> <p>Noise levels are approximate due to interpolation of contours and should be used for reference only. For information only and not for construction. This information is protected by copyright.</p> | <p>Description:</p> <p>DESIGN YEAR (2029) 'NO BUILD' SCENARIO LAeq,15h DAY TIME 1.5M NOISE CONTOUR</p> <table border="1"> <tr> <td>Project No.:</td> <td>TG582-01</td> <td>Created by:</td> <td>rp</td> </tr> <tr> <td>Fig Ref:</td> <td>TG582-01.5.2.4.3.P02 (r2)</td> <td>Grid:</td> <td>13_C1</td> </tr> <tr> <td>Date:</td> <td>2014.10.14</td> <td>Scale:</td> <td>1: 6800 A3</td> </tr> </table> | Project No.: | TG582-01 | Created by: | rp | Fig Ref: | TG582-01.5.2.4.3.P02 (r2) | Grid: | 13_C1 | Date: | 2014.10.14 | Scale: | 1: 6800 A3 |
| Project No.: | TG582-01 | Created by: | rp | | | | | | | | | | | | | | |
| Fig Ref: | TG582-01.5.2.4.3.P02 (r2) | Grid: | 13_C1 | | | | | | | | | | | | | | |
| Date: | 2014.10.14 | Scale: | 1: 6800 A3 | | | | | | | | | | | | | | |



| | | | | | | | | | | | | | | | | | |
|-------------------------------------|---|--|------------------------|---|---|--------------|----------|-------------|----|----------|---------------------------|-------|-------|-------|------------|--------|------------|
| <p>Legend:</p> <p> Road</p> <p></p> | <p>Noise level dB(A)</p> <p> = 50</p> <p> = 55</p> <p> = 60</p> | <p>Consultant:</p> <p>RENZO TONIN & ASSOCIATES <i>inspired to achieve</i></p> <p>Acoustics, Vibration & Structural Dynamics Sydney Melbourne Brisbane Gold Coast Kuwait 1/418A Elizabeth Street, SURRY HILLS NSW 2010 P: 02 8218 0500 F: 02 8218 0501</p> | <p>Client:</p> <p></p> | <p>Project:</p> <p>MEMORIAL AVENUE UPGRADE OLD WINDSOR ROAD TO WINDSOR ROAD</p> <p>Noise levels are approximate due to interpolation of contours and should be used for reference only. For information only and not for construction. This information is protected by copyright.</p> | <p>Description:</p> <p>DESIGN YEAR (2029) 'NO BUILD' SCENARIO LAeq,9h NIGHT TIME 1.5M NOISE CONTOUR</p> <table border="1"> <tr> <td>Project No.:</td> <td>TG582-01</td> <td>Created by:</td> <td>rp</td> </tr> <tr> <td>Fig Ref:</td> <td>TG582-01.5.2.4.3.P03 (r2)</td> <td>Grid:</td> <td>14_C1</td> </tr> <tr> <td>Date:</td> <td>2014.10.14</td> <td>Scale:</td> <td>1: 6800 A3</td> </tr> </table> | Project No.: | TG582-01 | Created by: | rp | Fig Ref: | TG582-01.5.2.4.3.P03 (r2) | Grid: | 14_C1 | Date: | 2014.10.14 | Scale: | 1: 6800 A3 |
| Project No.: | TG582-01 | Created by: | rp | | | | | | | | | | | | | | |
| Fig Ref: | TG582-01.5.2.4.3.P03 (r2) | Grid: | 14_C1 | | | | | | | | | | | | | | |
| Date: | 2014.10.14 | Scale: | 1: 6800 A3 | | | | | | | | | | | | | | |



| | | | | | | | | | | | |
|------------------------------------|---|--|------------------------|---|---|-----------------------|----------------|------------------------------------|-------------|------------------|-------------------|
| <p>Legend:</p> <p> Road</p> | <p>Noise level dB(A)</p> <p> = 55</p> <p> = 60</p> <p> = 65</p> | <p>Consultant:</p> <p>RENZO TONIN & ASSOCIATES <i>inspired to achieve</i></p> <p>Acoustics, Vibration & Structural Dynamics Sydney Melbourne Brisbane Gold Coast Kuwait 1/418A Elizabeth Street, SURRY HILLS NSW 2010 P: 02 8218 0500 F: 02 8218 0501</p> | <p>Client:</p> <p></p> | <p>Project:</p> <p>MEMORIAL AVENUE UPGRADE OLD WINDSOR ROAD TO WINDSOR ROAD</p> <p>Noise levels are approximate due to interpolation of contours and should be used for reference only. For information only and not for construction. This information is protected by copyright.</p> | <p>Description:</p> <p>DESIGN YEAR (2029) 'BUILD' SCENARIO LAeq,15h DAY TIME 1.5M NOISE CONTOUR</p> <table border="1"> <tr> <td>Project No.: TG582-01</td> <td>Created by: rp</td> </tr> <tr> <td>Fig Ref: TG582-01.5.2.4.3.P04 (r2)</td> <td>Grid: 15_C1</td> </tr> <tr> <td>Date: 2014.10.14</td> <td>Scale: 1: 6800 A3</td> </tr> </table> | Project No.: TG582-01 | Created by: rp | Fig Ref: TG582-01.5.2.4.3.P04 (r2) | Grid: 15_C1 | Date: 2014.10.14 | Scale: 1: 6800 A3 |
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| Date: 2014.10.14 | Scale: 1: 6800 A3 | | | | | | | | | | |



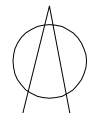
| | | | | | | | | | | | |
|-------------------------------------|---|--|------------------------|---|--|-----------------------|----------------|------------------------------------|-------------|------------------|-------------------|
| <p>Legend:</p> <p> Road</p> <p></p> | <p>Noise level dB(A)</p> <p> = 50</p> <p> = 55</p> <p> = 60</p> | <p>Consultant:</p> <p>RENZO TONIN & ASSOCIATES <i>inspired to achieve</i></p> <p>Acoustics, Vibration & Structural Dynamics Sydney Melbourne Brisbane Gold Coast Kuwait 1/418A Elizabeth Street, SURRY HILLS NSW 2010 P: 02 8218 0500 F: 02 8218 0501</p> | <p>Client:</p> <p></p> | <p>Project:</p> <p>MEMORIAL AVENUE UPGRADE OLD WINDSOR ROAD TO WINDSOR ROAD</p> <p>Noise levels are approximate due to interpolation of contours and should be used for reference only. For information only and not for construction. This information is protected by copyright.</p> | <p>Description:</p> <p>DESIGN YEAR (2029) 'BUILD' SCENARIO LAeq,9h NIGHT TIME 1.5M NOISE CONTOUR</p> <table border="1"> <tr> <td>Project No.: TG582-01</td> <td>Created by: rp</td> </tr> <tr> <td>Fig Ref: TG582-01.5.2.4.3.P05 (r2)</td> <td>Grid: 16_C1</td> </tr> <tr> <td>Date: 2014.10.14</td> <td>Scale: 1: 6800 A3</td> </tr> </table> | Project No.: TG582-01 | Created by: rp | Fig Ref: TG582-01.5.2.4.3.P05 (r2) | Grid: 16_C1 | Date: 2014.10.14 | Scale: 1: 6800 A3 |
| Project No.: TG582-01 | Created by: rp | | | | | | | | | | |
| Fig Ref: TG582-01.5.2.4.3.P05 (r2) | Grid: 16_C1 | | | | | | | | | | |
| Date: 2014.10.14 | Scale: 1: 6800 A3 | | | | | | | | | | |

APPENDIX E **Receivers Considered for Further Treatment**



Legend:

- Building Receiver
- Consider Further Treatment: YES



Consultant:

RENZO TONIN & ASSOCIATES
inspired to achieve

Acoustics, Vibration & Structural Dynamics
 Sydney Melbourne Brisbane Gold Coast Kuwait

1/418A Elizabeth Street, SURRY HILLS NSW 2010
 P: 02 8218 0500 F: 02 8218 0501

Client:



Project:

**MEMORIAL AVENUE UPGRADE
 OLD WINDSOR ROAD TO WINDSOR ROAD**

Noise levels are approximate due to interpolation of contours and should be used for reference only.
 For information only and not for construction.
 This information is protected by copyright.

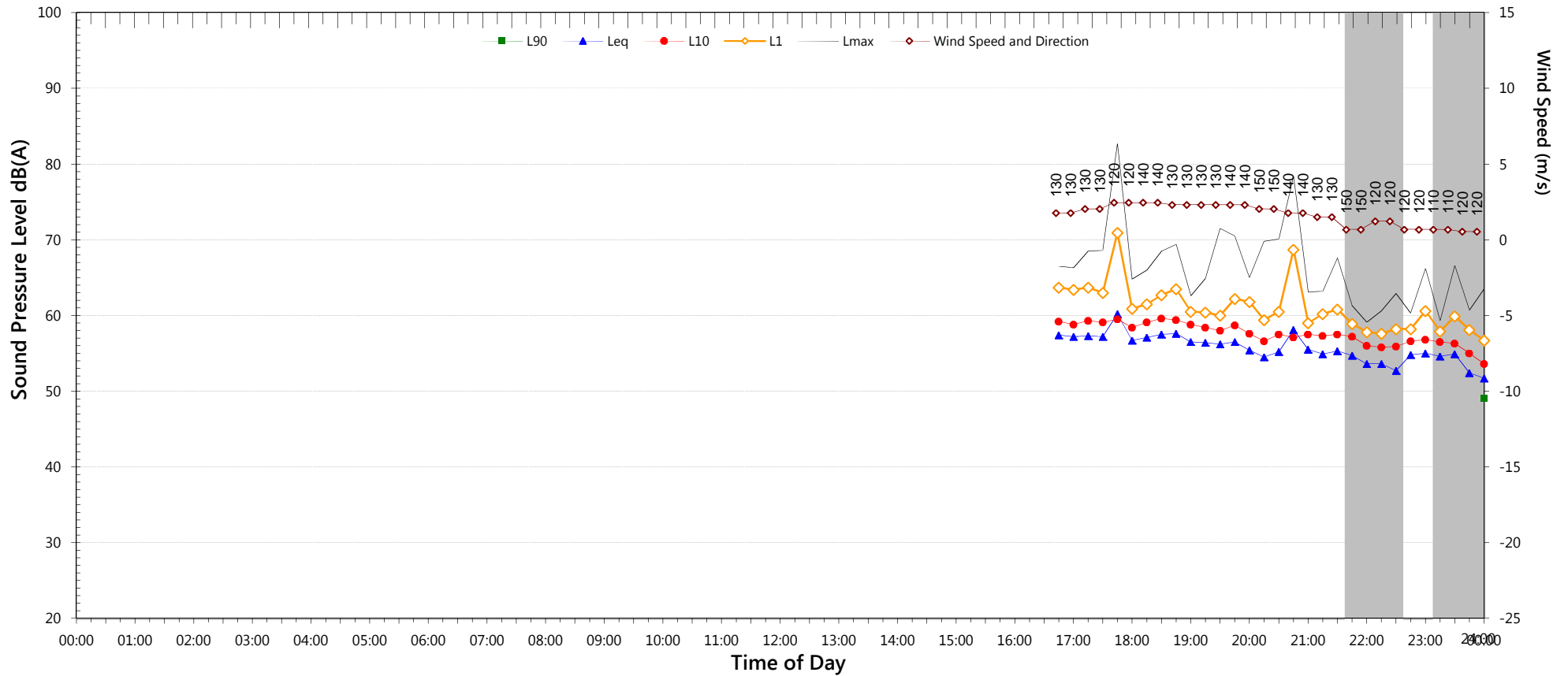
| | |
|--|---------------------------|
| Description: RECEIVERS TO BE CONSIDERED FOR FURTHER TREATMENT | |
| Project No.: | TG582-01 |
| Fig Ref: | TG582-01.5.2.4.3.P01 (r3) |
| Date: | 2014.10.14 |
| Created by: | rp |
| Grid: | - |
| Scale: | 1: 6800 A3 |

APPENDIX F Measured Noise Data

Unattended Noise Monitoring Results

16 Gorman Ave - Front Yard

Tuesday, 11 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | - | 51.2 | - |
| Leq | - | 56.3 | - |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

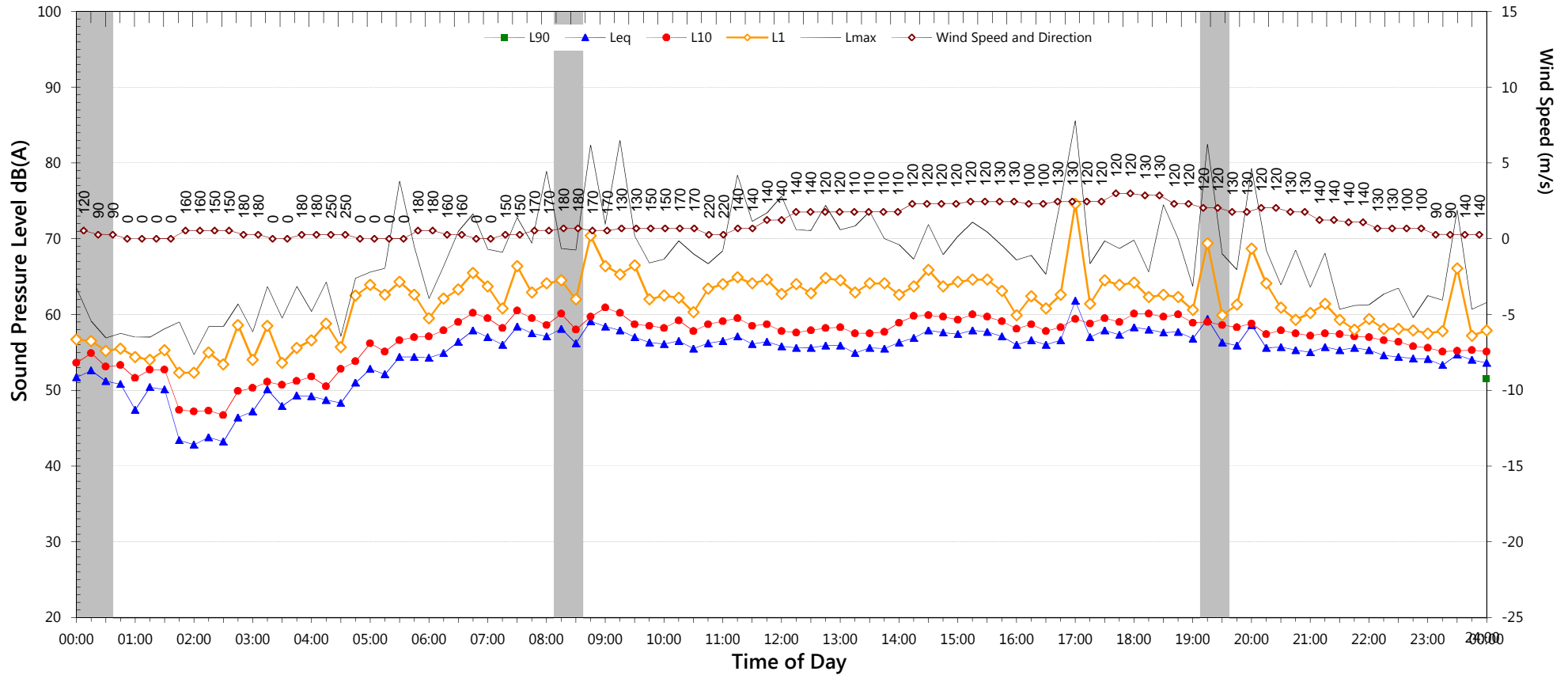
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq} 15 hr and L _{eq} 9 hr | 59.3 | 54.9 | |
| L _{eq} 1hr upper 10 percentile | 60.6 | 59.2 | |
| L _{eq} 1hr lower 10 percentile | 57.6 | 48.0 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 65.6 | to | 77.6 | |
| Lmax - Leq (Range) | 15.0 | to | 23.7 | |

Unattended Noise Monitoring Results

16 Gorman Ave - Front Yard

Wednesday, 12 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 50.2 | 50.9 | 39.4 |
| Leq | 57.1 | 56.5 | 53.0 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

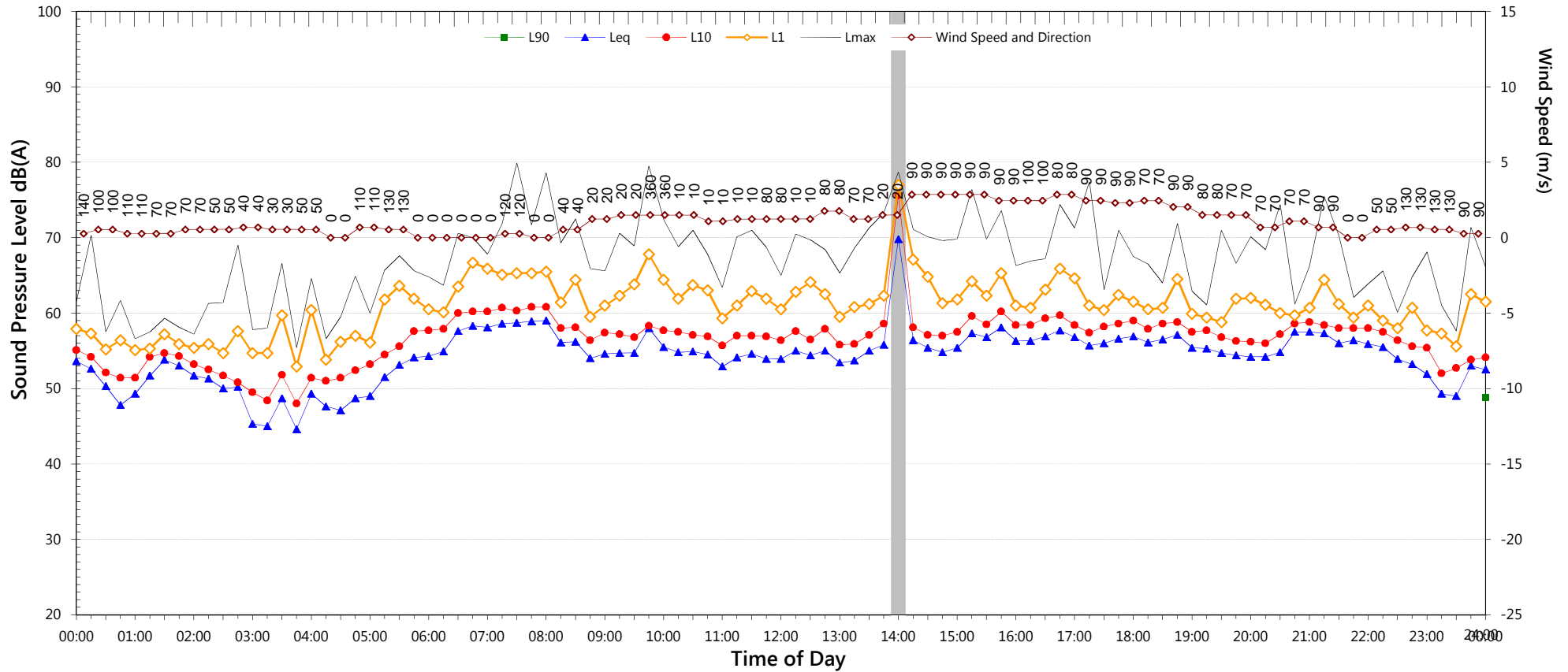
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 59.4 | 55.5 | |
| L _{eq 1hr} upper 10 percentile | 61.1 | 59.9 | |
| L _{eq 1hr} lower 10 percentile | 57.9 | 49.9 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 66.6 | to | 73.8 | |
| Lmax - Leq (Range) | 16.7 | to | 19.9 | |

Unattended Noise Monitoring Results

16 Gorman Ave - Front Yard

Thursday, 13 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 48.8 | 48.3 | - |
| Leq | 56.1 | 56.0 | - |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

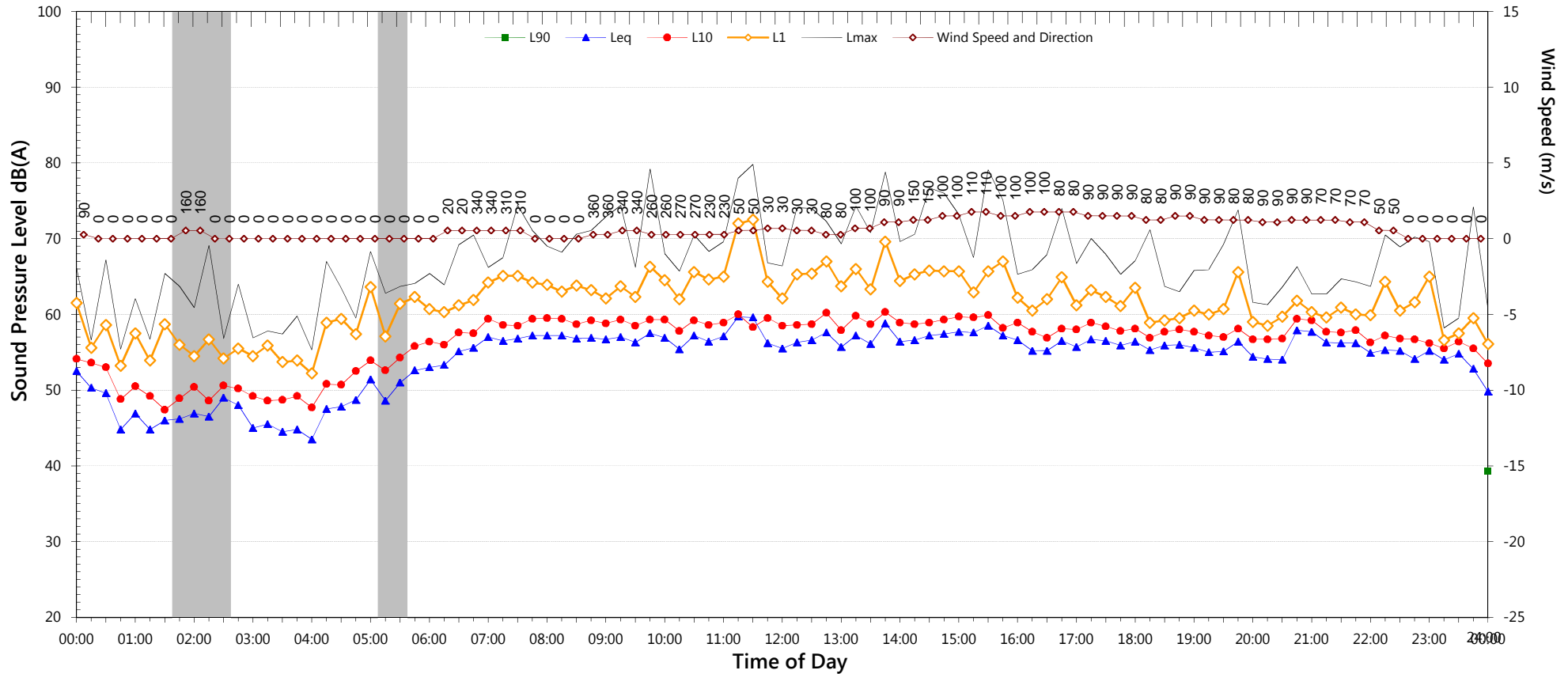
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 58.5 | 53.9 | |
| L _{eq 1hr} upper 10 percentile | 60.6 | 57.9 | |
| L _{eq 1hr} lower 10 percentile | 56.7 | 47.1 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 65.4 | to | 71.4 | |
| Lmax - Leq (Range) | 15.1 | to | 20.1 | |

Unattended Noise Monitoring Results

16 Gorman Ave - Front Yard

Friday, 14 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 50.8 | 49.0 | - |
| Leq | 57.0 | 55.8 | - |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

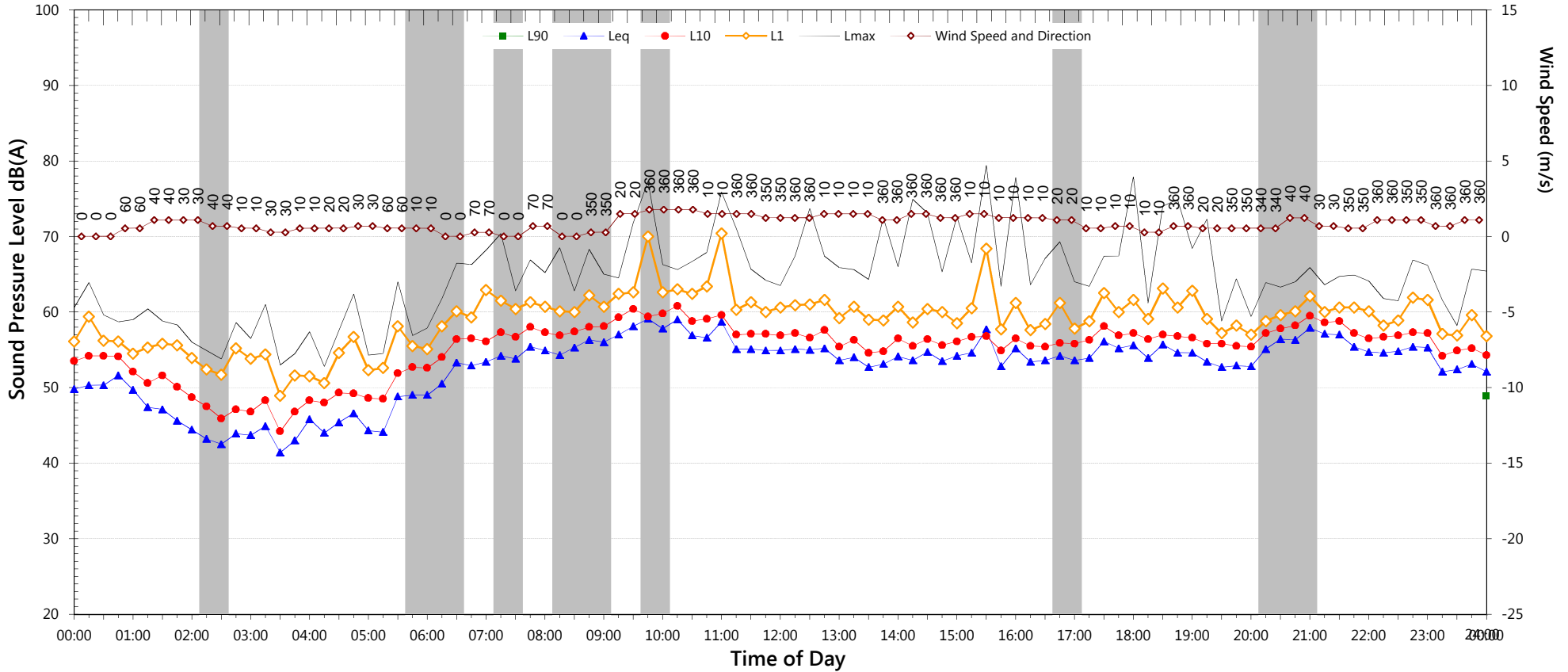
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 59.2 | 53.2 | |
| L _{eq 1hr} upper 10 percentile | 60.4 | 57.5 | |
| L _{eq 1hr} lower 10 percentile | 58.0 | 46.3 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 68.2 | to | 74.2 | |
| Lmax - Leq (Range) | 15.0 | to | 21.0 | |

Unattended Noise Monitoring Results

16 Gorman Ave - Front Yard

Saturday, 15 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | - | - | - |
| Leq | - | - | - |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

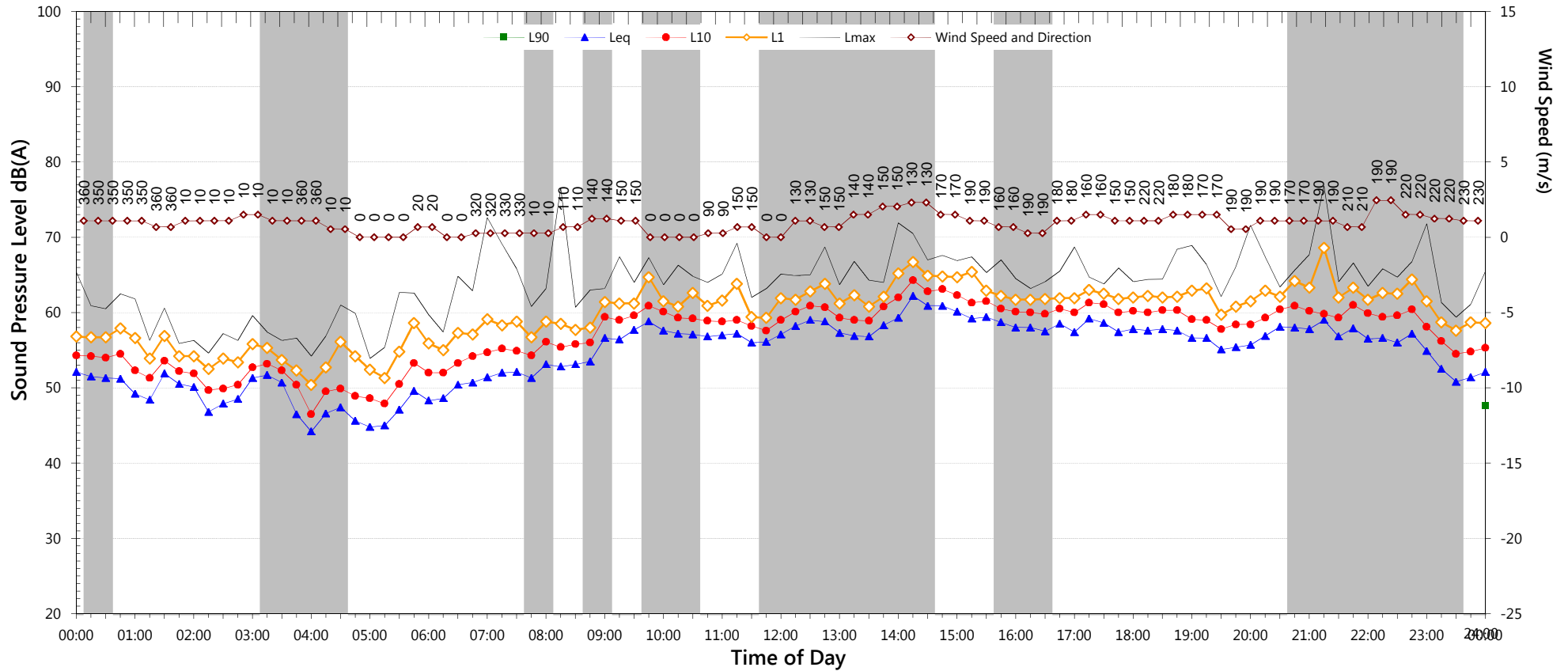
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq} 15 hr and L _{eq} 9 hr | 57.8 | 53.8 | |
| L _{eq} 1hr upper 10 percentile | 60.3 | 57.5 | |
| L _{eq} 1hr lower 10 percentile | 55.6 | 47.7 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 72.6 | to | 72.6 | |
| Lmax - Leq (Range) | 22.2 | to | 22.2 | |

Unattended Noise Monitoring Results

16 Gorman Ave - Front Yard

Sunday, 16 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | - | - | - |
| Leq | - | - | - |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

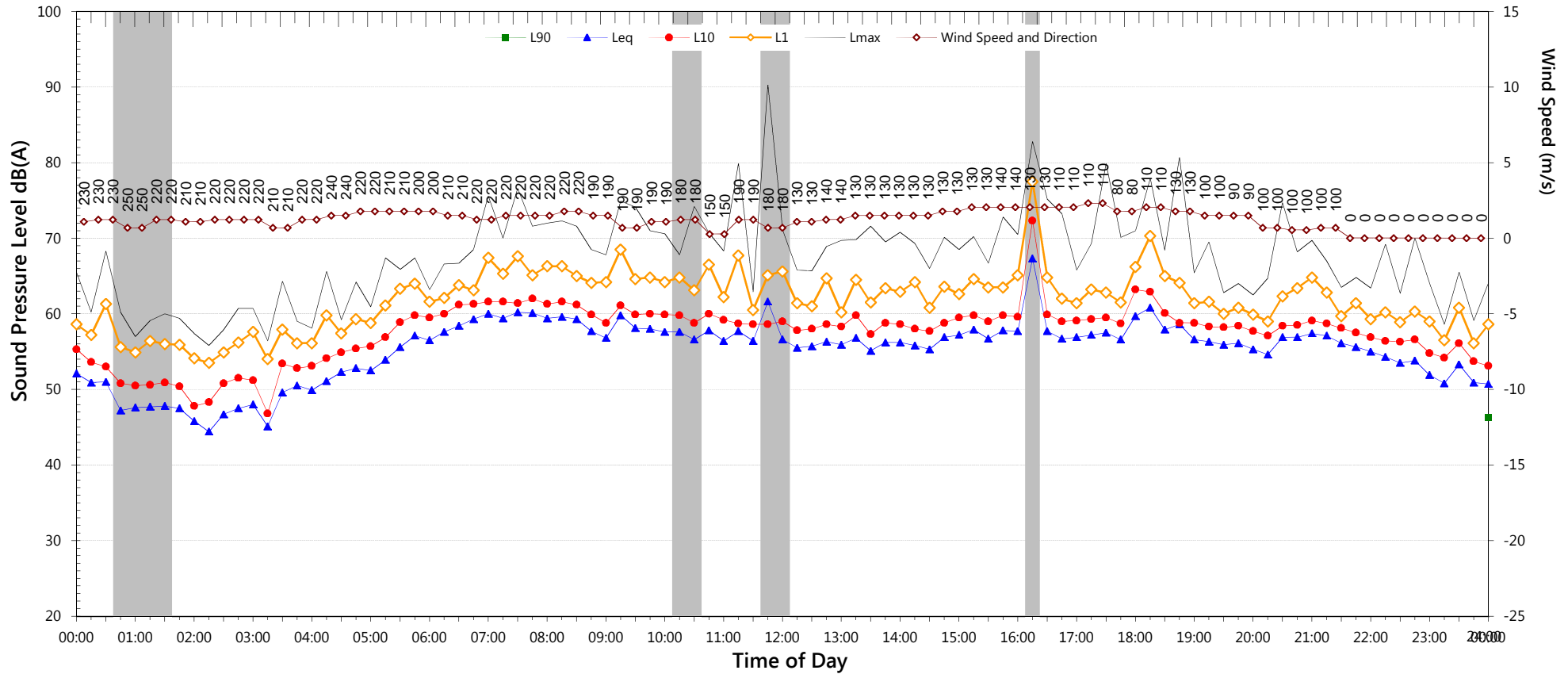
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 59.9 | 56.5 | |
| L _{eq 1hr} upper 10 percentile | 62.8 | 61.4 | |
| L _{eq 1hr} lower 10 percentile | 54.7 | 49.2 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 68.3 | to | 75.6 | |
| Lmax - Leq (Range) | 15.1 | to | 17.3 | |

Unattended Noise Monitoring Results

16 Gorman Ave - Front Yard

Monday, 17 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 49.8 | 50.2 | 40.0 |
| Leq | 57.7 | 57.0 | 52.5 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

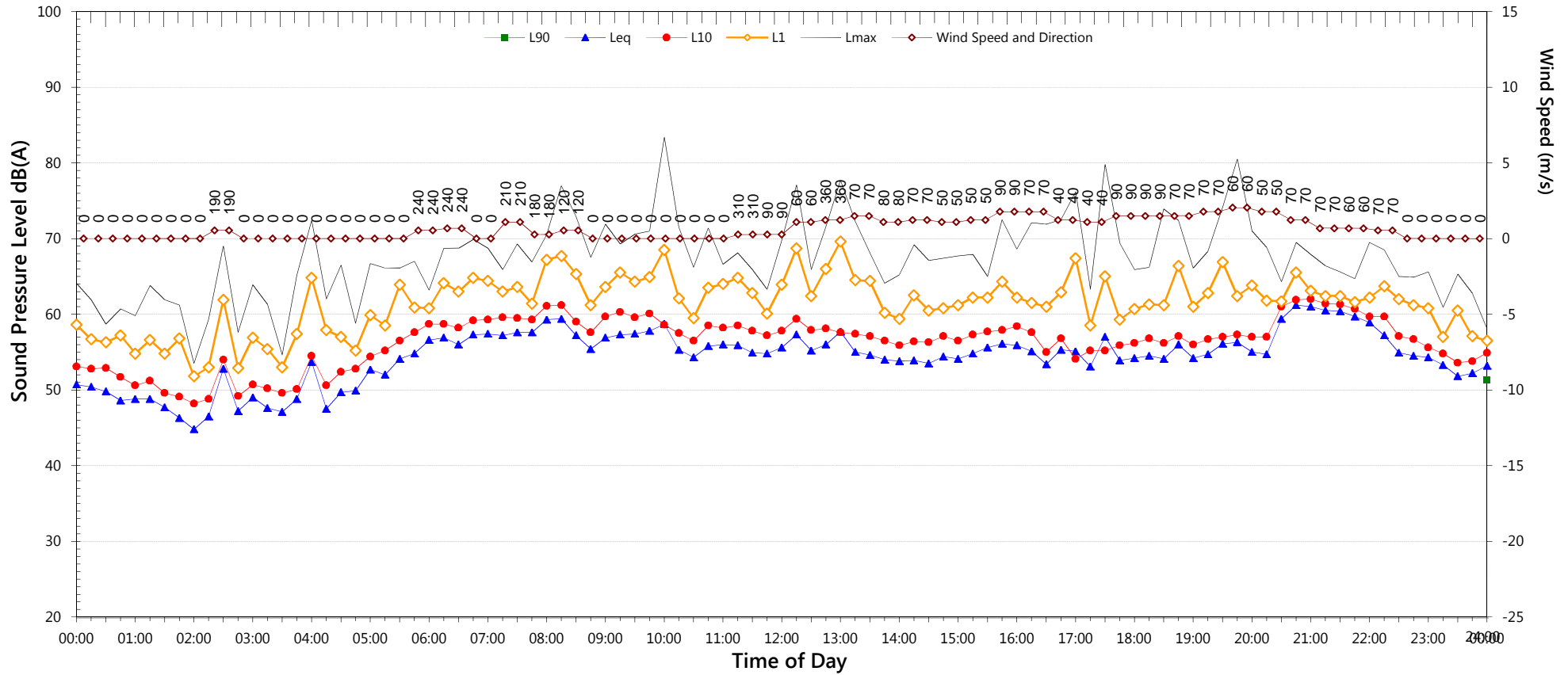
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 60.0 | 55.0 | |
| L _{eq 1hr} upper 10 percentile | 61.8 | 59.4 | |
| L _{eq 1hr} lower 10 percentile | 58.4 | 49.7 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 66.7 | to | 72.4 | |
| Lmax - Leq (Range) | 16.4 | to | 22.2 | |

Unattended Noise Monitoring Results

16 Gorman Ave - Front Yard

Tuesday, 18 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 47.7 | 49.0 | 47.9 |
| Leq | 56.1 | 58.1 | 54.5 |

- NOTES:
1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
 2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
 3. Graphed data measured in free-field; tabulated results facade corrected
 4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

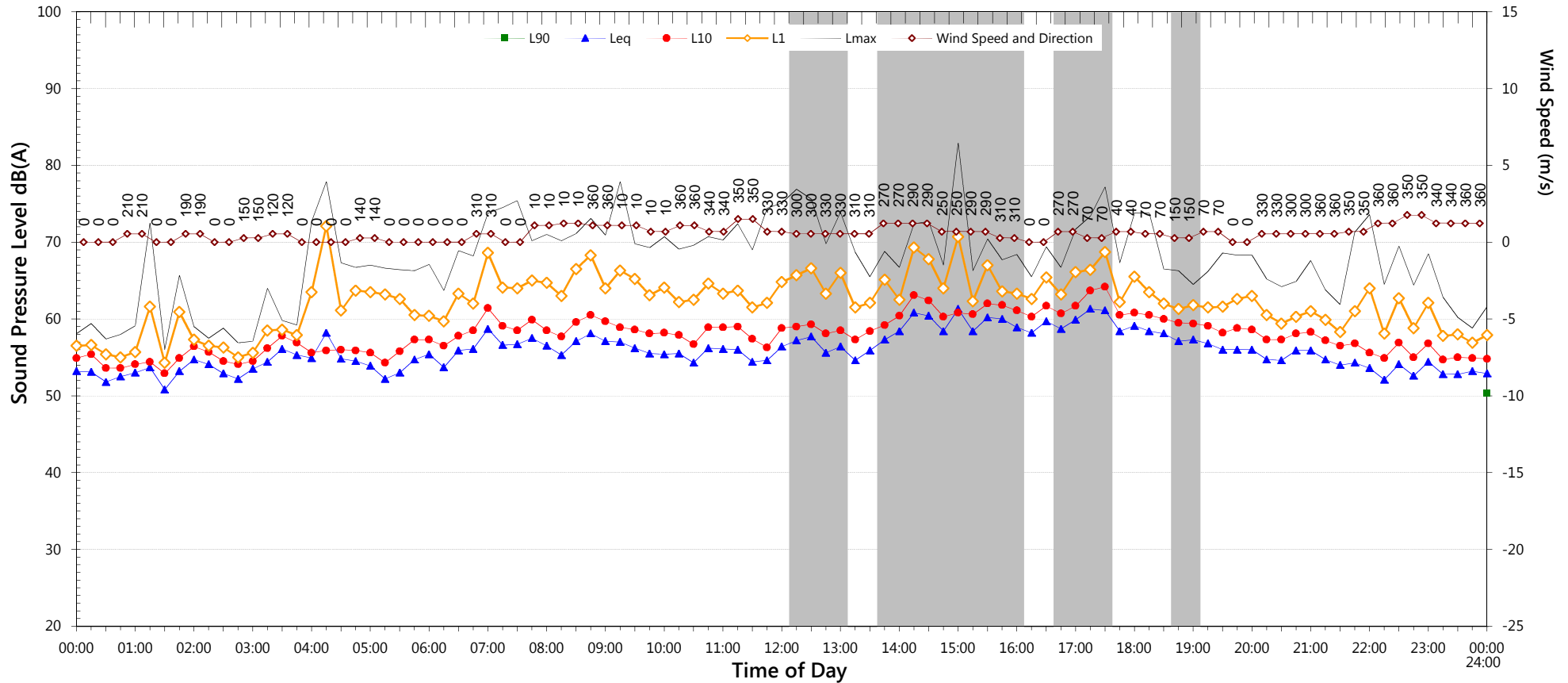
| NSW Road Noise Policy (1m from facade) (see note 3) | | |
|---|----------|--------------------|
| Descriptor | Day | Night ² |
| | 7am-10pm | 10pm-7am |
| L _{eq 15 hr} and L _{eq 9 hr} | 59.2 | 57.0 |
| L _{eq 1hr} upper 10 percentile | 62.3 | 59.0 |
| L _{eq 1hr} lower 10 percentile | 56.7 | 55.1 |

| Night Time Maximum Noise Levels (see note 4) | | | |
|--|------|----|------|
| Lmax (Range) | 72.5 | to | 77.9 |
| Lmax - Leq (Range) | 17.3 | to | 22.2 |

Unattended Noise Monitoring Results

16 Gorman Ave - Front Yard

Wednesday, 19 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | - | 47.6 | 43.3 |
| Leq | - | 55.9 | 53.8 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

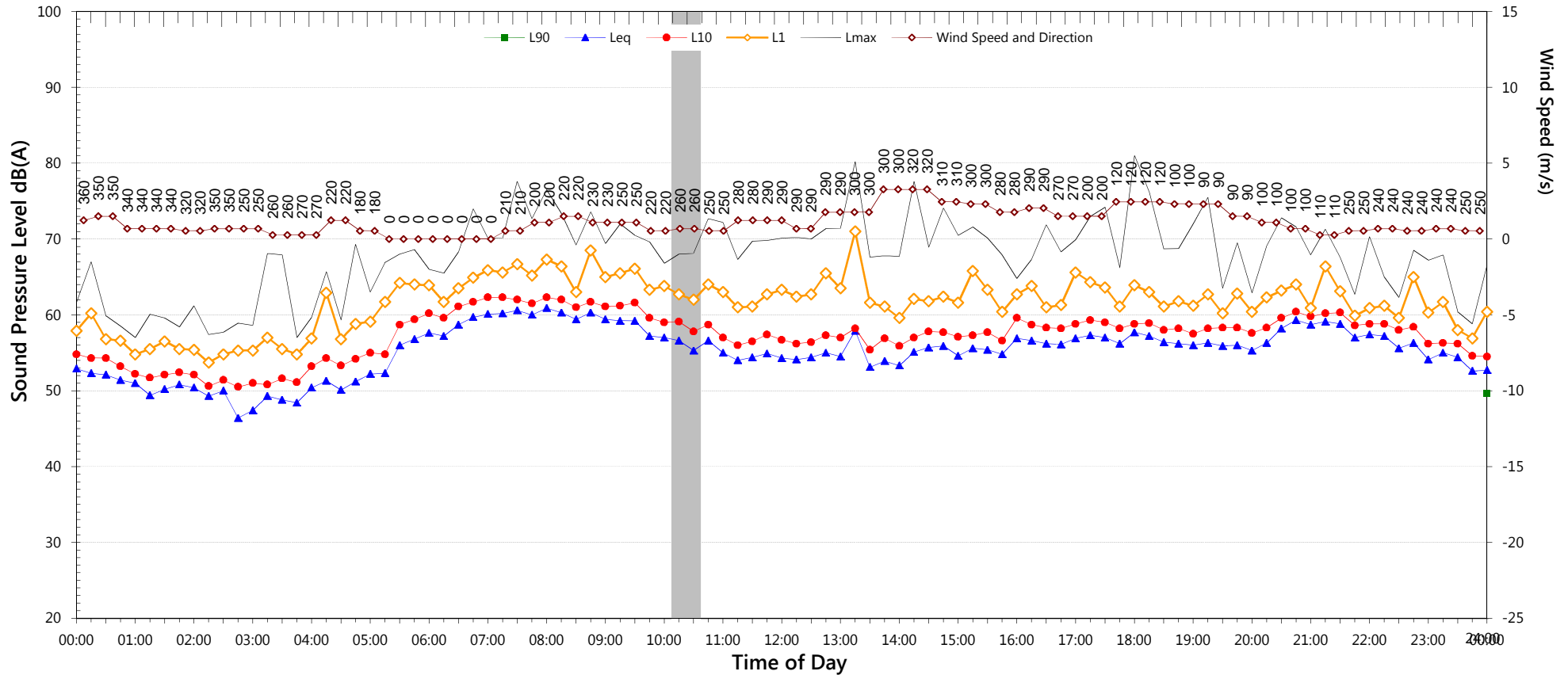
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 58.9 | 56.3 | |
| L _{eq 1hr} upper 10 percentile | 61.5 | 61.6 | |
| L _{eq 1hr} lower 10 percentile | 56.9 | 51.0 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 67.0 | to | 69.5 | |
| Lmax - Leq (Range) | 15.3 | to | 18.8 | |

Unattended Noise Monitoring Results

16 Gorman Ave - Front Yard

Thursday, 20 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 48.5 | 51.1 | 44.4 |
| Leq | 57.2 | 57.3 | 55.3 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

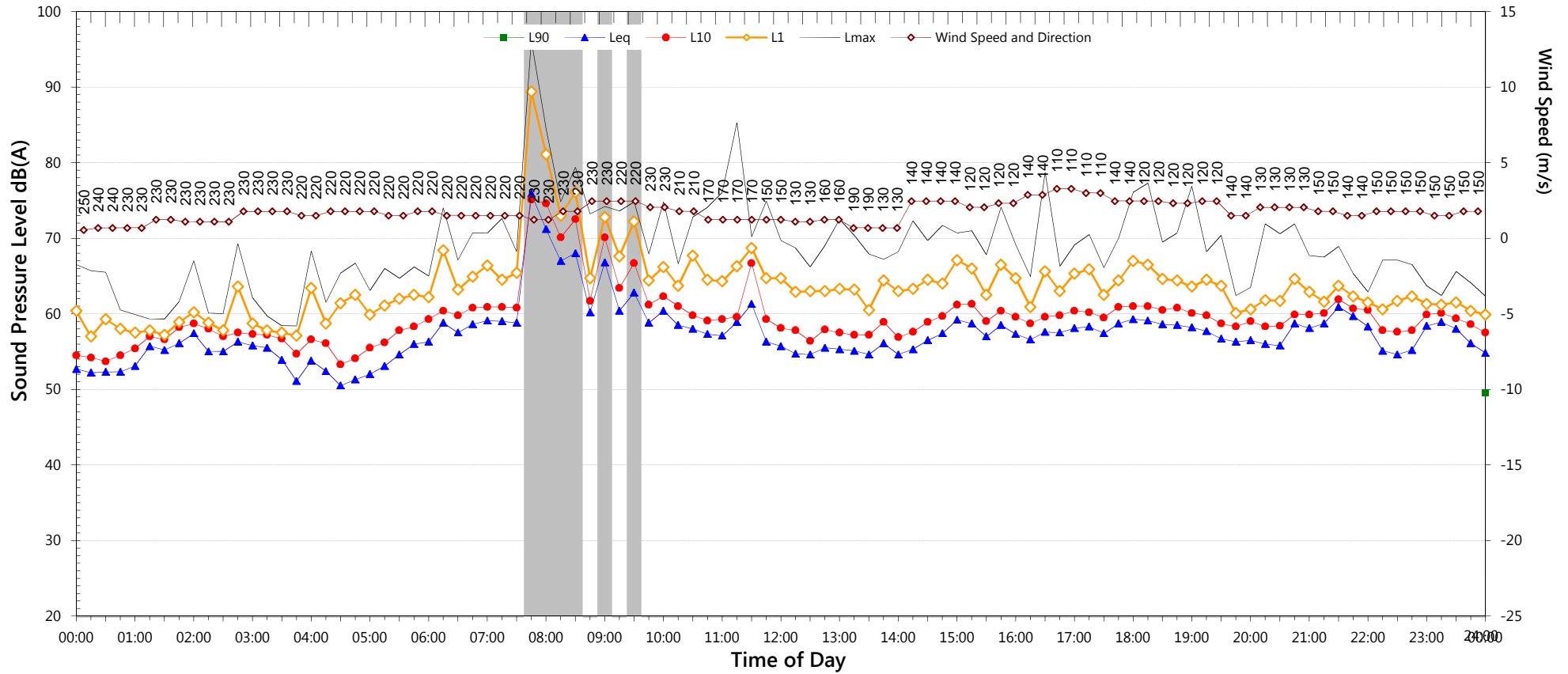
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 59.7 | 57.8 | |
| L _{eq 1hr} upper 10 percentile | 62.7 | 61.0 | |
| L _{eq 1hr} lower 10 percentile | 57.0 | 54.1 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 66.7 | to | 74.0 | |
| Lmax - Leq (Range) | 15.1 | to | 15.5 | |

Unattended Noise Monitoring Results

16 Gorman Ave - Front Yard

Friday, 21 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 48.8 | 51.1 | 43.7 |
| Leq | 57.8 | 58.2 | 54.6 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

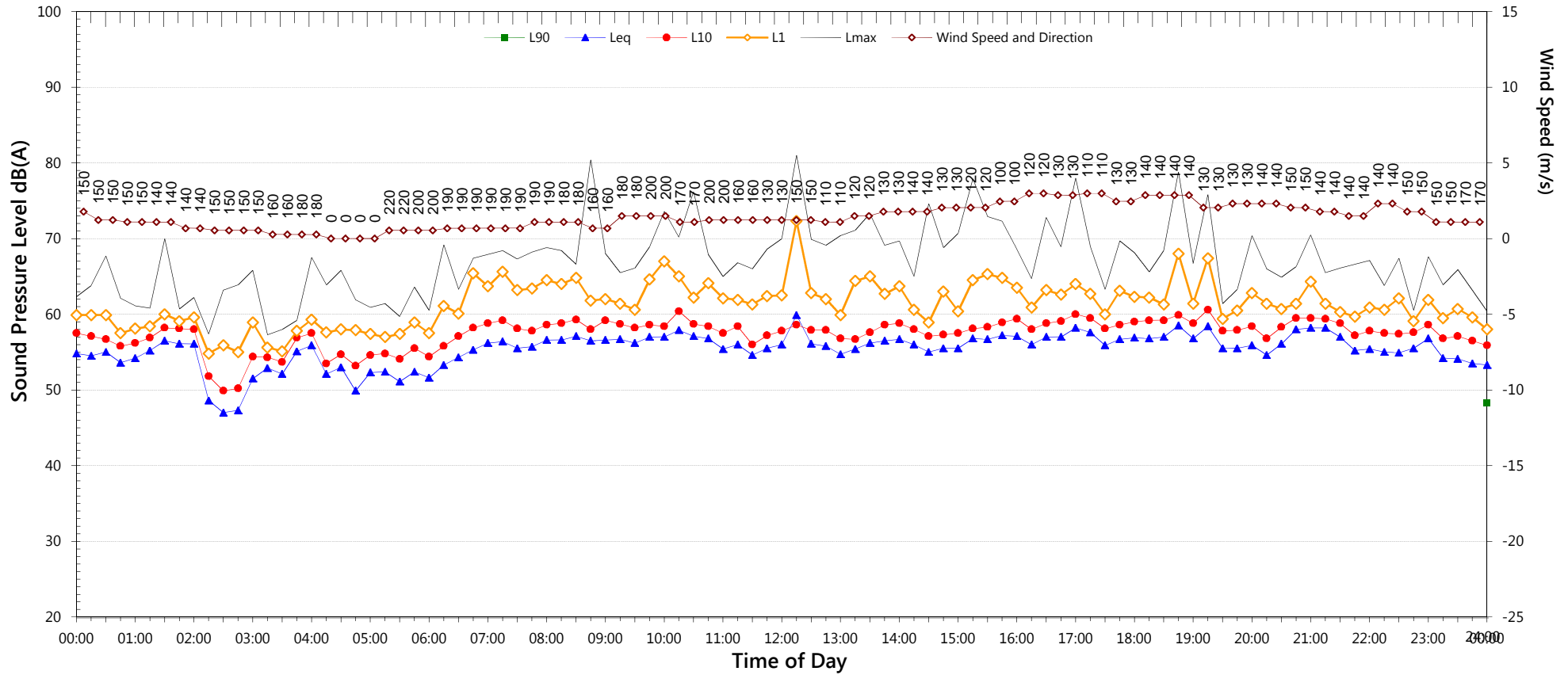
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 60.5 | 57.1 | |
| L _{eq 1hr} upper 10 percentile | 62.6 | 59.7 | |
| L _{eq 1hr} lower 10 percentile | 57.6 | 51.5 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 65.8 | to | 65.8 | |
| Lmax - Leq (Range) | 16.8 | to | 16.8 | |

Unattended Noise Monitoring Results

16 Gorman Ave - Front Yard

Saturday, 22 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 50.6 | 49.6 | 41.0 |
| Leq | 56.6 | 56.9 | 52.9 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

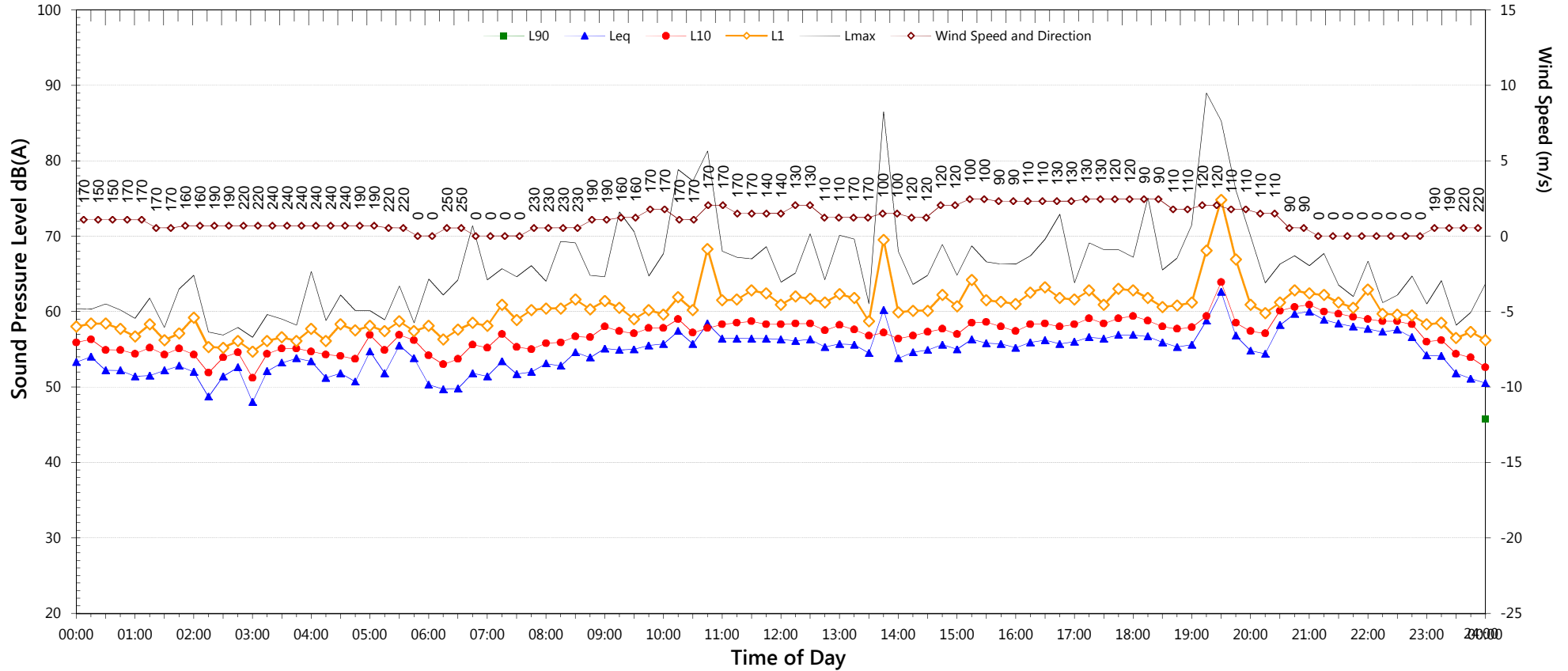
| NSW Road Noise Policy (1m from facade) (see note 3) | | |
|---|----------|--------------------|
| Descriptor | Day | Night ² |
| | 7am-10pm | 10pm-7am |
| L _{eq 15 hr} and L _{eq 9 hr} | 59.1 | 55.4 |
| L _{eq 1hr} upper 10 percentile | 59.7 | 58.1 |
| L _{eq 1hr} lower 10 percentile | 58.0 | 53.1 |

| Night Time Maximum Noise Levels (see note 4) | | | |
|--|------|----|------|
| Lmax (Range) | 71.4 | to | 71.4 |
| Lmax - Leq (Range) | 20.6 | to | 20.6 |

Unattended Noise Monitoring Results

16 Gorman Ave - Front Yard

Sunday, 23 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 47.5 | 48.3 | 46.0 |
| Leq | 56.0 | 58.2 | 54.7 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

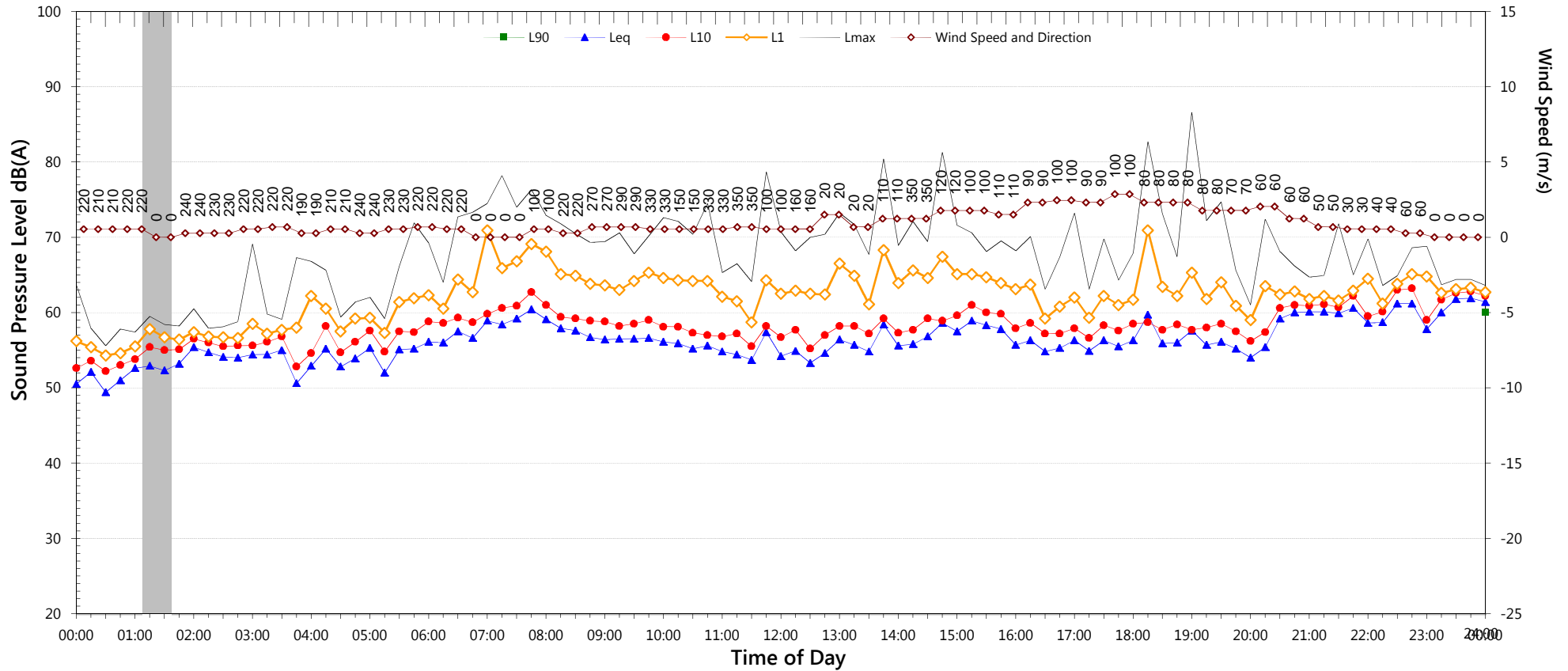
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 59.0 | 57.2 | |
| L _{eq 1hr} upper 10 percentile | 61.4 | 59.9 | |
| L _{eq 1hr} lower 10 percentile | 56.0 | 53.9 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 71.9 | to | 74.5 | |
| Lmax - Leq (Range) | 17.1 | to | 17.1 | |

Unattended Noise Monitoring Results

16 Gorman Ave - Front Yard

Monday, 24 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 49.5 | 49.5 | 44.6 |
| Leq | 56.7 | 58.3 | 57.5 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

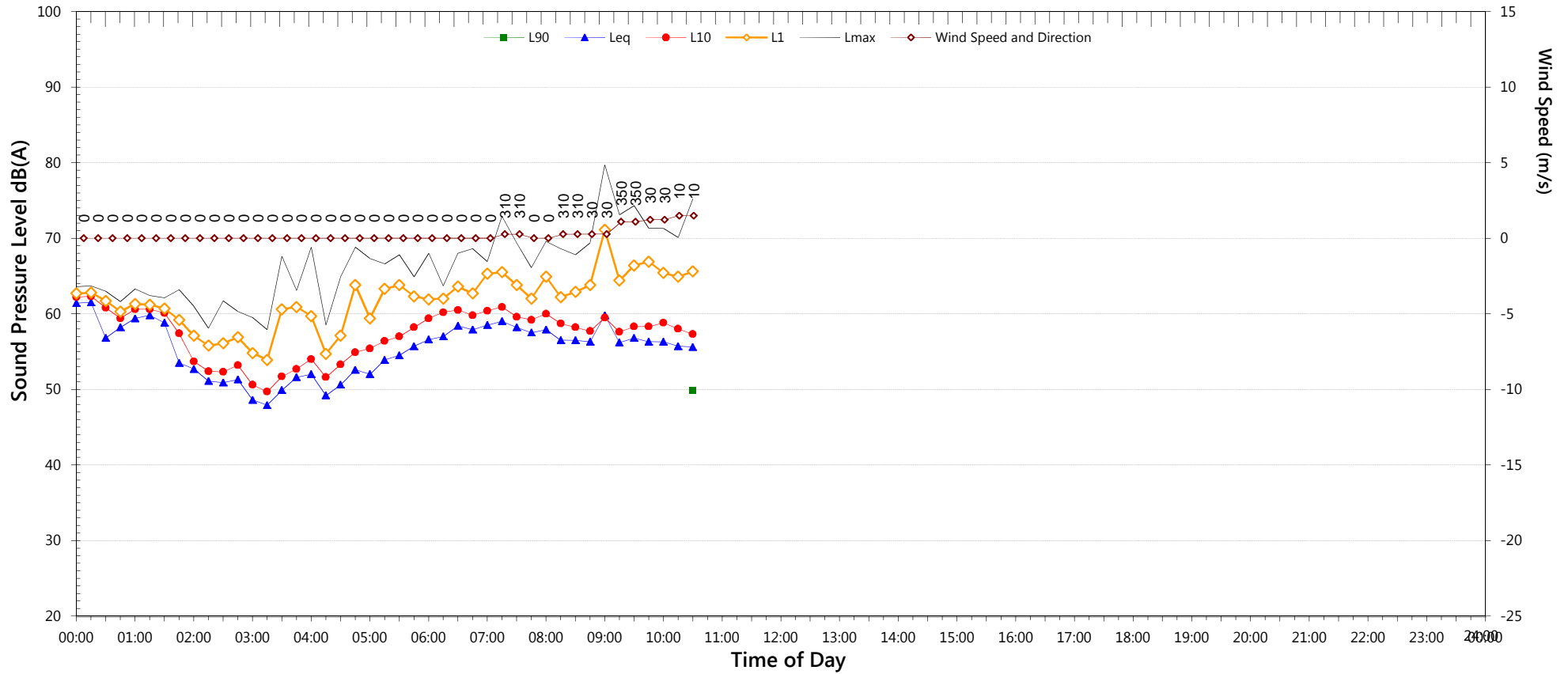
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 59.7 | 60.0 | |
| L _{eq 1hr} upper 10 percentile | 62.1 | 63.8 | |
| L _{eq 1hr} lower 10 percentile | 57.6 | 53.1 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 68.8 | to | 68.8 | |
| Lmax - Leq (Range) | 17.5 | to | 18.2 | |

Unattended Noise Monitoring Results

16 Gorman Ave - Front Yard

Tuesday, 25 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | - | - | - |
| Leq | - | - | - |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

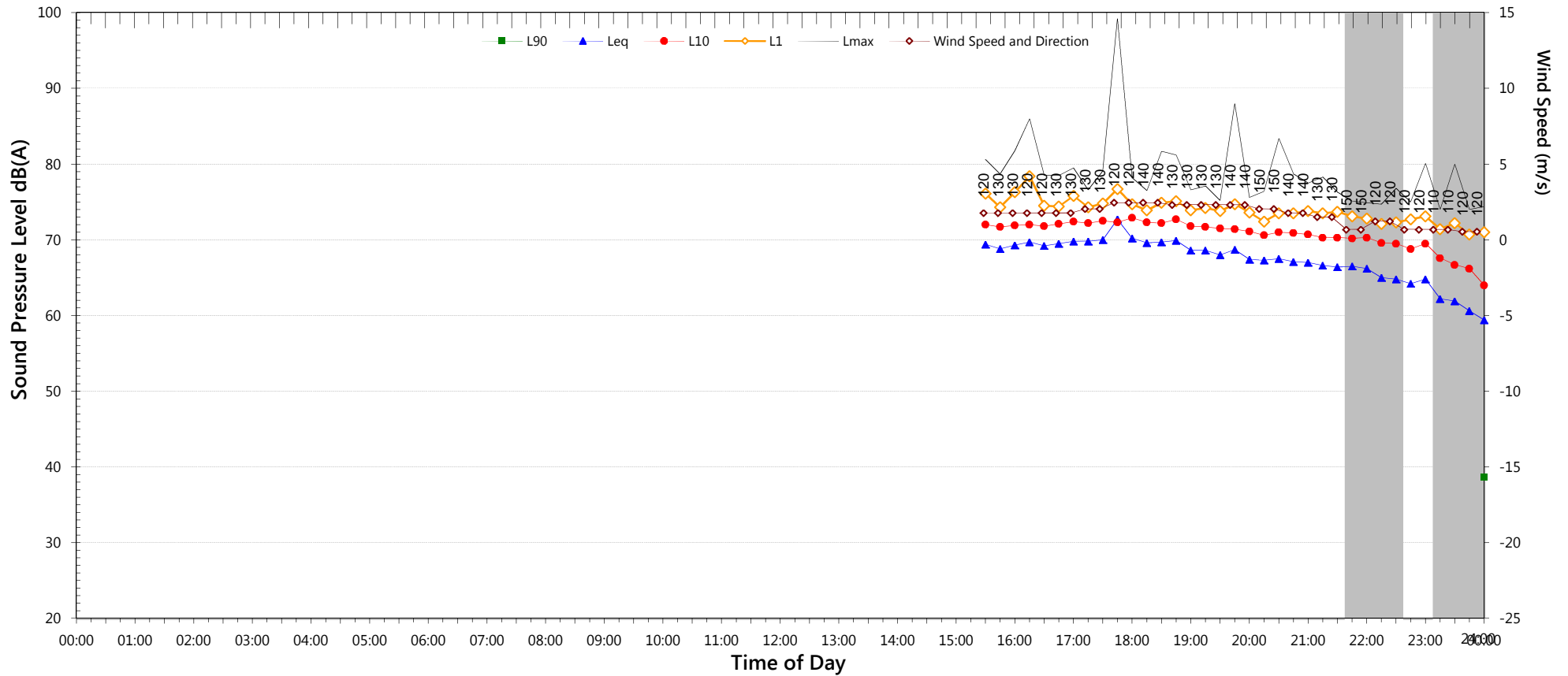
| NSW Road Noise Policy (1m from facade) (see note 3) | | |
|---|----------|--------------------|
| Descriptor | Day | Night ² |
| | 7am-10pm | 10pm-7am |
| L _{eq 15 hr} and L _{eq 9 hr} | 59.7 | - |
| L _{eq 1hr} upper 10 percentile | 60.7 | - |
| L _{eq 1hr} lower 10 percentile | 58.2 | - |

| Night Time Maximum Noise Levels (see note 4) | | | |
|--|---|----|---|
| Lmax (Range) | - | to | - |
| Lmax - Leq (Range) | - | to | - |

Unattended Noise Monitoring Results

19 Memorial Ave - Front Yard

Tuesday, 11 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | - | 52.1 | - |
| Leq | - | 68.2 | - |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

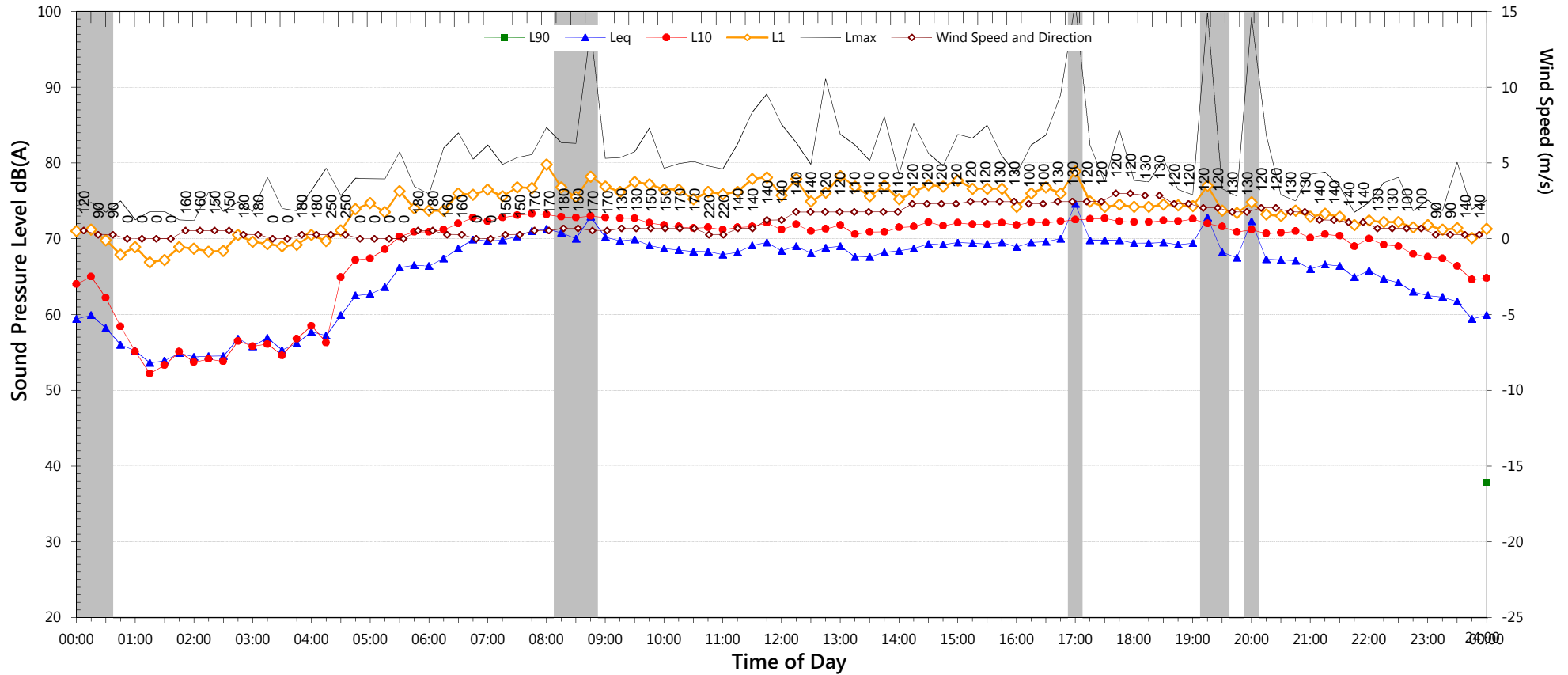
| NSW Road Noise Policy (1m from facade) (see note 3) | | |
|---|----------|--------------------|
| Descriptor | Day | Night ² |
| | 7am-10pm | 10pm-7am |
| L _{eq 15 hr} and L _{eq 9 hr} | 71.6 | 66.0 |
| L _{eq 1hr} upper 10 percentile | 73.3 | 71.5 |
| L _{eq 1hr} lower 10 percentile | 69.0 | 56.7 |

| Night Time Maximum Noise Levels (see note 4) | | | |
|--|------|----|------|
| Lmax (Range) | 73.6 | to | 81.5 |
| Lmax - Leq (Range) | 15.6 | to | 21.5 |

Unattended Noise Monitoring Results

19 Memorial Ave - Front Yard

Wednesday, 12 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 55.6 | - | 37.8 |
| Leq | 69.2 | - | 63.2 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

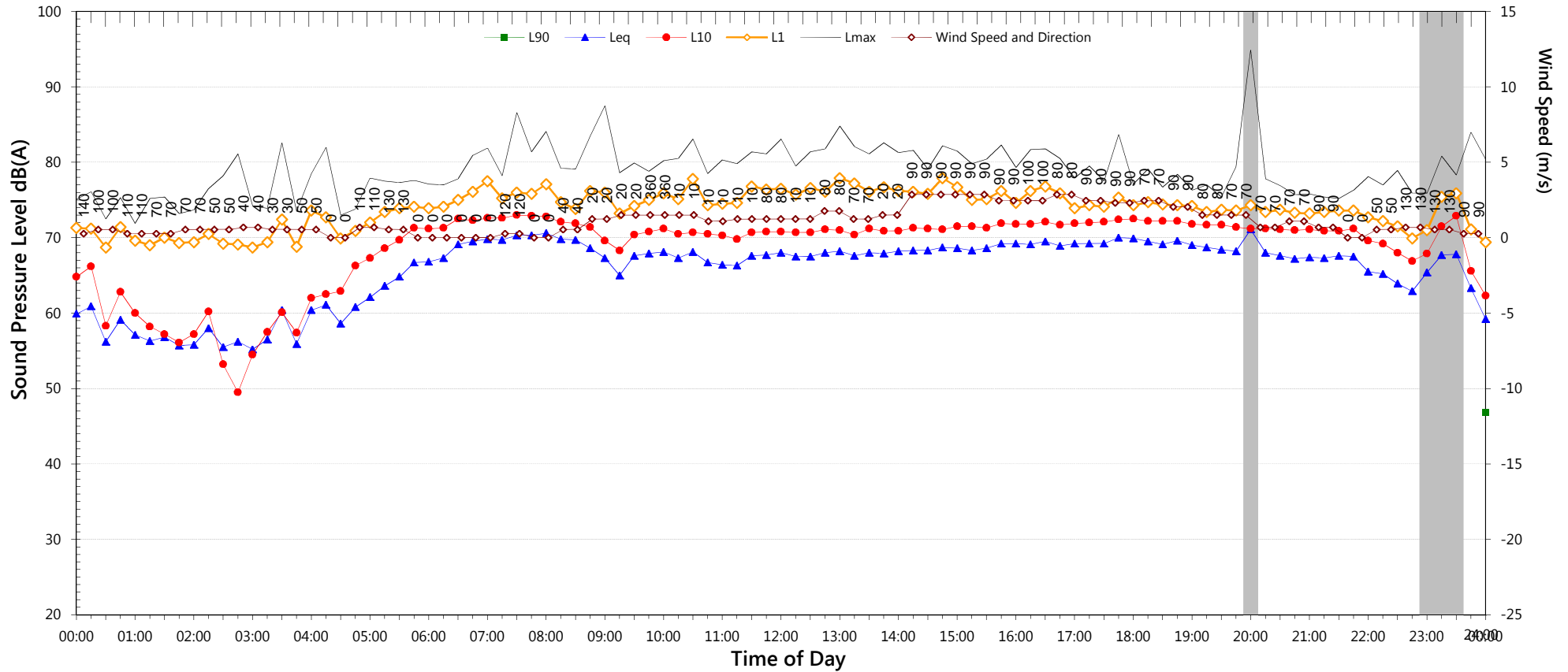
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 71.4 | 65.7 | |
| L _{eq 1hr} upper 10 percentile | 72.9 | 71.5 | |
| L _{eq 1hr} lower 10 percentile | 69.0 | 58.7 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 75.4 | to | 82.6 | |
| Lmax - Leq (Range) | 17.4 | to | 24.7 | |

Unattended Noise Monitoring Results

19 Memorial Ave - Front Yard

Thursday, 13 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 51.8 | 51.5 | - |
| Leq | 68.6 | 68.2 | - |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

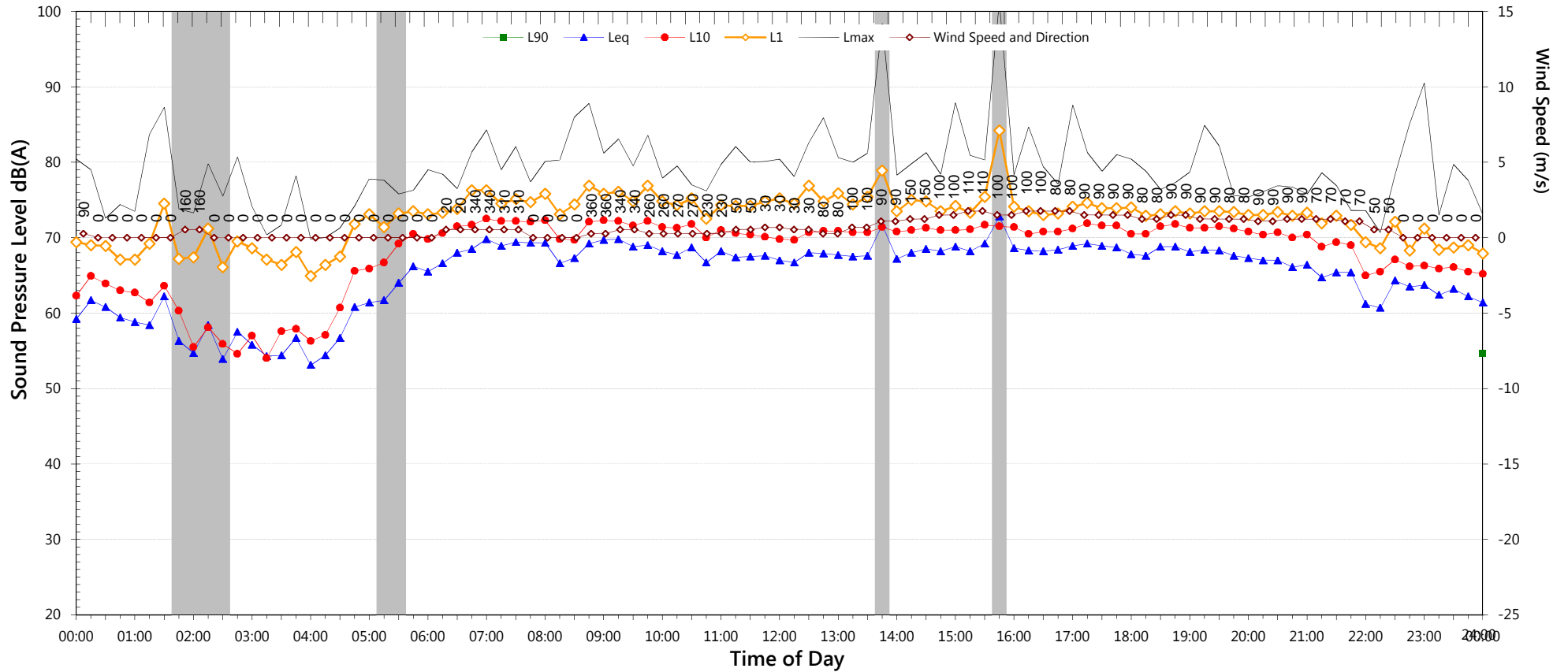
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 71.0 | 65.8 | |
| L _{eq 1hr} upper 10 percentile | 72.4 | 70.9 | |
| L _{eq 1hr} lower 10 percentile | 69.6 | 57.3 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 77.8 | to | 87.3 | |
| Lmax - Leq (Range) | 15.9 | to | 26.6 | |

Unattended Noise Monitoring Results

19 Memorial Ave - Front Yard

Friday, 14 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 54.0 | 50.5 | - |
| Leq | 68.3 | 67.1 | - |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

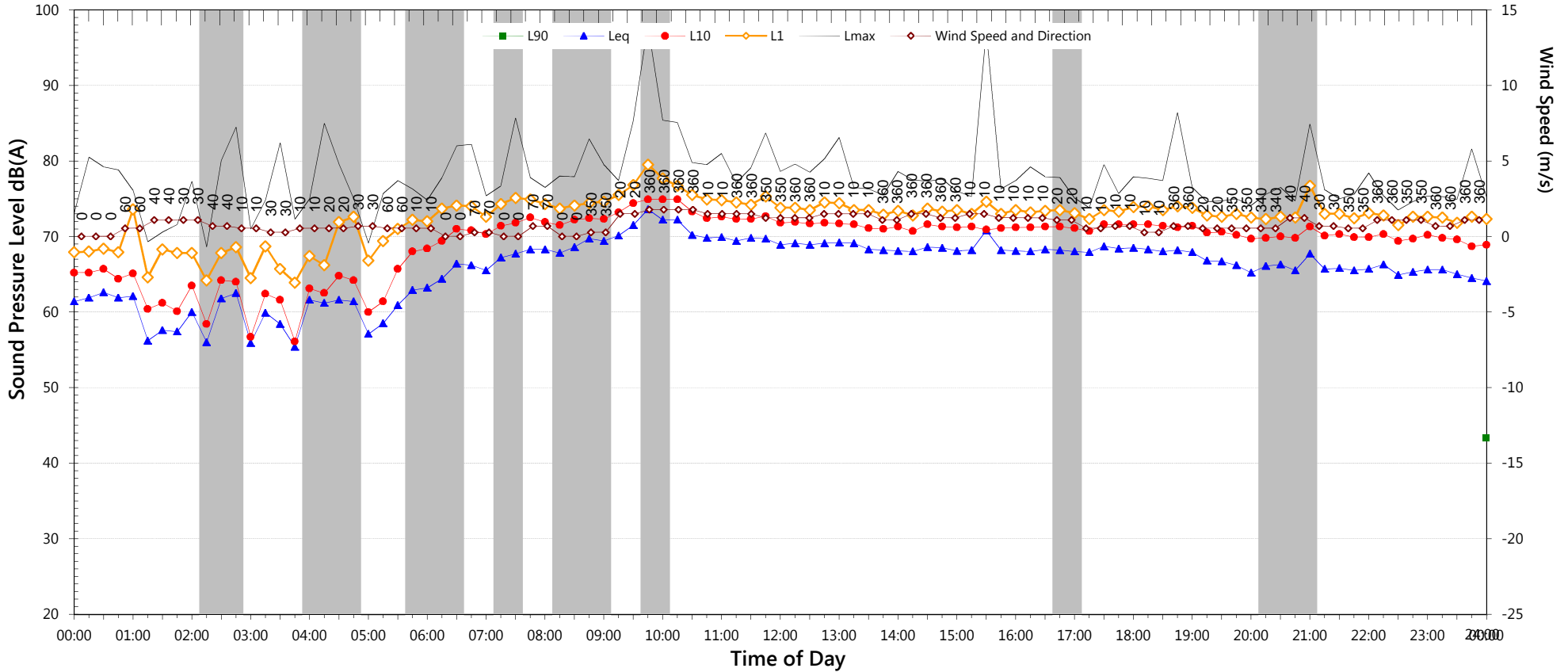
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 70.5 | 64.2 | |
| L _{eq 1hr} upper 10 percentile | 71.6 | 68.4 | |
| L _{eq 1hr} lower 10 percentile | 68.2 | 58.4 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 71.0 | to | 90.5 | |
| Lmax - Leq (Range) | 15.1 | to | 27.3 | |

Unattended Noise Monitoring Results

19 Memorial Ave - Front Yard

Saturday, 15 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | - | - | - |
| Leq | - | - | - |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

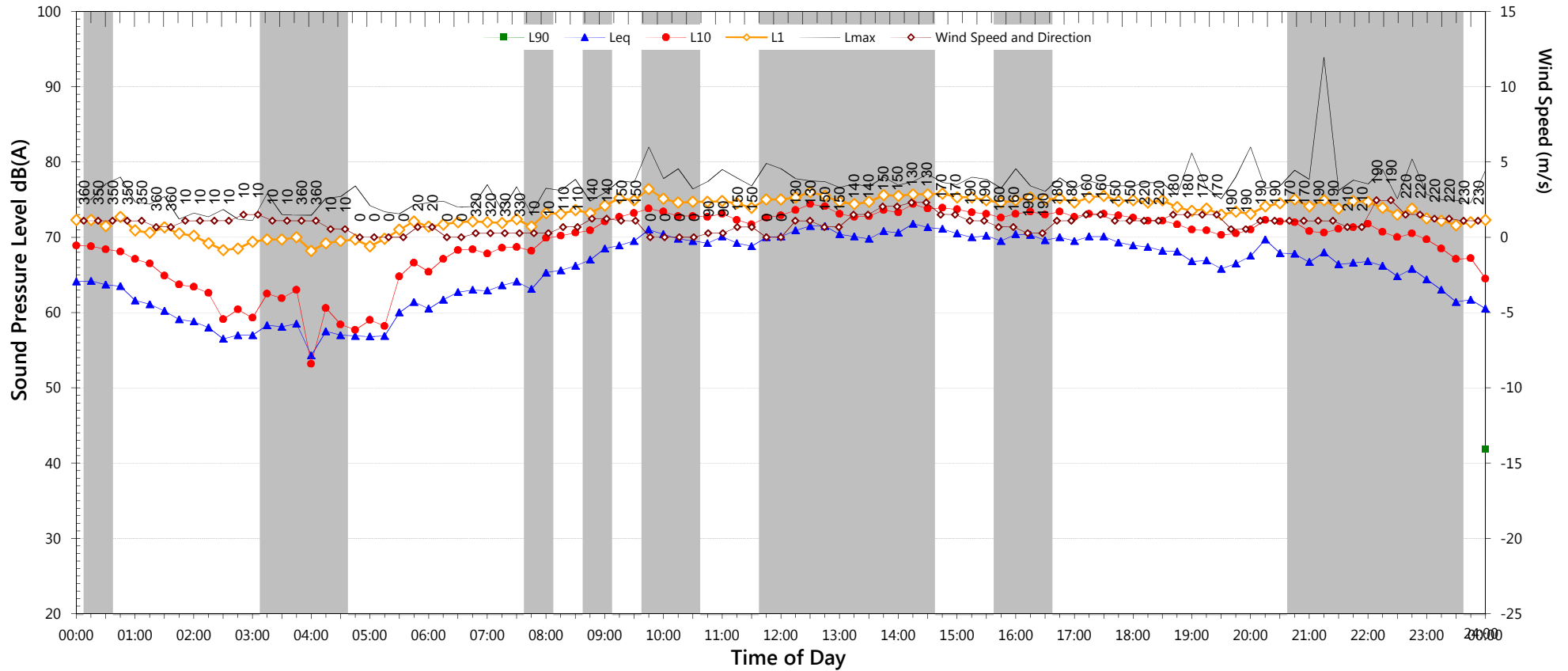
| NSW Road Noise Policy (1m from facade) (see note 3) | | |
|---|----------|--------------------|
| Descriptor | Day | Night ² |
| | 7am-10pm | 10pm-7am |
| L _{eq 15 hr} and L _{eq 9 hr} | 71.1 | 65.0 |
| L _{eq 1hr} upper 10 percentile | 73.3 | 68.1 |
| L _{eq 1hr} lower 10 percentile | 68.4 | 59.4 |

| Night Time Maximum Noise Levels (see note 4) | | | |
|--|------|----|------|
| Lmax (Range) | 73.7 | to | 81.6 |
| Lmax - Leq (Range) | 15.3 | to | 19.9 |

Unattended Noise Monitoring Results

19 Memorial Ave - Front Yard

Sunday, 16 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | - | - | - |
| Leq | - | - | - |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

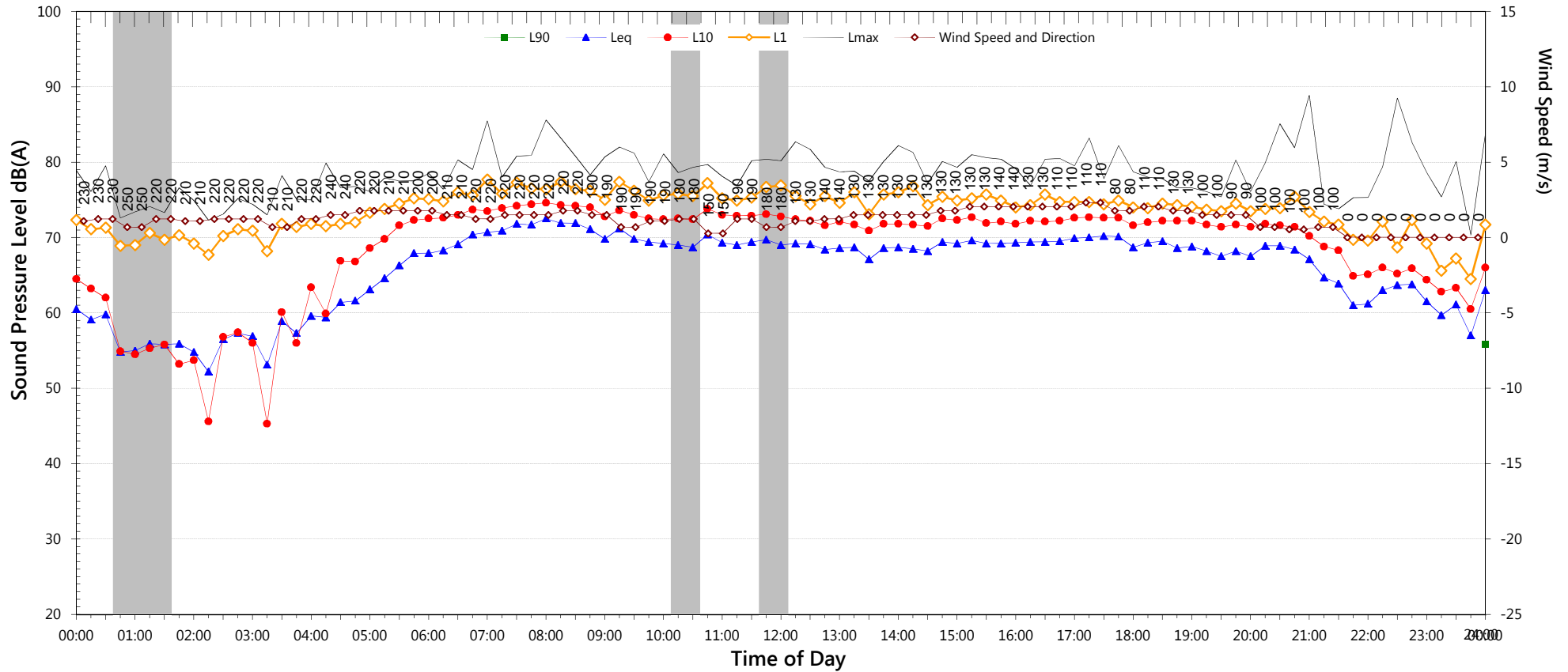
| NSW Road Noise Policy (1m from facade) (see note 3) | | |
|---|----------|--------------------|
| Descriptor | Day | Night ² |
| | 7am-10pm | 10pm-7am |
| L _{eq} 15 hr and L _{eq} 9 hr | 71.2 | 66.9 |
| L _{eq} 1hr upper 10 percentile | 73.2 | 72.2 |
| L _{eq} 1hr lower 10 percentile | 66.9 | 57.9 |

| Night Time Maximum Noise Levels (see note 4) | | | |
|--|------|----|------|
| Lmax (Range) | 75.2 | to | 85.5 |
| Lmax - Leq (Range) | 15.8 | to | 21.2 |

Unattended Noise Monitoring Results

19 Memorial Ave - Front Yard

Monday, 17 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 53.7 | 49.7 | - |
| Leq | 69.8 | 67.6 | - |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

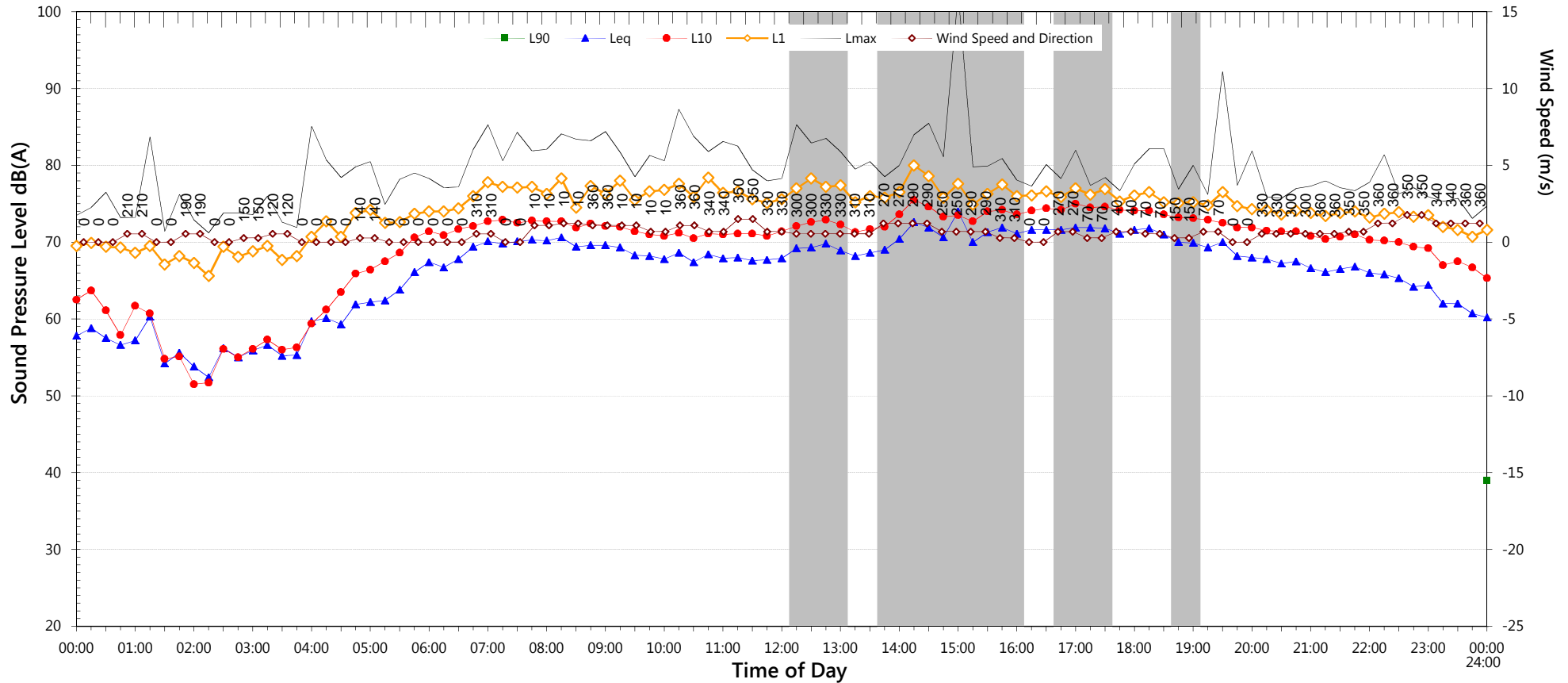
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq} 15 hr and L _{eq} 9 hr | 71.8 | 66.0 | |
| L _{eq} 1hr upper 10 percentile | 74.0 | 71.4 | |
| L _{eq} 1hr lower 10 percentile | 68.6 | 57.3 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 72.3 | to | 88.5 | |
| Lmax - Leq (Range) | 16.5 | to | 25.4 | |

Unattended Noise Monitoring Results

19 Memorial Ave - Front Yard

Wednesday, 19 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | - | 48.9 | 37.6 |
| Leq | - | 68.4 | 64.4 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

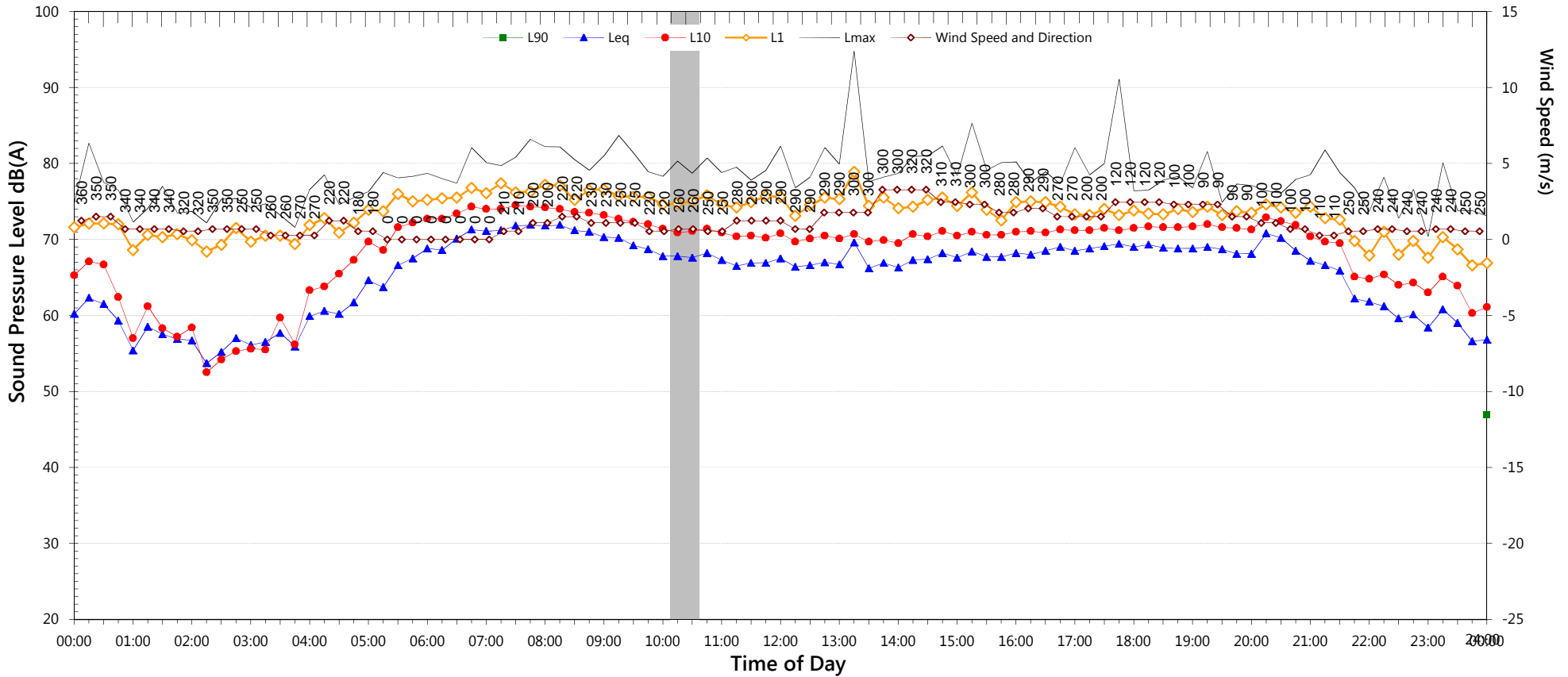
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 71.6 | 66.9 | |
| L _{eq 1hr} upper 10 percentile | 74.1 | 72.9 | |
| L _{eq 1hr} lower 10 percentile | 69.1 | 58.2 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 75.4 | to | 82.7 | |
| Lmax - Leq (Range) | 16.4 | to | 22.4 | |

Unattended Noise Monitoring Results

19 Memorial Ave - Front Yard

Thursday, 20 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 49.9 | 53.6 | 43.1 |
| Leq | 68.9 | 68.2 | 62.8 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

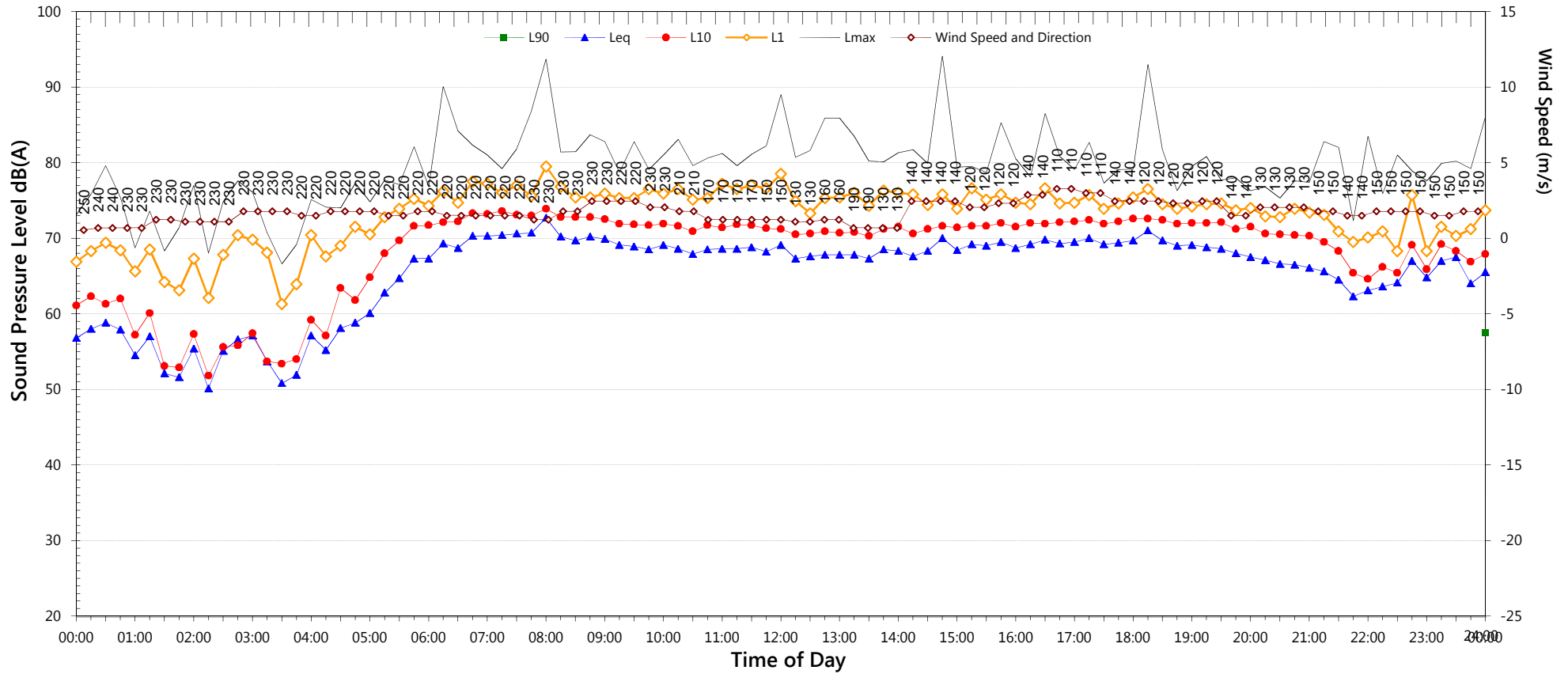
| NSW Road Noise Policy (1m from facade) (see note 3) | | |
|---|----------|--------------------|
| Descriptor | Day | Night ² |
| | 7am-10pm | 10pm-7am |
| L _{eq 15 hr} and L _{eq 9 hr} | 71.2 | 65.3 |
| L _{eq 1hr} upper 10 percentile | 73.9 | 72.2 |
| L _{eq 1hr} lower 10 percentile | 68.3 | 56.6 |

| Night Time Maximum Noise Levels (see note 4) | | | |
|--|------|----|------|
| Lmax (Range) | 75.1 | to | 90.1 |
| Lmax - Leq (Range) | 16.2 | to | 22.4 |

Unattended Noise Monitoring Results

19 Memorial Ave - Front Yard

Friday, 21 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 54.5 | 50.1 | - |
| Leq | 69.2 | 67.7 | - |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

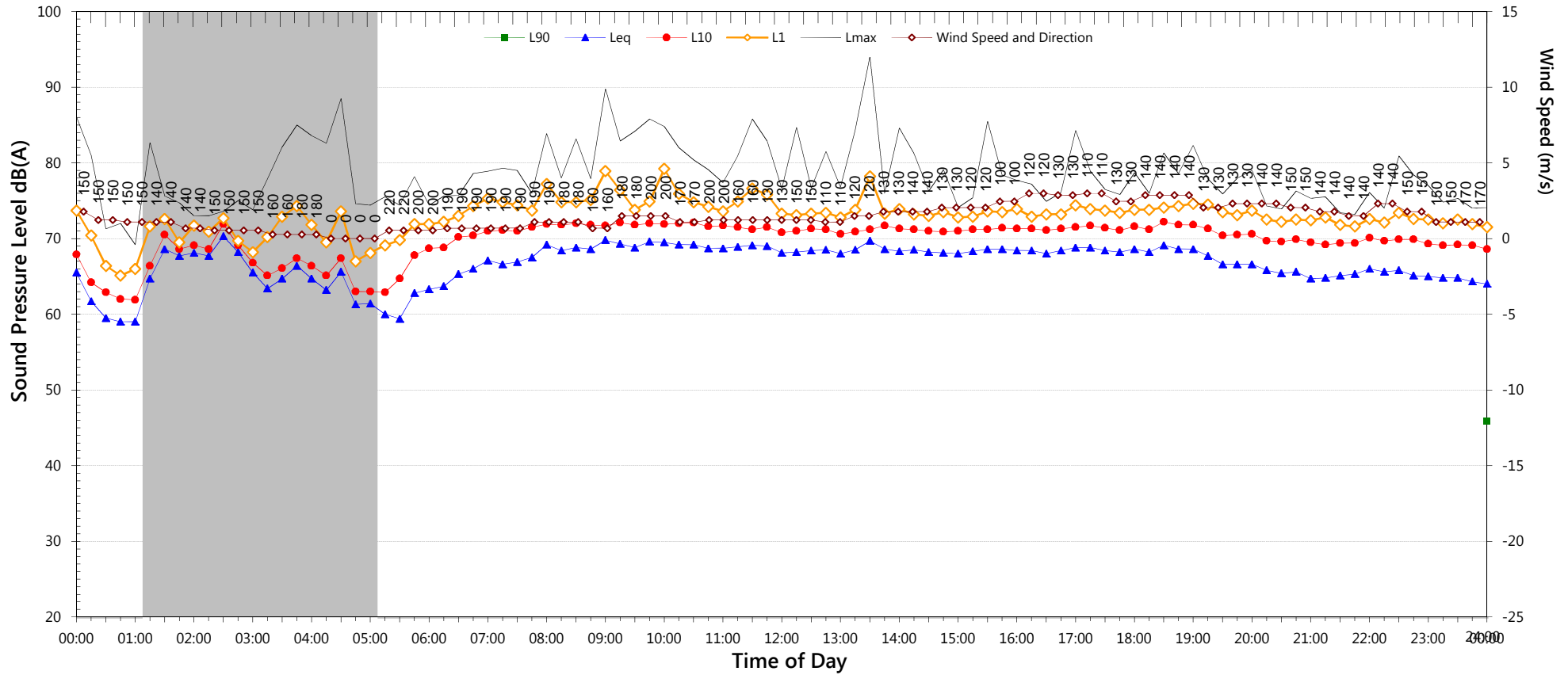
| NSW Road Noise Policy (1m from facade) (see note 3) | | |
|---|----------|--------------------|
| Descriptor | Day | Night ² |
| | 7am-10pm | 10pm-7am |
| L _{eq 15 hr} and L _{eq 9 hr} | 71.3 | 66.8 |
| L _{eq 1hr} upper 10 percentile | 73.1 | 68.7 |
| L _{eq 1hr} lower 10 percentile | 68.0 | 62.5 |

| Night Time Maximum Noise Levels (see note 4) | | | |
|--|------|----|------|
| Lmax (Range) | 78.2 | to | 86.1 |
| Lmax - Leq (Range) | 15.9 | to | 21.0 |

Unattended Noise Monitoring Results

19 Memorial Ave - Front Yard

Saturday, 22 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 54.5 | 49.3 | 40.5 |
| Leq | 68.6 | 66.8 | 62.1 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

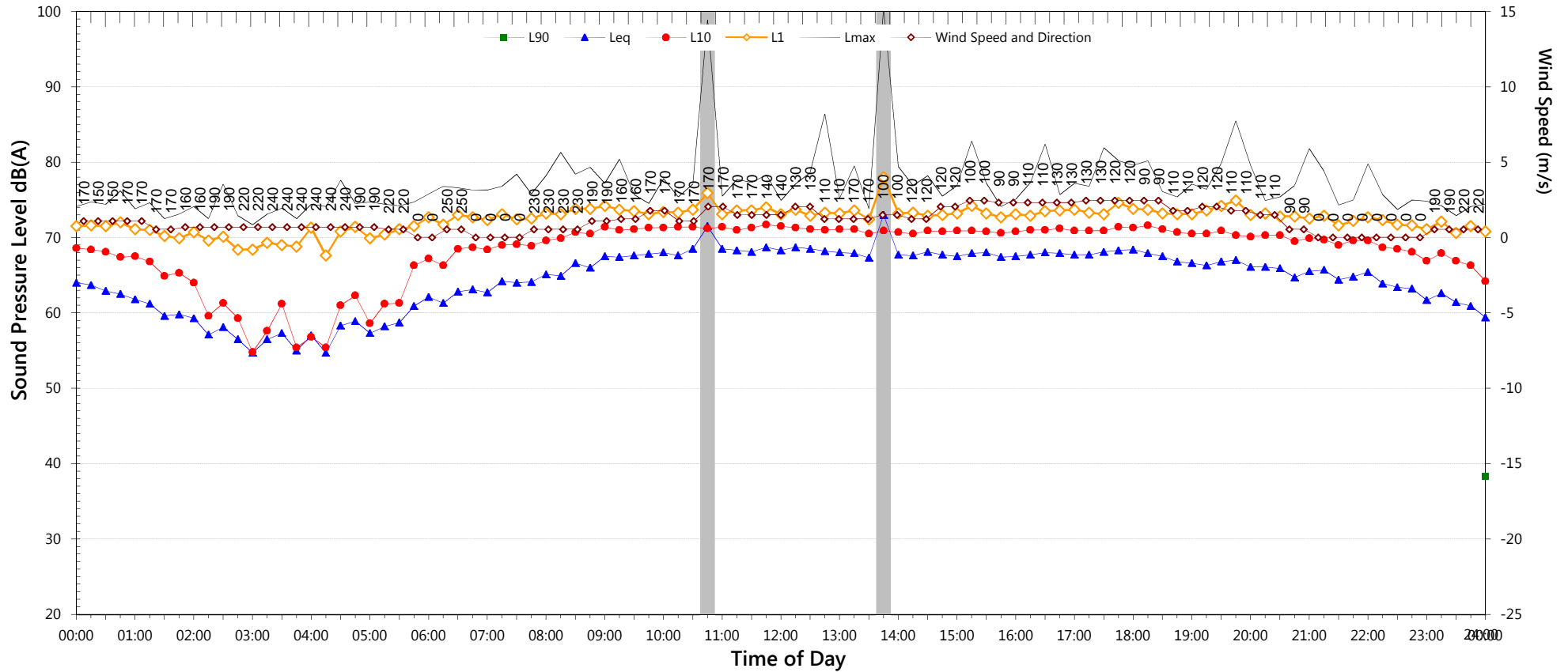
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 70.7 | 64.6 | |
| L _{eq 1hr} upper 10 percentile | 71.6 | 67.9 | |
| L _{eq 1hr} lower 10 percentile | 67.9 | 59.0 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 74.4 | to | 80.9 | |
| Lmax - Leq (Range) | 15.5 | to | 20.3 | |

Unattended Noise Monitoring Results

19 Memorial Ave - Front Yard

Sunday, 23 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 49.2 | 45.4 | 38.3 |
| Leq | 67.8 | 66.2 | 63.1 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

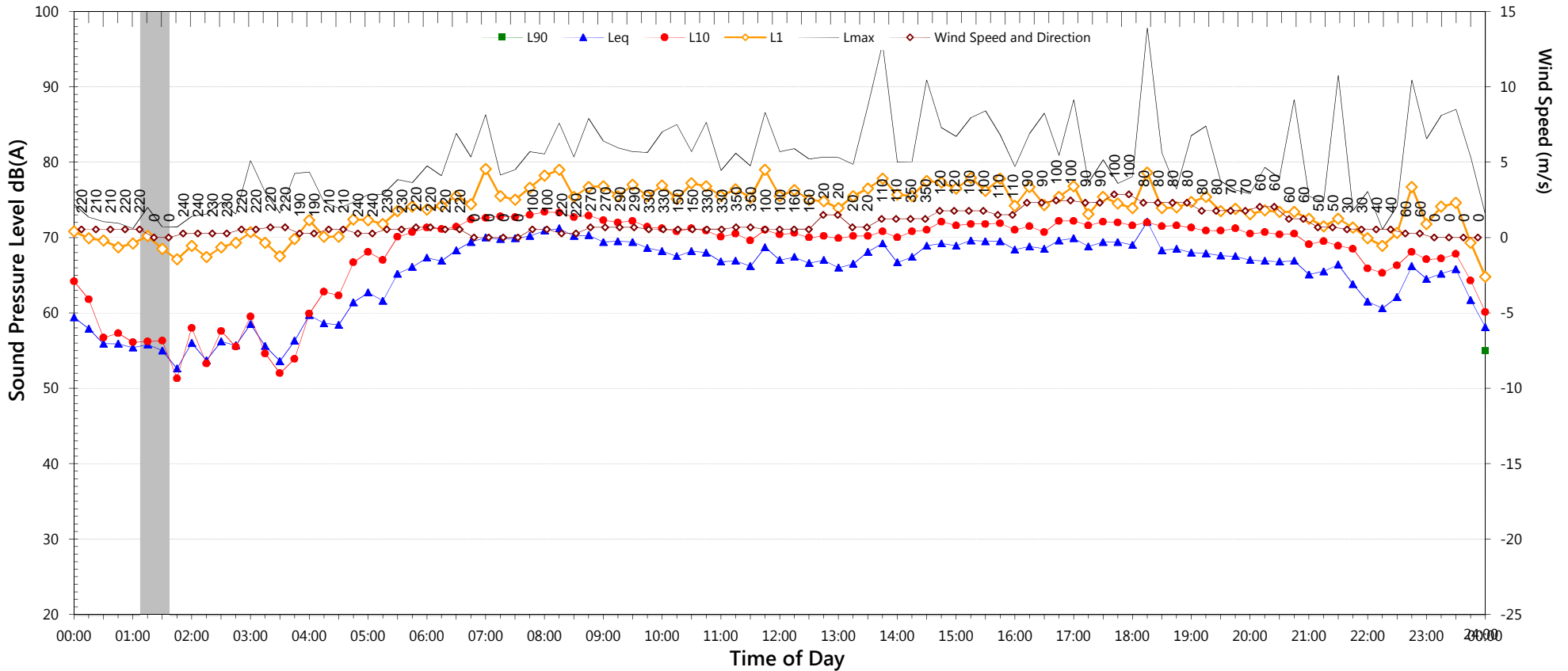
| NSW Road Noise Policy (1m from facade) (see note 3) | | |
|---|----------|--------------------|
| Descriptor | Day | Night ² |
| | 7am-10pm | 10pm-7am |
| L _{eq 15 hr} and L _{eq 9 hr} | 69.8 | 65.6 |
| L _{eq 1hr} upper 10 percentile | 70.9 | 71.3 |
| L _{eq 1hr} lower 10 percentile | 67.3 | 57.1 |

| Night Time Maximum Noise Levels (see note 4) | | | |
|--|------|----|------|
| Lmax (Range) | 72.7 | to | 86.3 |
| Lmax - Leq (Range) | 15.0 | to | 23.8 |

Unattended Noise Monitoring Results

19 Memorial Ave - Front Yard

Monday, 24 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 50.6 | 48.9 | 40.7 |
| Leq | 68.8 | 67.4 | 63.4 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

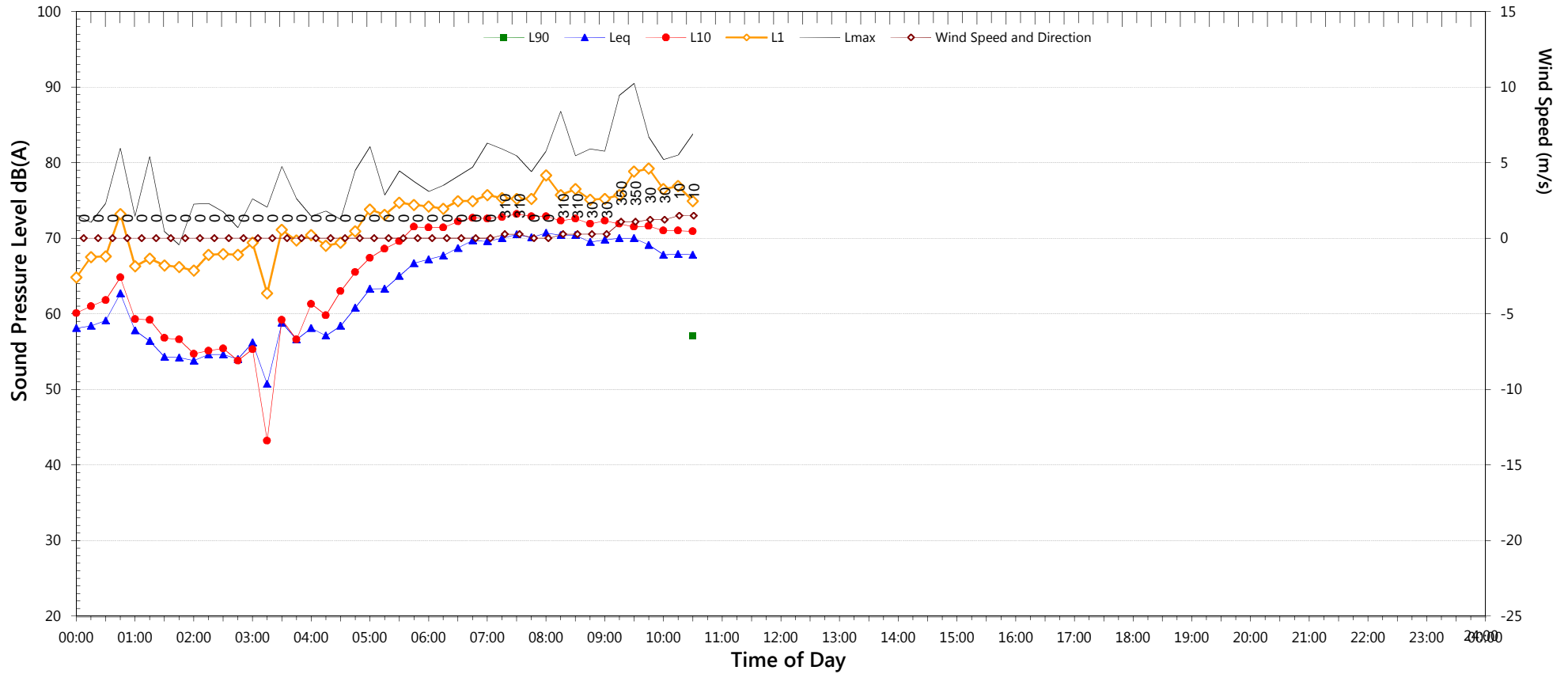
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 71.0 | 65.9 | |
| L _{eq 1hr} upper 10 percentile | 72.8 | 71.5 | |
| L _{eq 1hr} lower 10 percentile | 68.2 | 57.3 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 75.2 | to | 90.9 | |
| Lmax - Leq (Range) | 20.3 | to | 27.0 | |

Unattended Noise Monitoring Results

19 Memorial Ave - Front Yard

Tuesday, 25 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | - | - | - |
| Leq | - | - | - |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

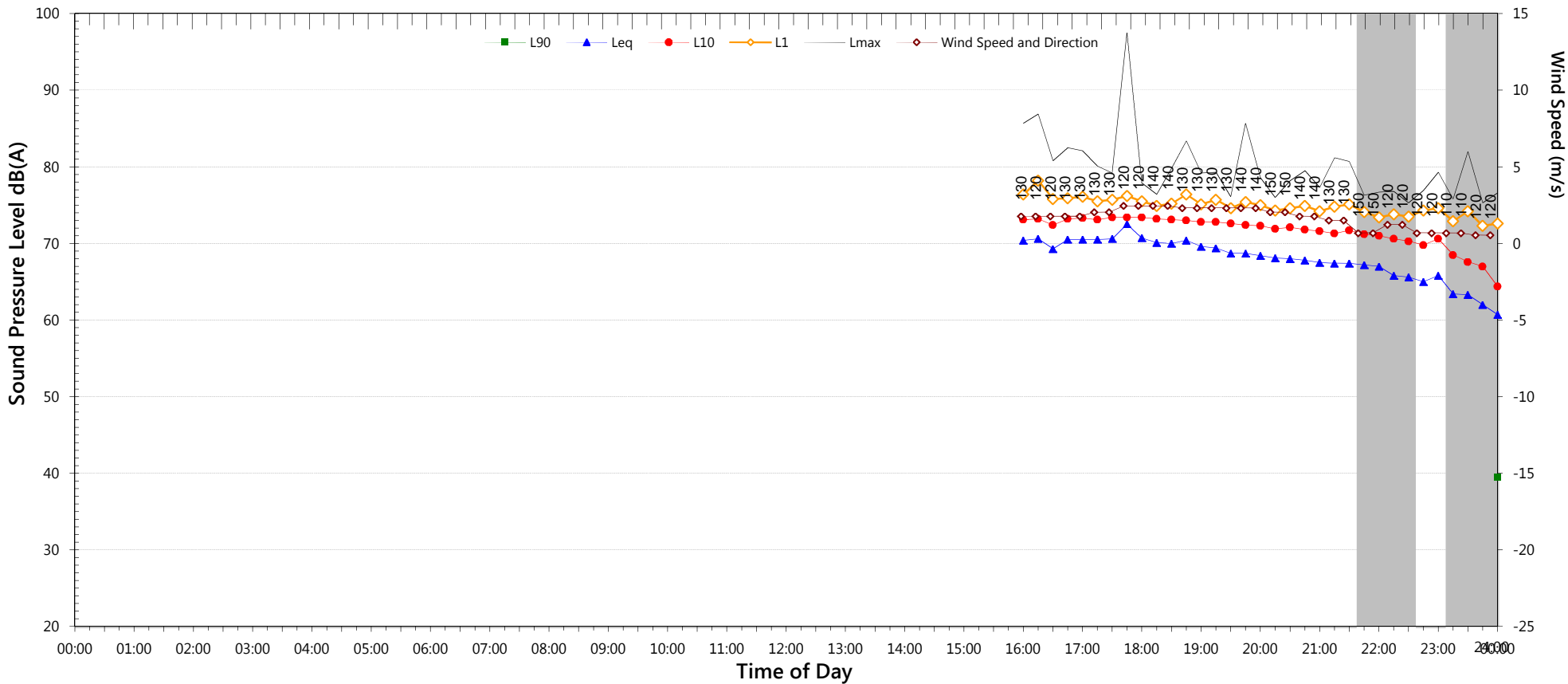
| NSW Road Noise Policy (1m from facade) (see note 3) | | |
|---|----------|--------------------|
| Descriptor | Day | Night ² |
| | 7am-10pm | 10pm-7am |
| L _{eq 15 hr} and L _{eq 9 hr} | 72.2 | - |
| L _{eq 1hr} upper 10 percentile | 72.8 | - |
| L _{eq 1hr} lower 10 percentile | 70.4 | - |

| Night Time Maximum Noise Levels (see note 4) | | | |
|--|---|----|---|
| Lmax (Range) | - | to | - |
| Lmax - Leq (Range) | - | to | - |

Unattended Noise Monitoring Results

25 Memorial Ave - Front yard

Tuesday, 11 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | - | 52.1 | - |
| Leq | - | 68.8 | - |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

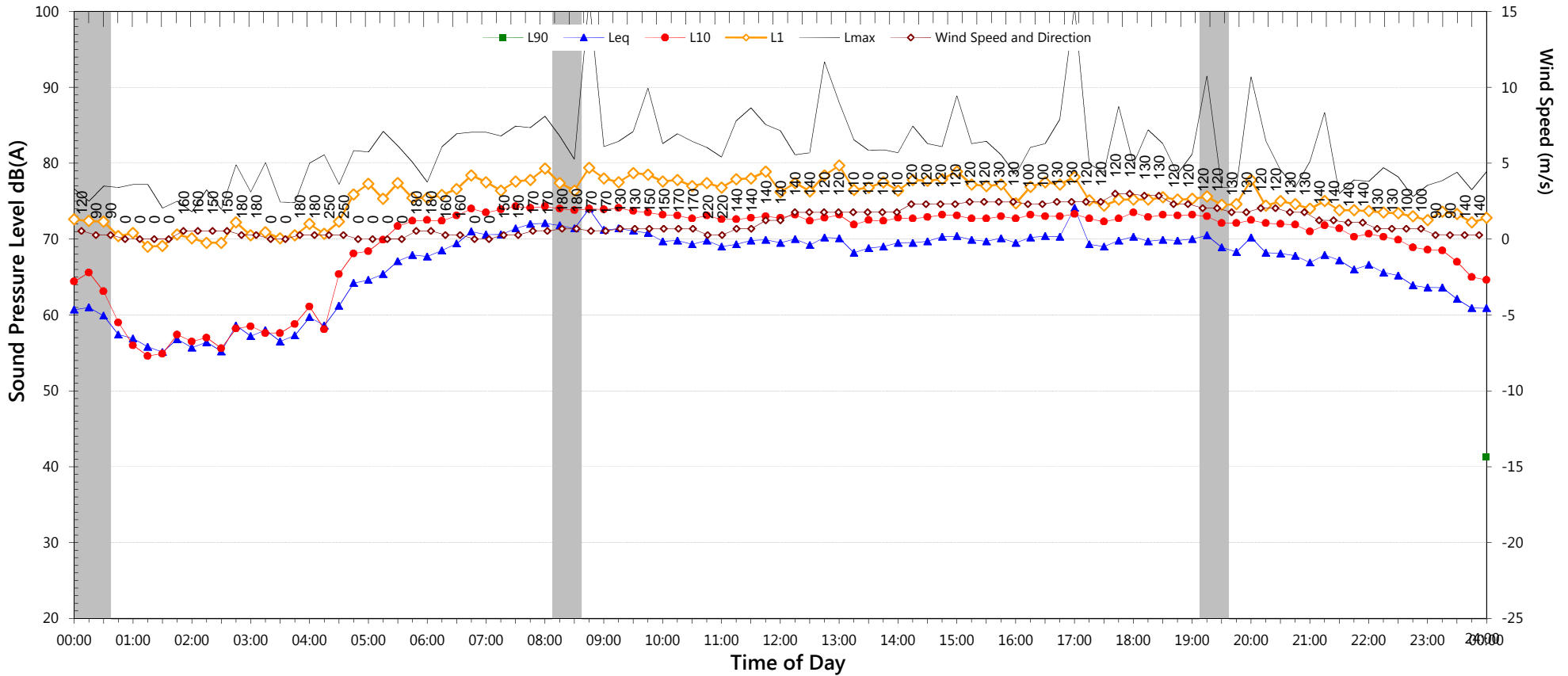
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 72.1 | 67.2 | |
| L _{eq 1hr} upper 10 percentile | 73.7 | 72.5 | |
| L _{eq 1hr} lower 10 percentile | 69.9 | 58.4 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 77.2 | to | 84.2 | |
| Lmax - Leq (Range) | 17.1 | to | 22.8 | |

Unattended Noise Monitoring Results

25 Memorial Ave - Front yard

Wednesday, 12 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 56.3 | 49.8 | 40.4 |
| Leq | 70.4 | 68.5 | 64.2 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

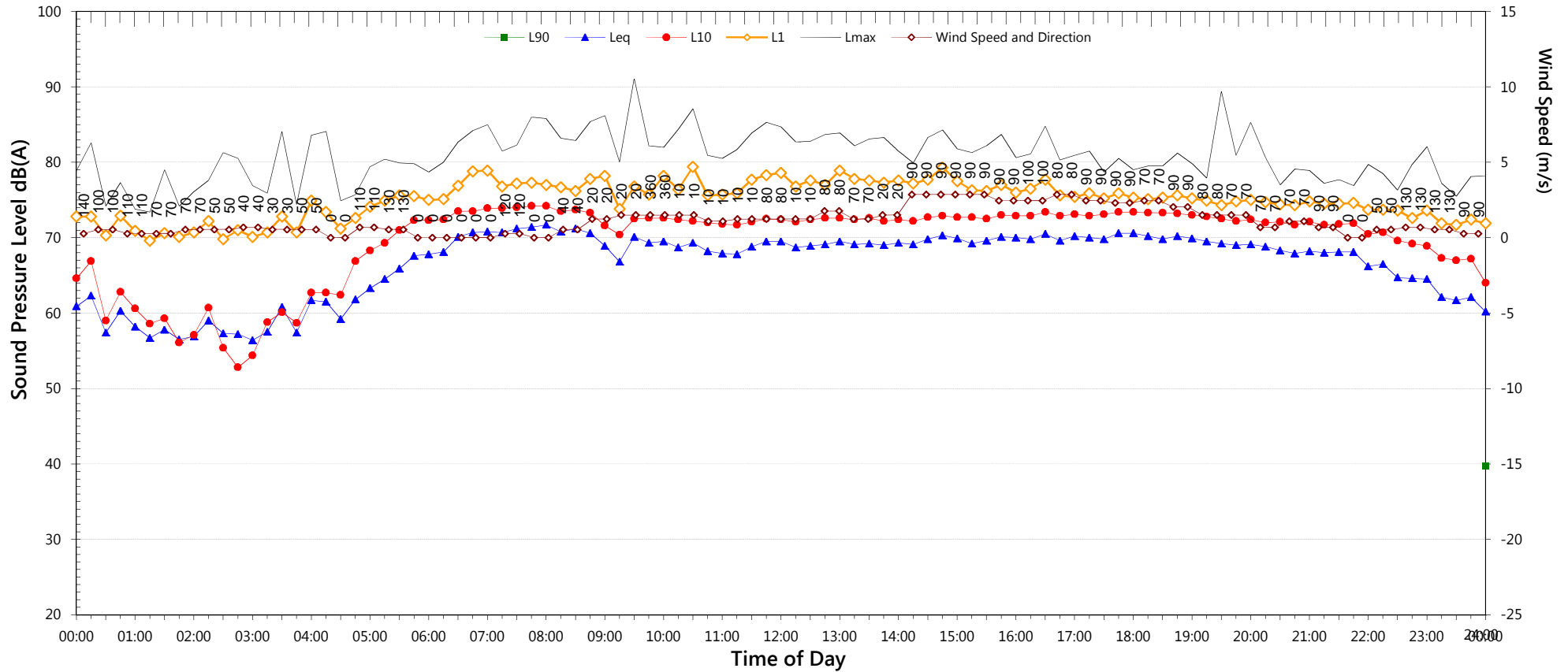
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 72.5 | 66.7 | |
| L _{eq 1hr} upper 10 percentile | 74.8 | 72.5 | |
| L _{eq 1hr} lower 10 percentile | 69.9 | 59.5 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 78.9 | to | 84.1 | |
| Lmax - Leq (Range) | 16.9 | to | 24.3 | |

Unattended Noise Monitoring Results

25 Memorial Ave - Front yard

Thursday, 13 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 54.4 | 53.3 | - |
| Leq | 69.7 | 68.9 | - |

NOTES:

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

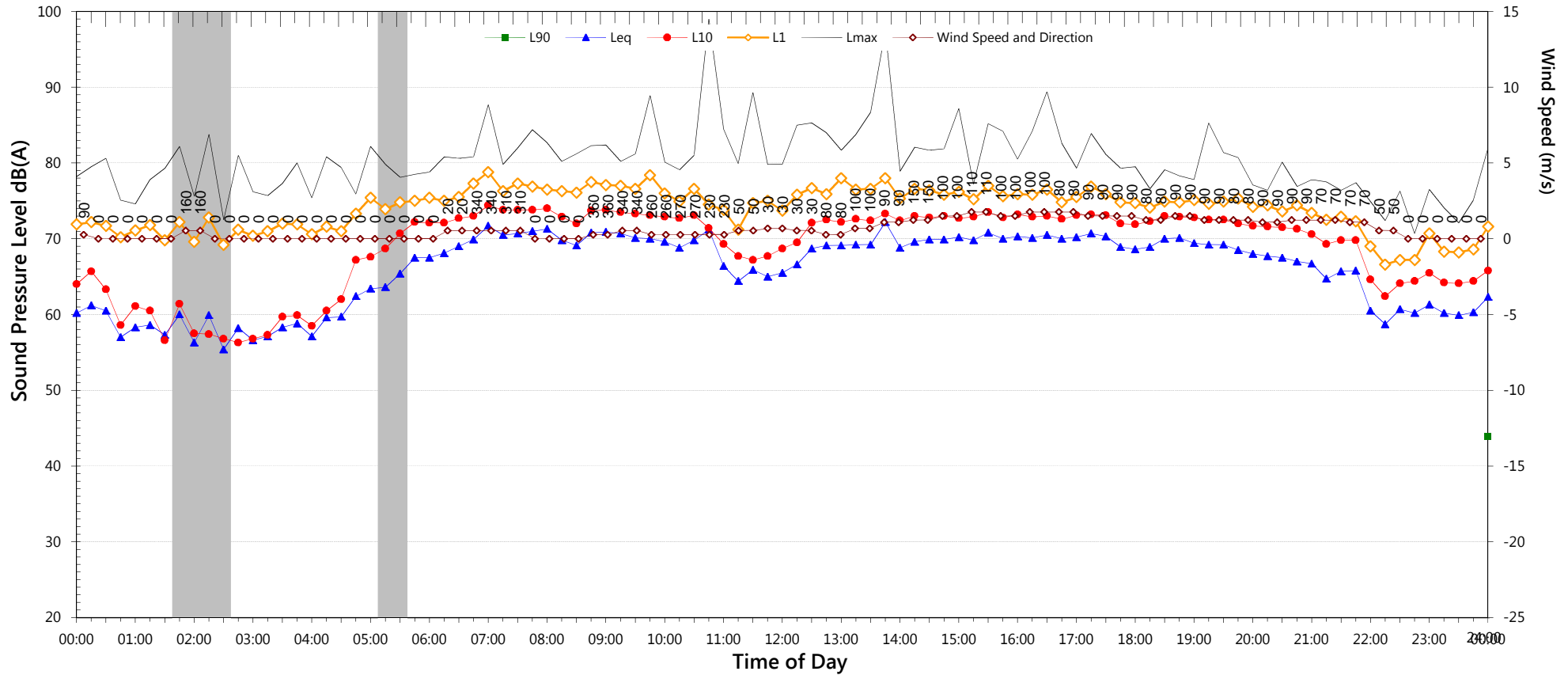
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 72.0 | 66.9 | |
| L _{eq 1hr} upper 10 percentile | 73.4 | 72.4 | |
| L _{eq 1hr} lower 10 percentile | 70.5 | 60.0 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| L _{max} (Range) | 78.2 | to | 87.7 | |
| L _{max} - Leq (Range) | 16.6 | to | 23.5 | |

Unattended Noise Monitoring Results

25 Memorial Ave - Front yard

Friday, 14 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 53.8 | 49.0 | - |
| Leq | 69.7 | 67.9 | - |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

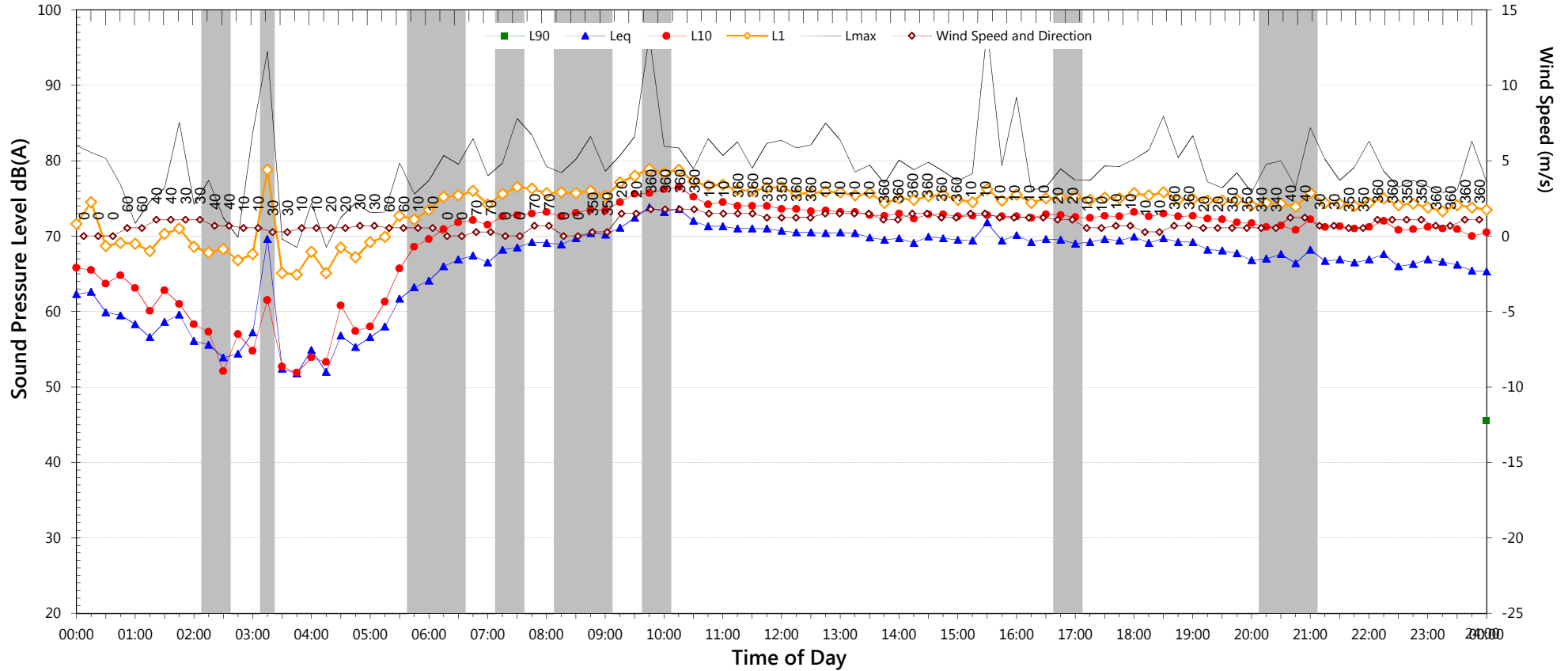
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 71.8 | 62.8 | |
| L _{eq 1hr} upper 10 percentile | 73.1 | 69.5 | |
| L _{eq 1hr} lower 10 percentile | 67.4 | 55.8 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 74.4 | to | 85.1 | |
| Lmax - Leq (Range) | 15.9 | to | 27.7 | |

Unattended Noise Monitoring Results

25 Memorial Ave - Front yard

Saturday, 15 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | - | - | - |
| Leq | - | - | - |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

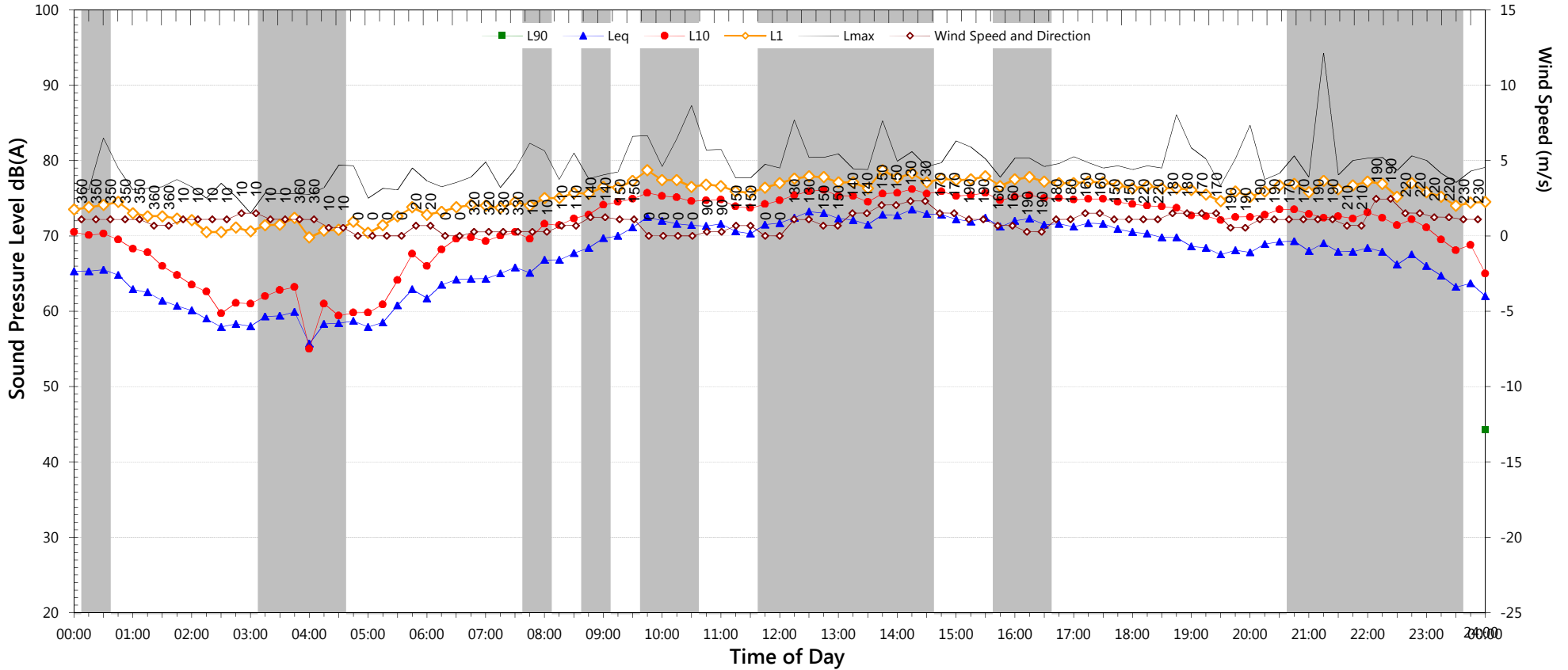
| NSW Road Noise Policy (1m from facade) (see note 3) | | |
|---|----------|--------------------|
| Descriptor | Day | Night ² |
| | 7am-10pm | 10pm-7am |
| L _{eq 15 hr} and L _{eq 9 hr} | 72.4 | 66.3 |
| L _{eq 1hr} upper 10 percentile | 74.6 | 69.2 |
| L _{eq 1hr} lower 10 percentile | 69.6 | 60.8 |

| Night Time Maximum Noise Levels (see note 4) | | | |
|--|------|----|------|
| Lmax (Range) | 77.0 | to | 82.6 |
| Lmax - Leq (Range) | 15.0 | to | 21.0 |

Unattended Noise Monitoring Results

25 Memorial Ave - Front yard

Sunday, 16 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | - | - | - |
| Leq | - | - | - |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

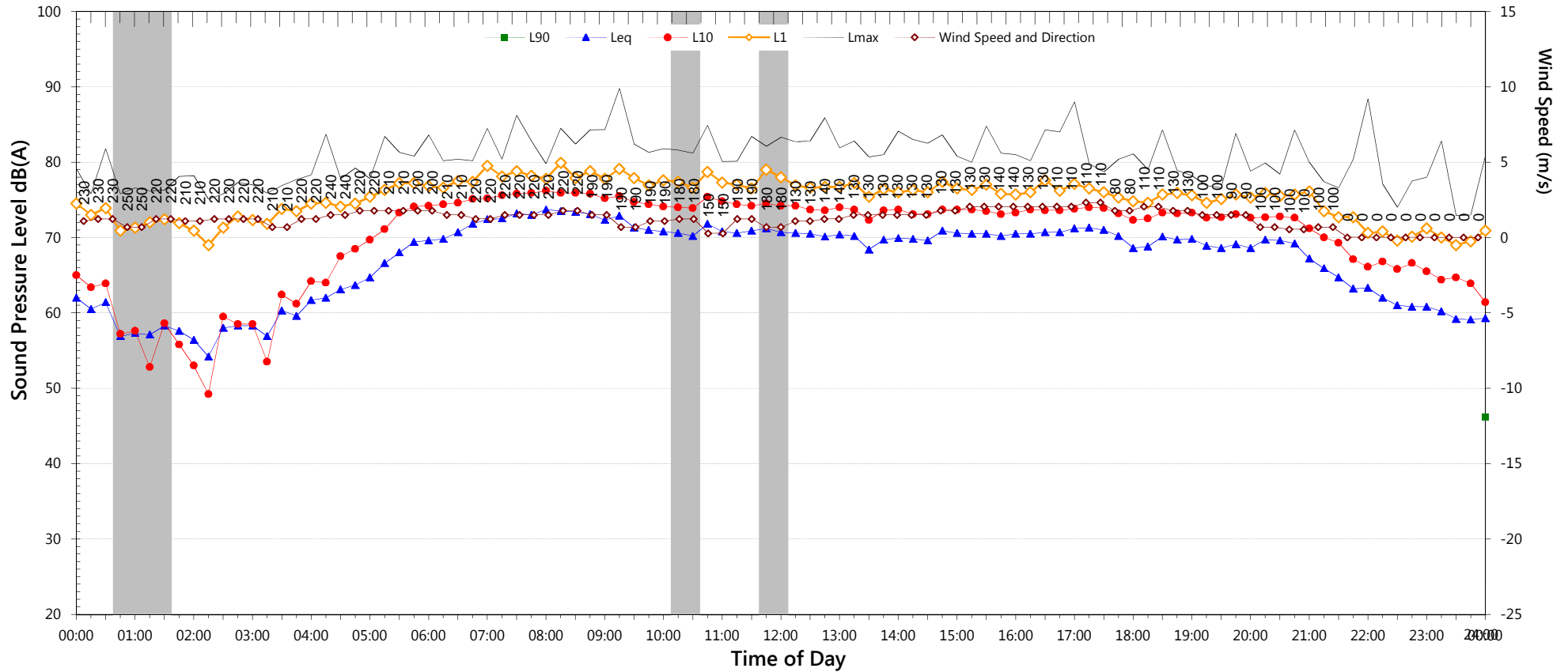
| NSW Road Noise Policy (1m from facade) (see note 3) | | |
|---|----------|--------------------|
| Descriptor | Day | Night ² |
| | 7am-10pm | 10pm-7am |
| L _{eq} 15 hr and L _{eq} 9 hr | 72.7 | 68.6 |
| L _{eq} 1hr upper 10 percentile | 74.9 | 73.8 |
| L _{eq} 1hr lower 10 percentile | 68.4 | 59.5 |

| Night Time Maximum Noise Levels (see note 4) | | | |
|--|------|----|------|
| Lmax (Range) | 77.3 | to | 83.7 |
| Lmax - Leq (Range) | 15.0 | to | 21.2 |

Unattended Noise Monitoring Results

25 Memorial Ave - Front yard

Monday, 17 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 54.7 | 46.0 | 42.6 |
| Leq | 71.2 | 68.4 | 63.3 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

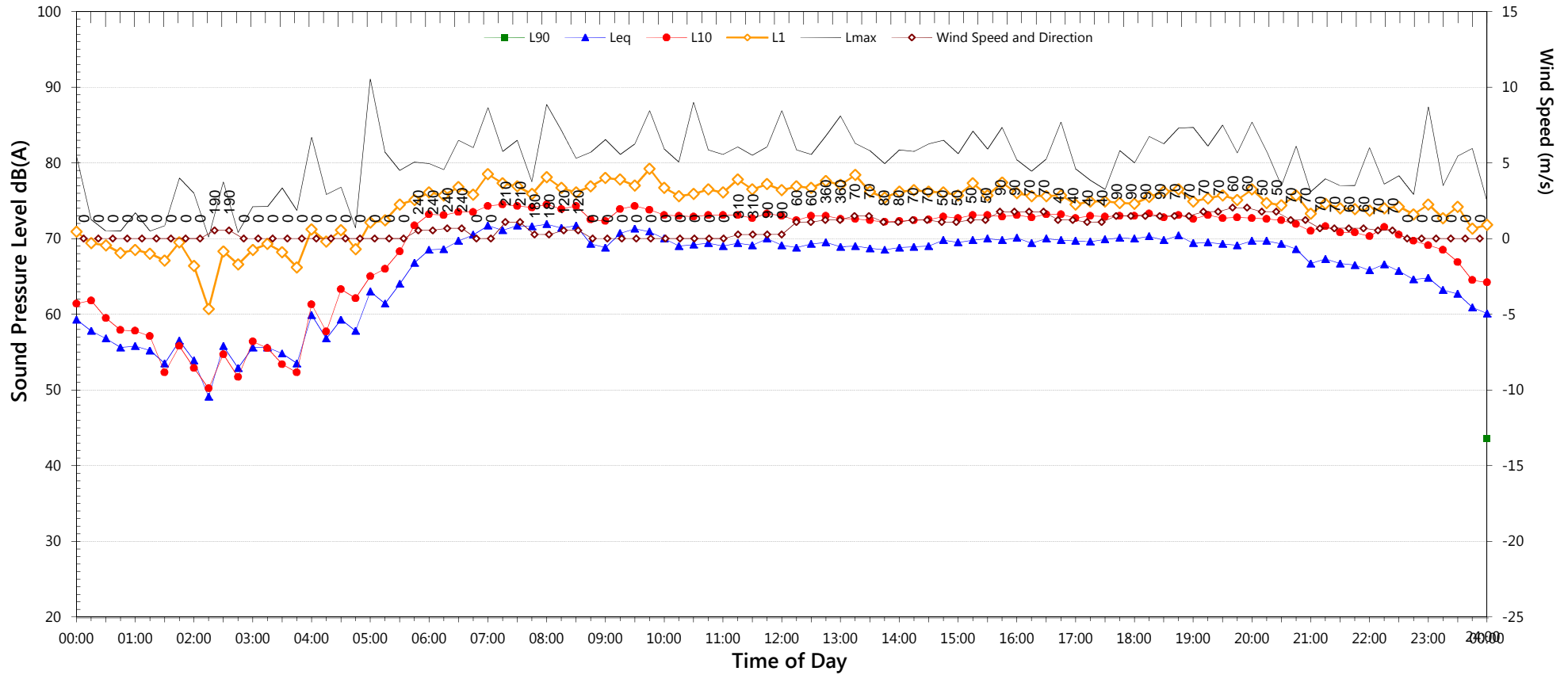
| NSW Road Noise Policy (1m from facade) (see note 3) | | |
|---|----------|--------------------|
| Descriptor | Day | Night ² |
| | 7am-10pm | 10pm-7am |
| L _{eq 15 hr} and L _{eq 9 hr} | 73.1 | 65.8 |
| L _{eq 1hr} upper 10 percentile | 75.6 | 72.8 |
| L _{eq 1hr} lower 10 percentile | 69.6 | 56.6 |

| Night Time Maximum Noise Levels (see note 4) | | | |
|--|------|----|------|
| Lmax (Range) | 73.4 | to | 91.1 |
| Lmax - Leq (Range) | 15.4 | to | 31.2 |

Unattended Noise Monitoring Results

25 Memorial Ave - Front yard

Tuesday, 18 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 52.8 | 48.0 | 41.7 |
| Leq | 69.9 | 68.9 | 64.5 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

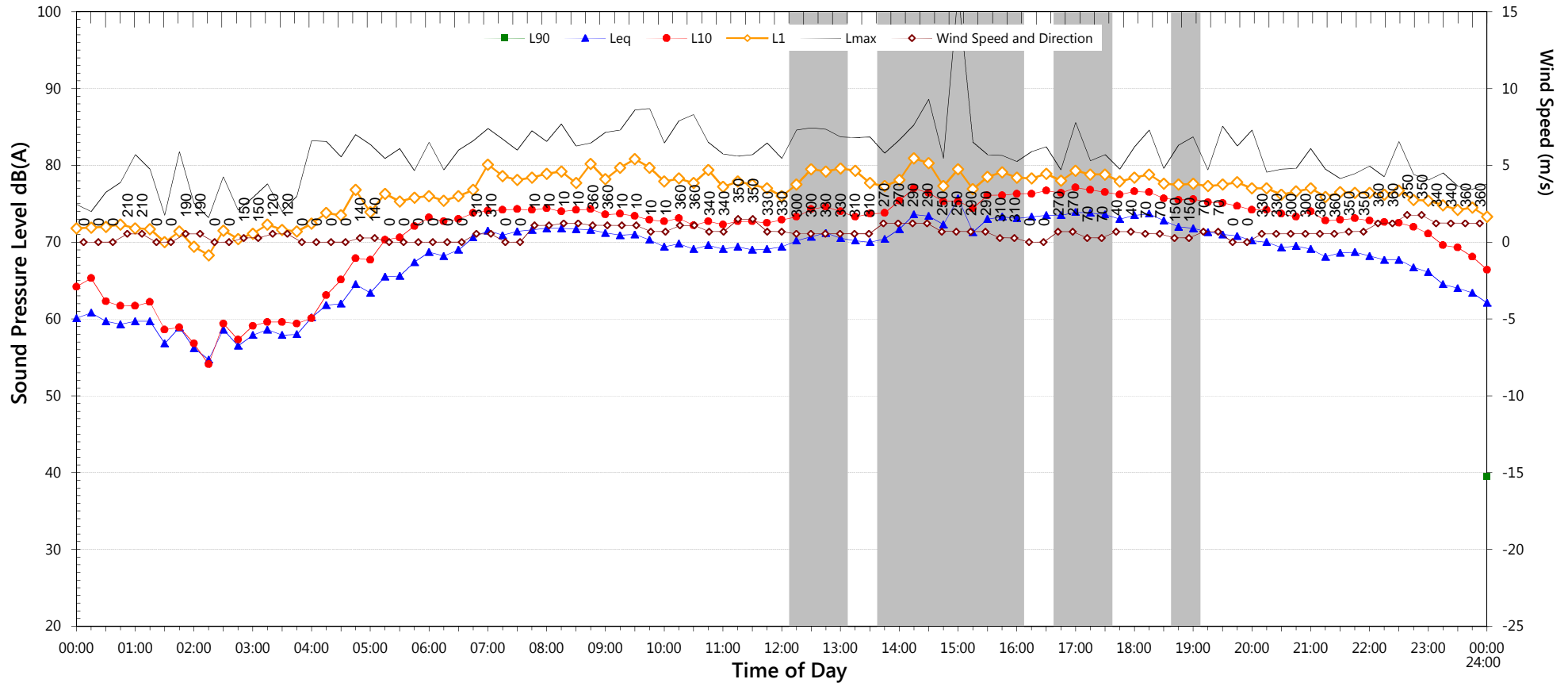
| NSW Road Noise Policy (1m from facade) (see note 3) | | |
|---|----------|--------------------|
| Descriptor | Day | Night ² |
| | 7am-10pm | 10pm-7am |
| L _{eq 15 hr} and L _{eq 9 hr} | 72.2 | 67.0 |
| L _{eq 1hr} upper 10 percentile | 73.7 | 72.5 |
| L _{eq 1hr} lower 10 percentile | 70.3 | 59.7 |

| Night Time Maximum Noise Levels (see note 4) | | | |
|--|------|----|------|
| Lmax (Range) | 78.5 | to | 87.4 |
| Lmax - Leq (Range) | 16.0 | to | 24.4 |

Unattended Noise Monitoring Results

25 Memorial Ave - Front yard

Wednesday, 19 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | - | 47.2 | 35.5 |
| Leq | - | 70.4 | 66.6 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

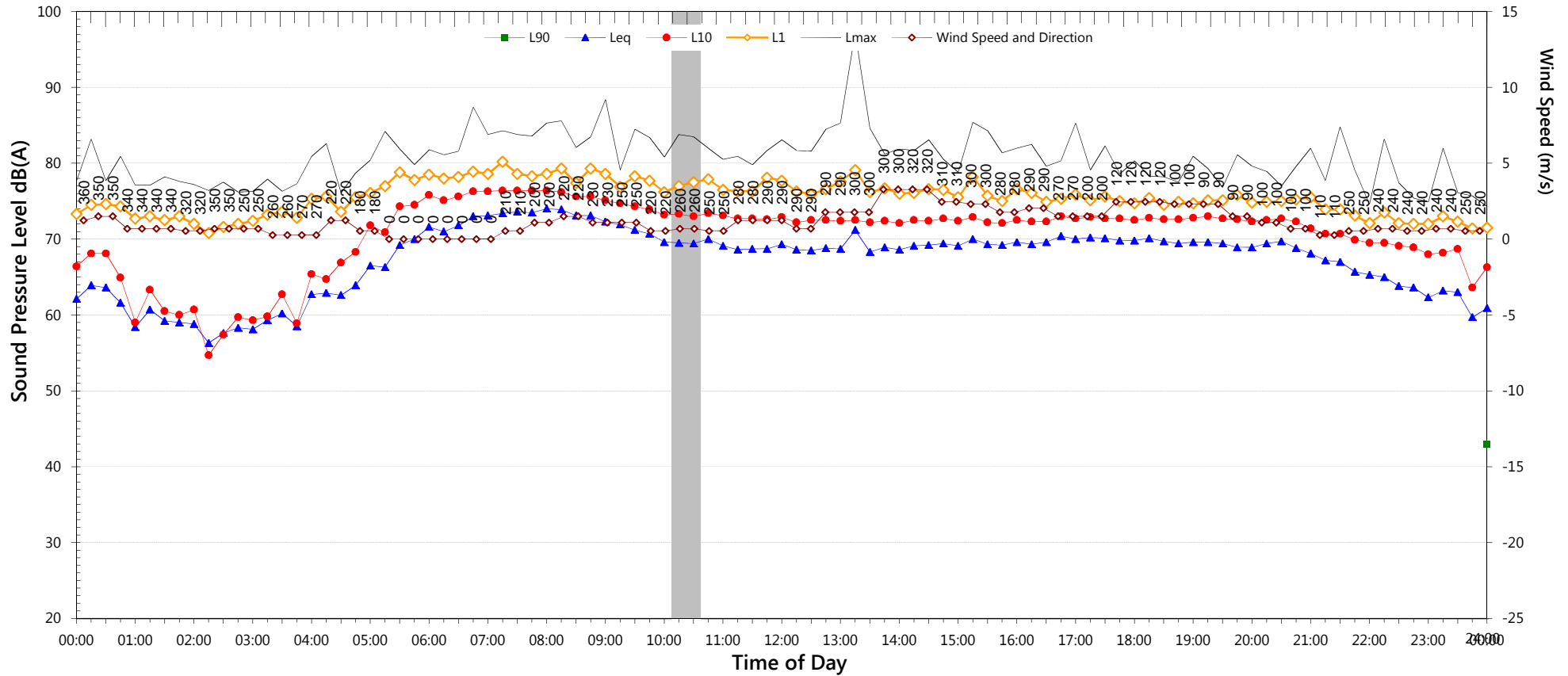
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq} 15 hr and L _{eq} 9 hr | 73.4 | 69.1 | |
| L _{eq} 1hr upper 10 percentile | 75.9 | 74.8 | |
| L _{eq} 1hr lower 10 percentile | 71.1 | 60.1 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 77.5 | to | 87.4 | |
| Lmax - Leq (Range) | 15.1 | to | 20.8 | |

Unattended Noise Monitoring Results

25 Memorial Ave - Front yard

Thursday, 20 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 52.8 | 45.6 | 42.5 |
| Leq | 70.6 | 68.8 | 64.3 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

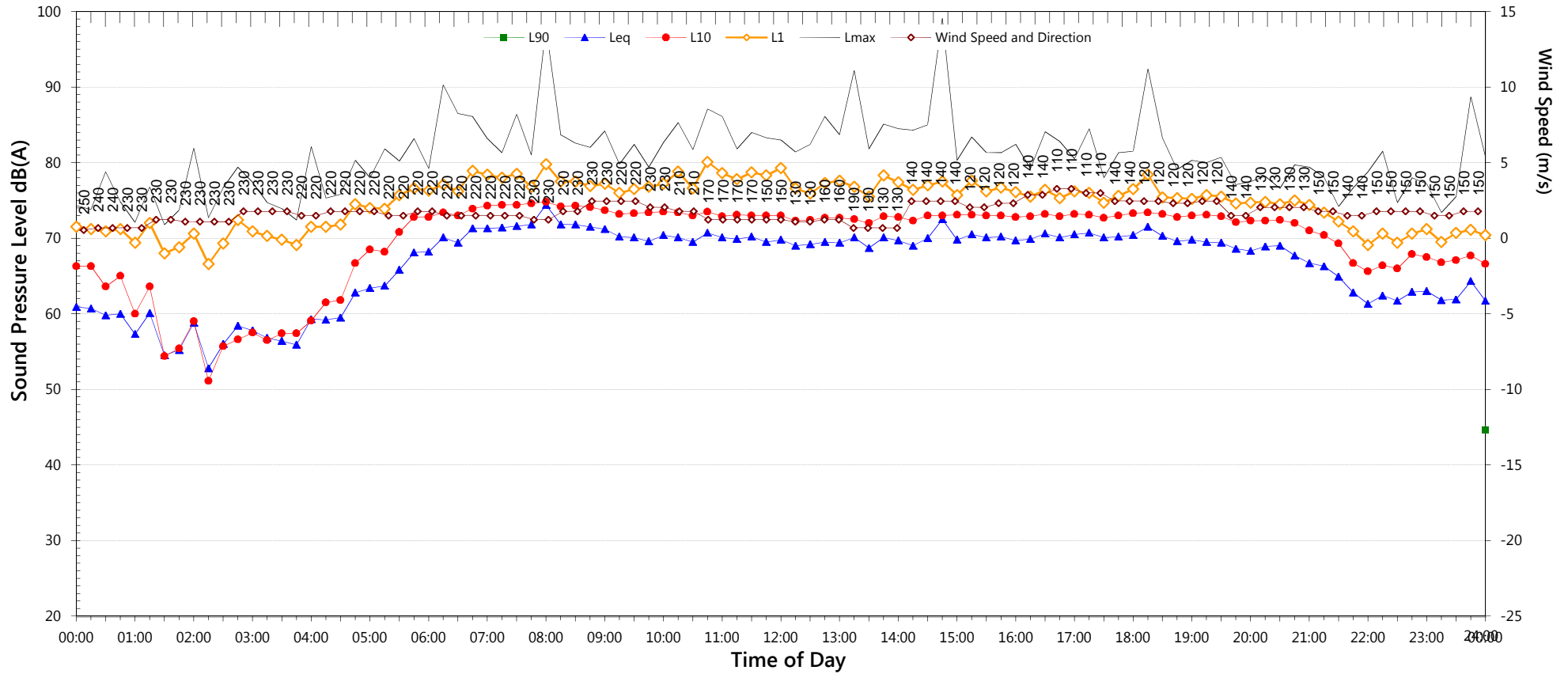
| NSW Road Noise Policy (1m from facade) (see note 3) | | |
|---|----------|--------------------|
| Descriptor | Day | Night ² |
| | 7am-10pm | 10pm-7am |
| L _{eq 15 hr} and L _{eq 9 hr} | 72.7 | 66.8 |
| L _{eq 1hr} upper 10 percentile | 75.9 | 73.1 |
| L _{eq 1hr} lower 10 percentile | 70.2 | 59.2 |

| Night Time Maximum Noise Levels (see note 4) | | | |
|--|------|----|------|
| Lmax (Range) | 78.8 | to | 90.3 |
| Lmax - Leq (Range) | 16.4 | to | 24.8 |

Unattended Noise Monitoring Results

25 Memorial Ave - Front yard

Friday, 21 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 55.9 | 48.6 | 41.9 |
| Leq | 70.5 | 68.5 | 62.0 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

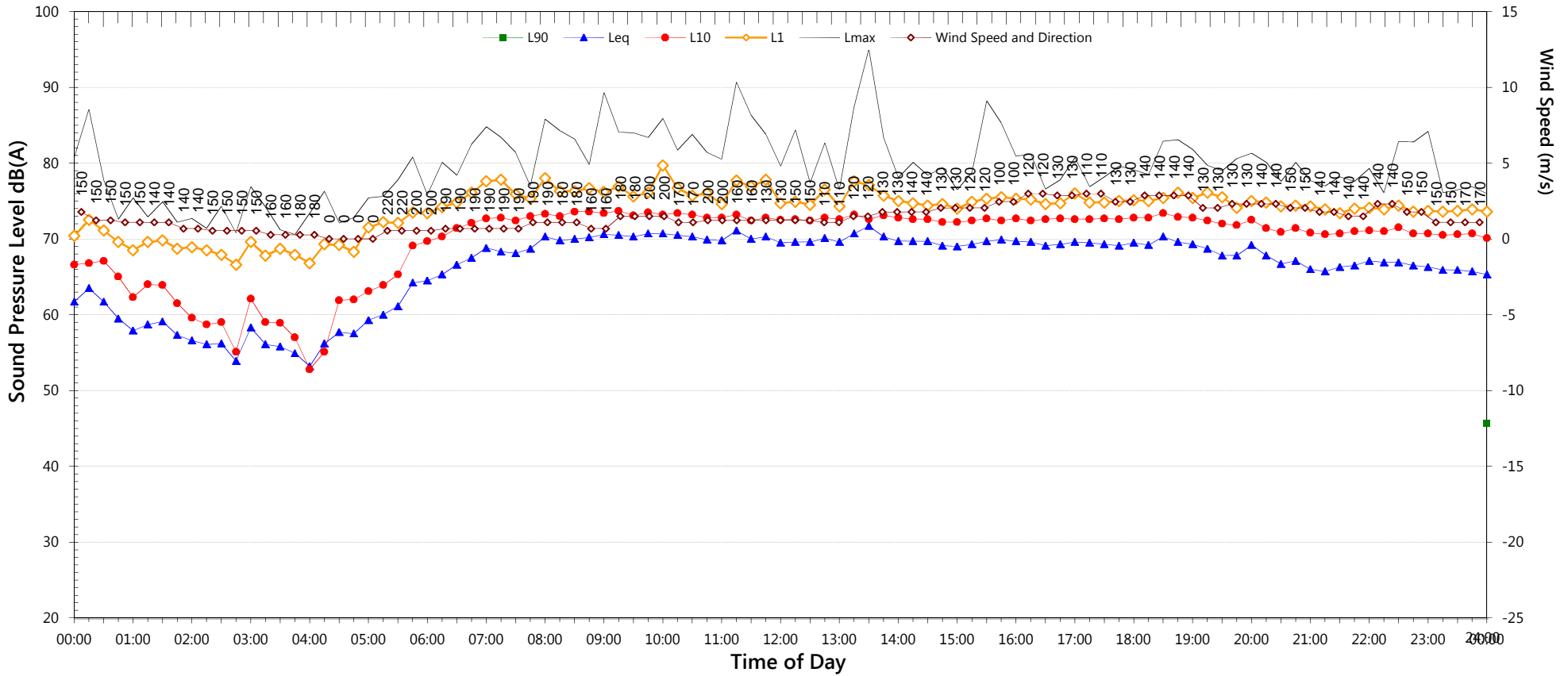
| NSW Road Noise Policy (1m from facade) (see note 3) | | |
|---|----------|--------------------|
| Descriptor | Day | Night ² |
| | 7am-10pm | 10pm-7am |
| L _{eq 15 hr} and L _{eq 9 hr} | 72.5 | 64.5 |
| L _{eq 1hr} upper 10 percentile | 74.6 | 69.7 |
| L _{eq 1hr} lower 10 percentile | 69.1 | 57.6 |

| Night Time Maximum Noise Levels (see note 4) | | | |
|--|------|----|------|
| Lmax (Range) | 74.2 | to | 88.7 |
| Lmax - Leq (Range) | 16.9 | to | 26.1 |

Unattended Noise Monitoring Results

25 Memorial Ave - Front yard

Saturday, 22 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 55.0 | 48.1 | 39.1 |
| Leq | 69.9 | 68.0 | 63.5 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

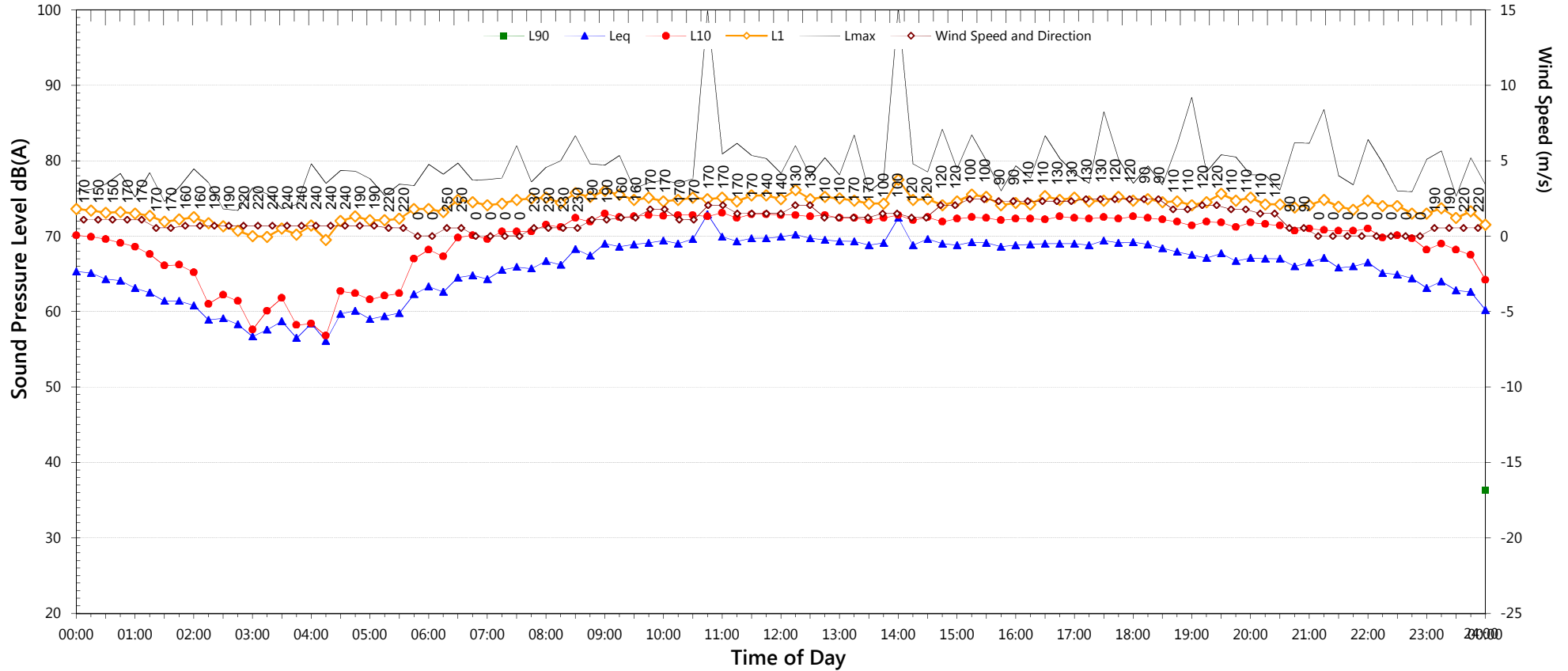
| NSW Road Noise Policy (1m from facade) (see note 3) | | |
|---|----------|--------------------|
| Descriptor | Day | Night ² |
| | 7am-10pm | 10pm-7am |
| L _{eq 15 hr} and L _{eq 9 hr} | 72.0 | 66.0 |
| L _{eq 1hr} upper 10 percentile | 73.1 | 69.2 |
| L _{eq 1hr} lower 10 percentile | 69.2 | 60.4 |

| Night Time Maximum Noise Levels (see note 4) | | | |
|--|------|----|------|
| Lmax (Range) | 77.1 | to | 84.2 |
| Lmax - Leq (Range) | 15.6 | to | 21.7 |

Unattended Noise Monitoring Results

25 Memorial Ave - Front yard

Sunday, 23 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 51.0 | 46.8 | 36.4 |
| Leq | 69.4 | 67.2 | 64.4 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

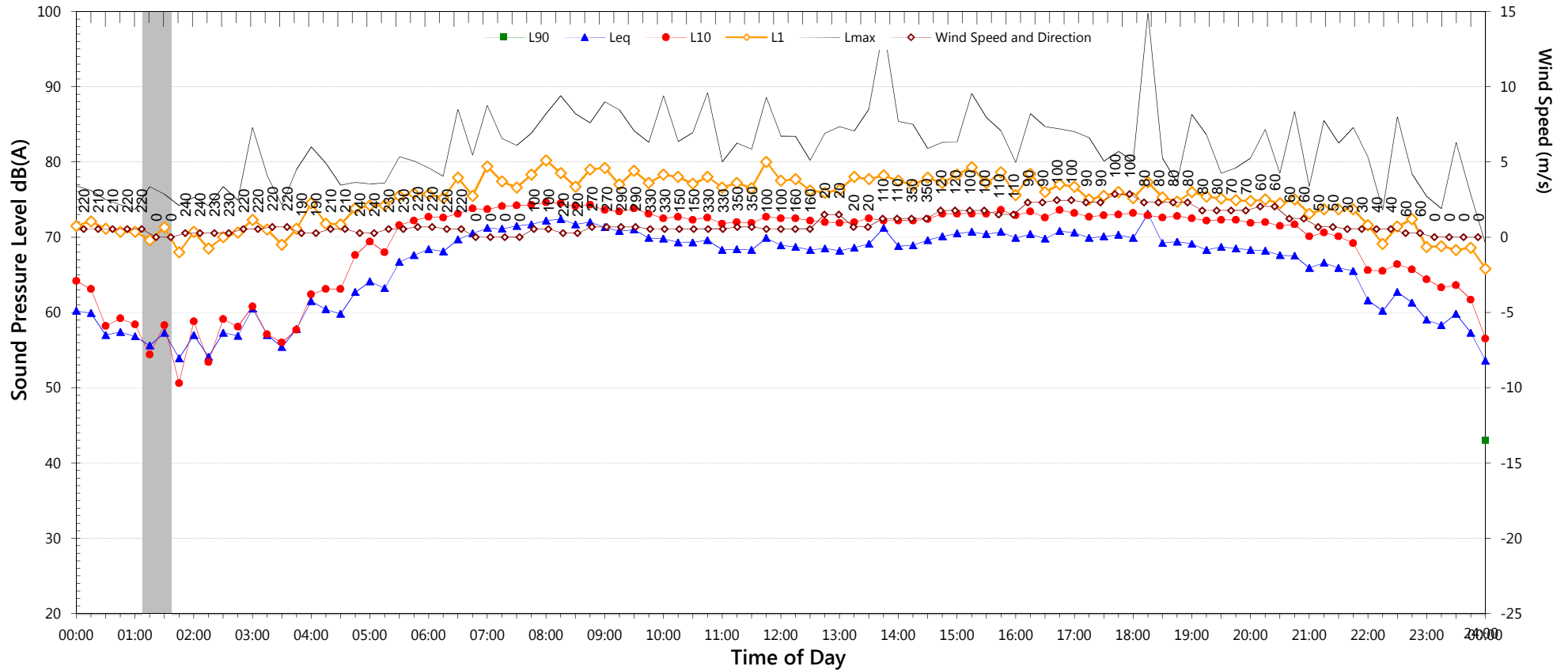
| NSW Road Noise Policy (1m from facade) (see note 3) | | |
|---|----------|--------------------|
| Descriptor | Day | Night ² |
| | 7am-10pm | 10pm-7am |
| L _{eq 15 hr} and L _{eq 9 hr} | 71.2 | 66.9 |
| L _{eq 1hr} upper 10 percentile | 72.9 | 72.5 |
| L _{eq 1hr} lower 10 percentile | 68.7 | 58.2 |

| Night Time Maximum Noise Levels (see note 4) | | | |
|--|------|----|------|
| Lmax (Range) | 75.3 | to | 87.5 |
| Lmax - Leq (Range) | 15.8 | to | 26.8 |

Unattended Noise Monitoring Results

25 Memorial Ave - Front yard

Monday, 24 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 53.5 | 50.3 | 41.5 |
| Leq | 70.2 | 68.3 | 63.6 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

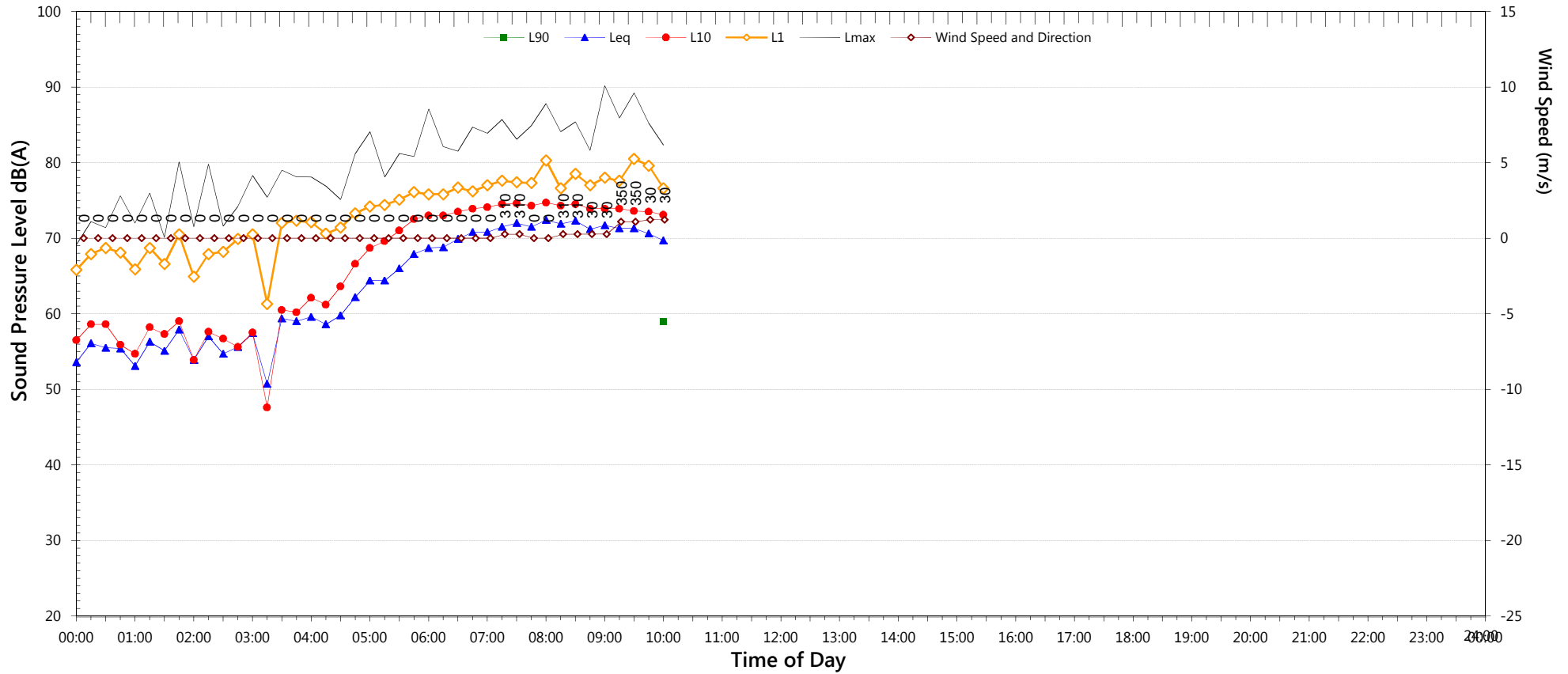
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 72.3 | 66.1 | |
| L _{eq 1hr} upper 10 percentile | 74.3 | 72.6 | |
| L _{eq 1hr} lower 10 percentile | 69.0 | 57.7 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 75.6 | to | 87.1 | |
| Lmax - Leq (Range) | 20.0 | to | 25.0 | |

Unattended Noise Monitoring Results

25 Memorial Ave - Front yard

Tuesday, 25 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | - | - | - |
| Leq | - | - | - |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

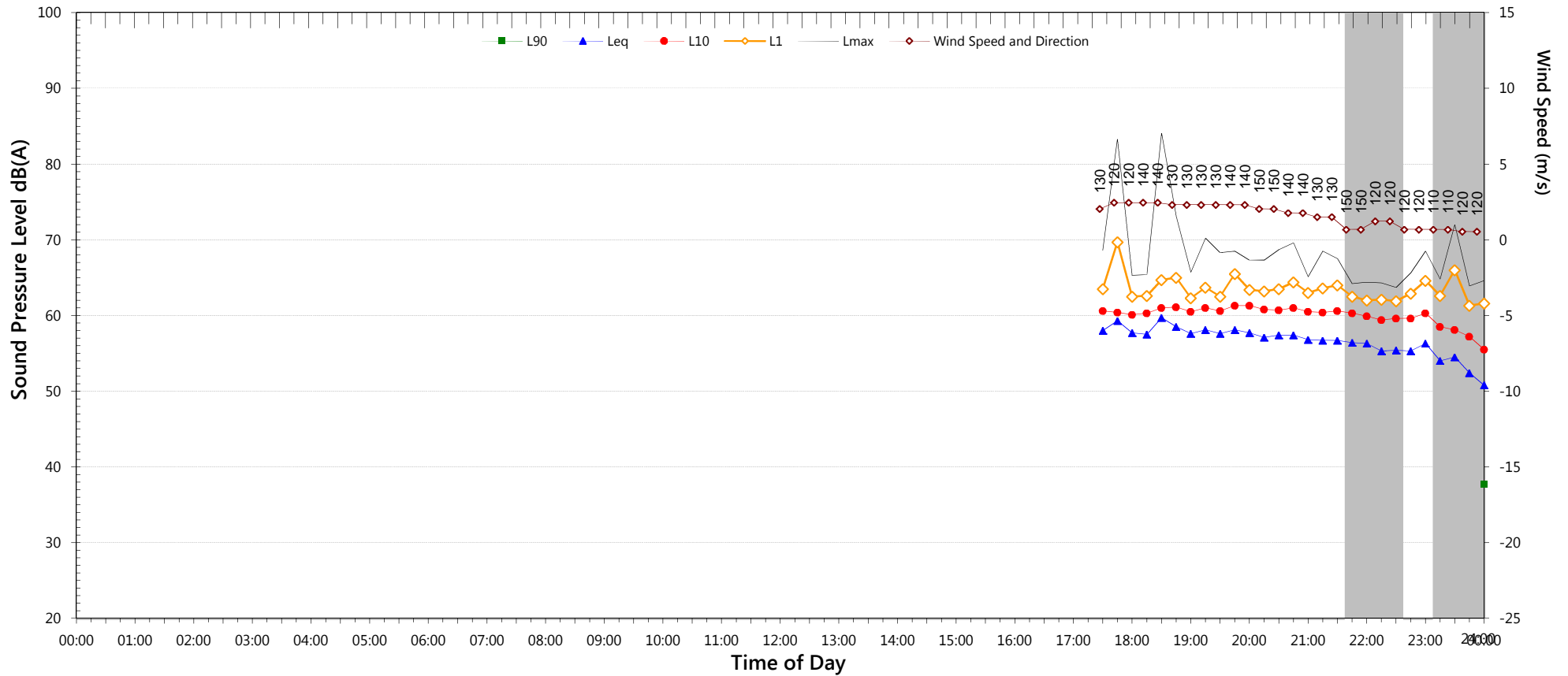
| NSW Road Noise Policy (1m from facade) (see note 3) | | |
|---|----------|--------------------|
| Descriptor | Day | Night ² |
| | 7am-10pm | 10pm-7am |
| L _{eq 15 hr} and L _{eq 9 hr} | 74.0 | - |
| L _{eq 1hr} upper 10 percentile | 74.4 | - |
| L _{eq 1hr} lower 10 percentile | 73.3 | - |

| Night Time Maximum Noise Levels (see note 4) | | | |
|--|---|----|---|
| Lmax (Range) | - | to | - |
| Lmax - Leq (Range) | - | to | - |

Unattended Noise Monitoring Results

32 Memorial Ave - Front Yard

Tuesday, 11 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | - | 46.2 | - |
| Leq | - | 57.7 | - |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

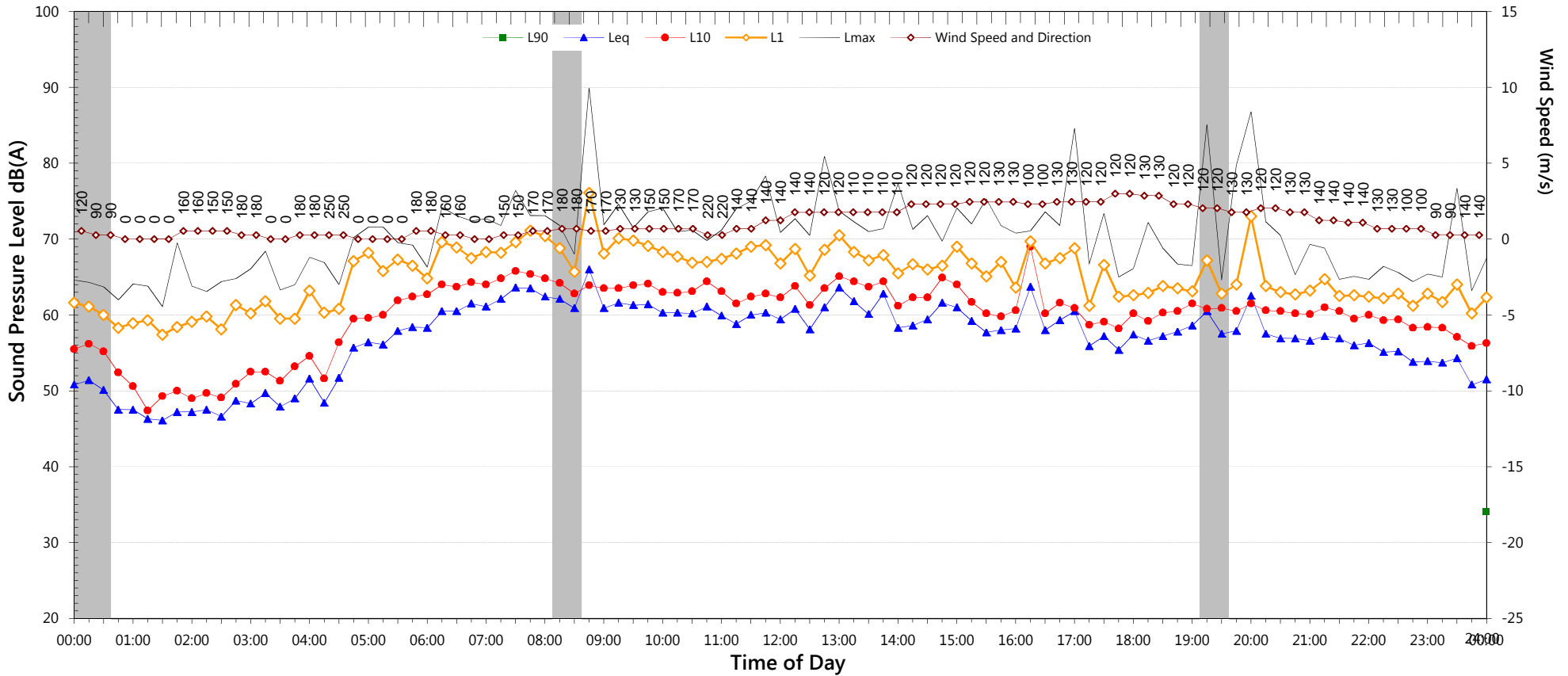
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 60.3 | 58.1 | |
| L _{eq 1hr} upper 10 percentile | 60.9 | 63.4 | |
| L _{eq 1hr} lower 10 percentile | 59.2 | 49.2 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 66.1 | to | 71.6 | |
| Lmax - Leq (Range) | 16.6 | to | 22.8 | |

Unattended Noise Monitoring Results

32 Memorial Ave - Front Yard

Wednesday, 12 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 49.0 | 45.6 | 33.9 |
| Leq | 60.8 | 57.9 | 55.7 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

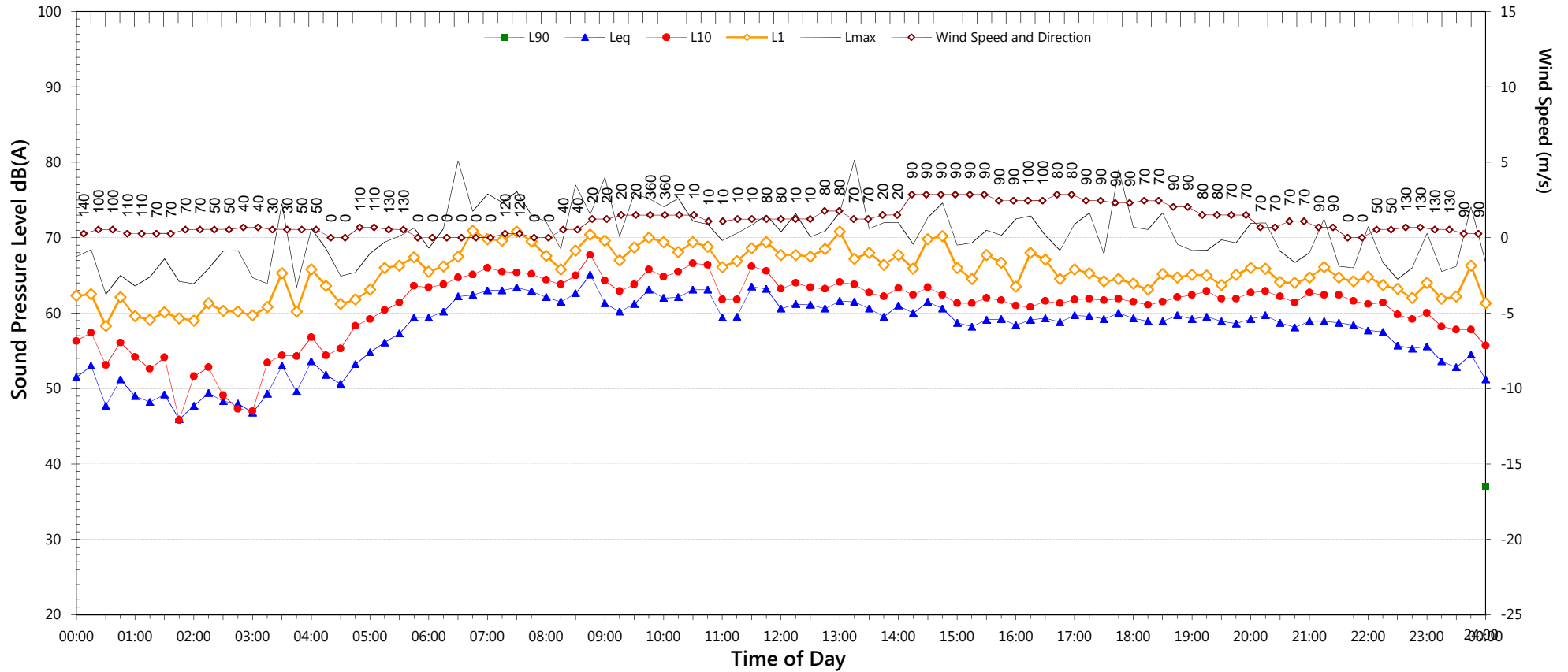
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 62.7 | 58.2 | |
| L _{eq 1hr} upper 10 percentile | 66.1 | 64.6 | |
| L _{eq 1hr} lower 10 percentile | 59.1 | 50.4 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 67.2 | to | 80.2 | |
| Lmax - Leq (Range) | 15.6 | to | 23.9 | |

Unattended Noise Monitoring Results

32 Memorial Ave - Front Yard

Thursday, 13 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 52.1 | 46.9 | - |
| Leq | 61.2 | 58.9 | - |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

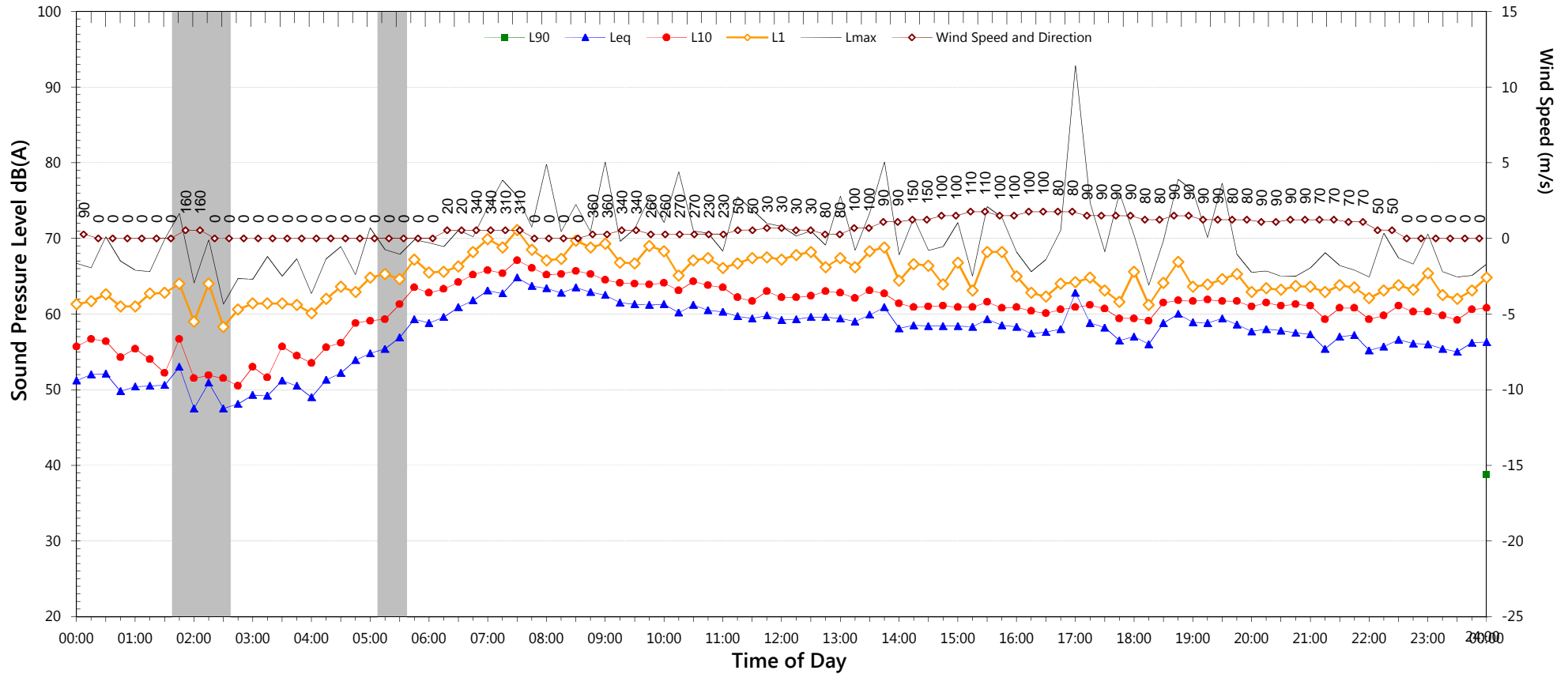
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 63.2 | 58.5 | |
| L _{eq 1hr} upper 10 percentile | 65.4 | 64.0 | |
| L _{eq 1hr} lower 10 percentile | 61.1 | 51.2 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 67.6 | to | 74.1 | |
| Lmax - Leq (Range) | 16.0 | to | 20.9 | |

Unattended Noise Monitoring Results

32 Memorial Ave - Front Yard

Friday, 14 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 49.0 | 43.5 | - |
| Leq | 60.5 | 57.9 | - |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

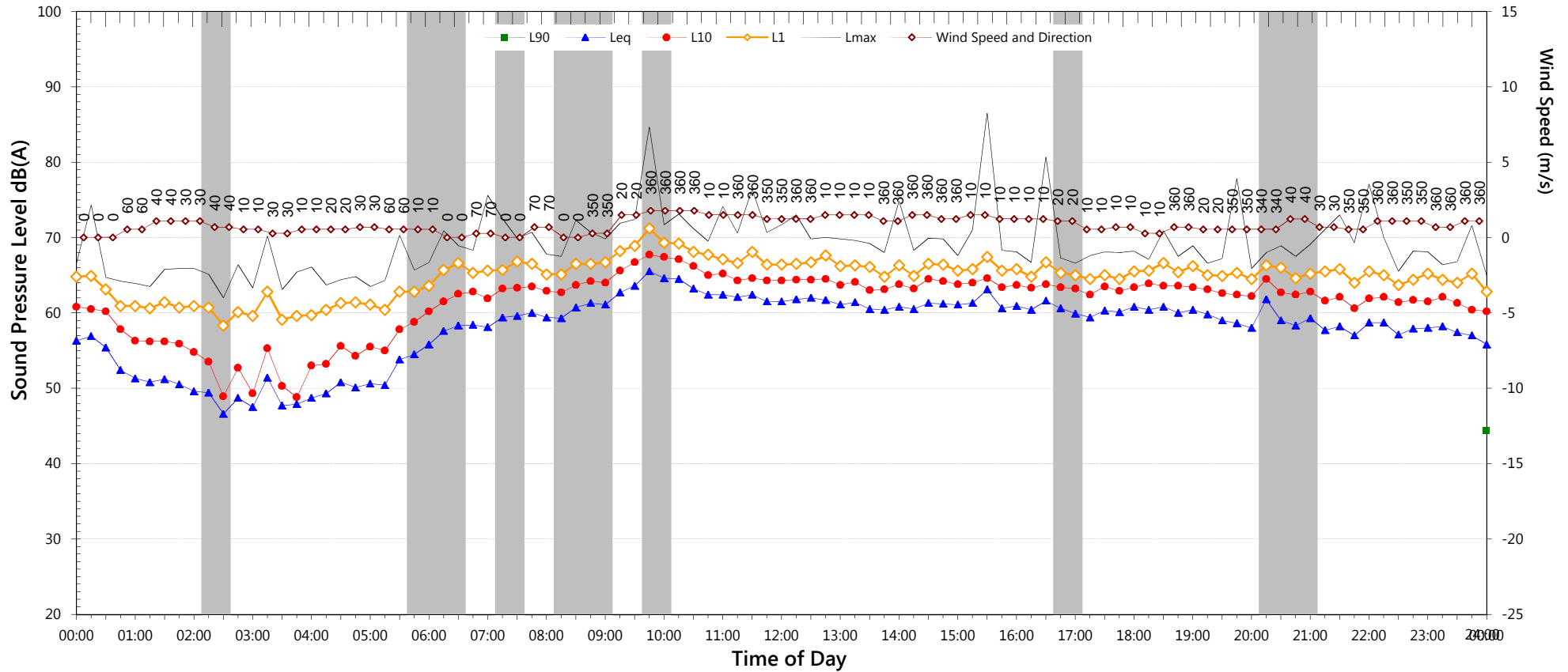
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 62.5 | 56.4 | |
| L _{eq 1hr} upper 10 percentile | 65.8 | 60.8 | |
| L _{eq 1hr} lower 10 percentile | 59.5 | 50.6 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 65.9 | to | 75.6 | |
| Lmax - Leq (Range) | 15.3 | to | 21.0 | |

Unattended Noise Monitoring Results

32 Memorial Ave - Front Yard

Saturday, 15 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | - | - | - |
| Leq | - | - | - |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

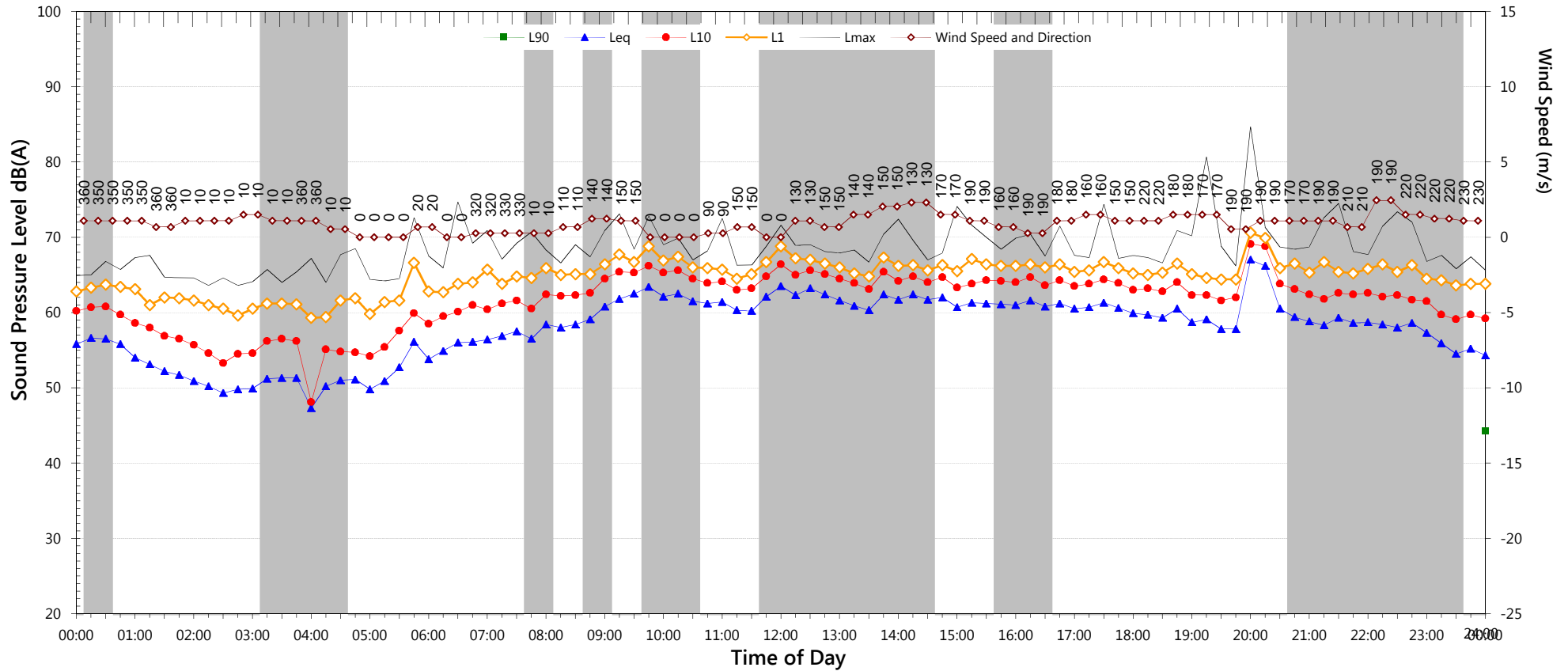
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 63.6 | 57.7 | |
| L _{eq 1hr} upper 10 percentile | 65.7 | 60.5 | |
| L _{eq 1hr} lower 10 percentile | 60.8 | 52.3 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 67.6 | to | 74.7 | |
| Lmax - Leq (Range) | 15.6 | to | 18.8 | |

Unattended Noise Monitoring Results

32 Memorial Ave - Front Yard

Sunday, 16 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | - | - | - |
| Leq | - | - | - |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

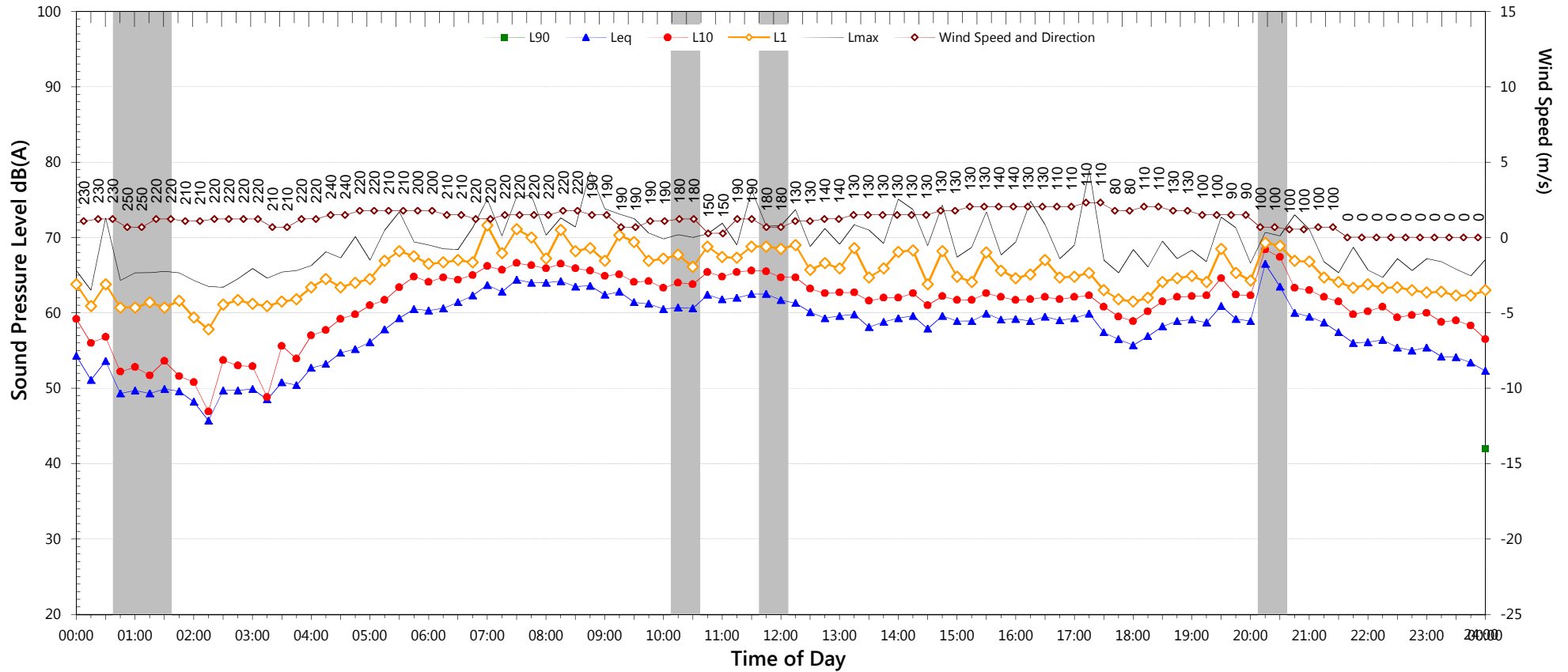
| NSW Road Noise Policy (1m from facade) (see note 3) | | |
|---|----------|--------------------|
| Descriptor | Day | Night ² |
| | 7am-10pm | 10pm-7am |
| L _{eq 15 hr} and L _{eq 9 hr} | 63.6 | 59.6 |
| L _{eq 1hr} upper 10 percentile | 66.4 | 64.7 |
| L _{eq 1hr} lower 10 percentile | 59.9 | 51.5 |

| Night Time Maximum Noise Levels (see note 4) | | | |
|--|------|----|------|
| Lmax (Range) | 65.3 | to | 72.6 |
| Lmax - Leq (Range) | 15.2 | to | 20.1 |

Unattended Noise Monitoring Results

32 Memorial Ave - Front Yard

Monday, 17 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 48.4 | 46.1 | 36.7 |
| Leq | 61.0 | 58.7 | 55.7 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

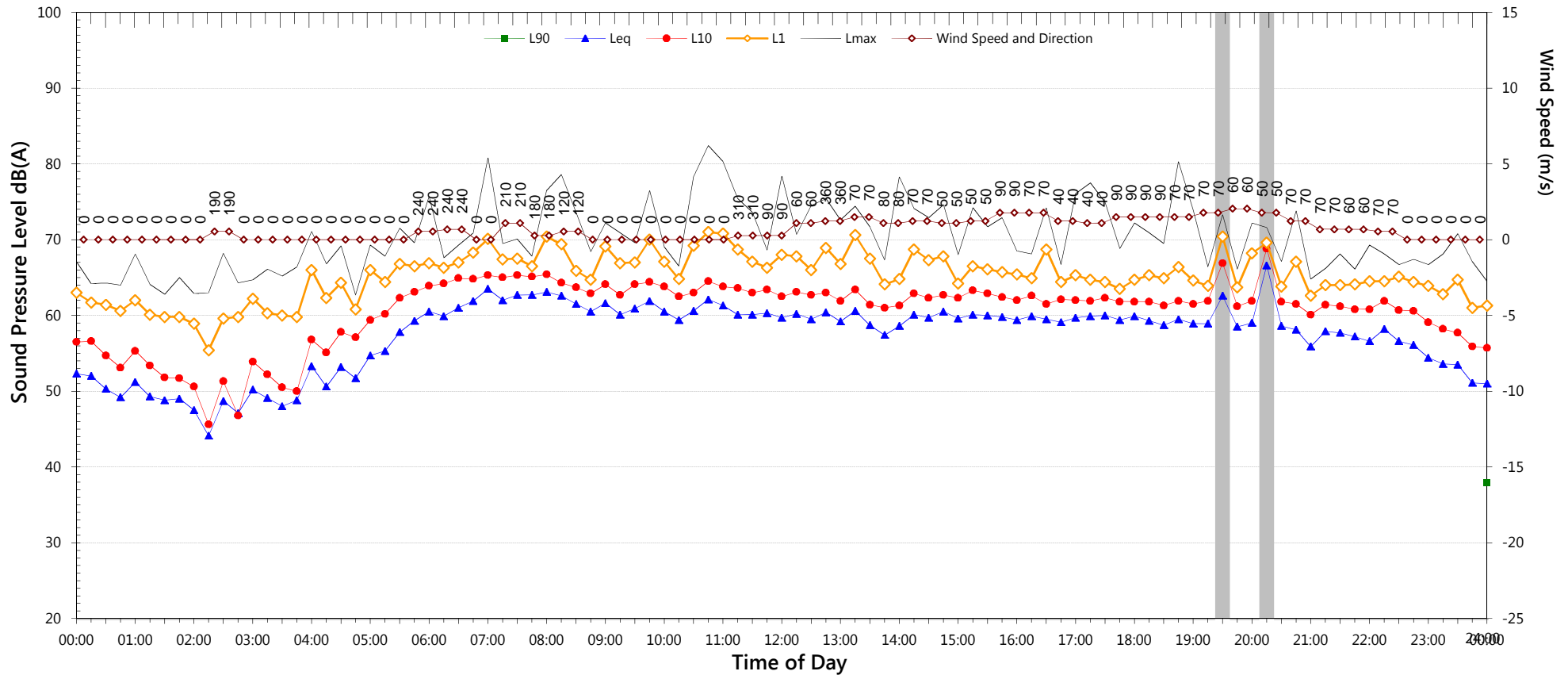
| NSW Road Noise Policy (1m from facade) (see note 3) | | |
|---|----------|--------------------|
| Descriptor | Day | Night ² |
| | 7am-10pm | 10pm-7am |
| L _{eq 15 hr} and L _{eq 9 hr} | 63.0 | 58.2 |
| L _{eq 1hr} upper 10 percentile | 66.2 | 64.3 |
| L _{eq 1hr} lower 10 percentile | 59.9 | 50.6 |

| Night Time Maximum Noise Levels (see note 4) | | | |
|--|------|----|------|
| Lmax (Range) | 65.0 | to | 80.8 |
| Lmax - Leq (Range) | 16.3 | to | 20.7 |

Unattended Noise Monitoring Results

32 Memorial Ave - Front Yard

Tuesday, 18 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 50.6 | 43.5 | 36.6 |
| Leq | 60.5 | 58.3 | 55.9 |

- NOTES:
1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
 2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
 3. Graphed data measured in free-field; tabulated results facade corrected
 4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

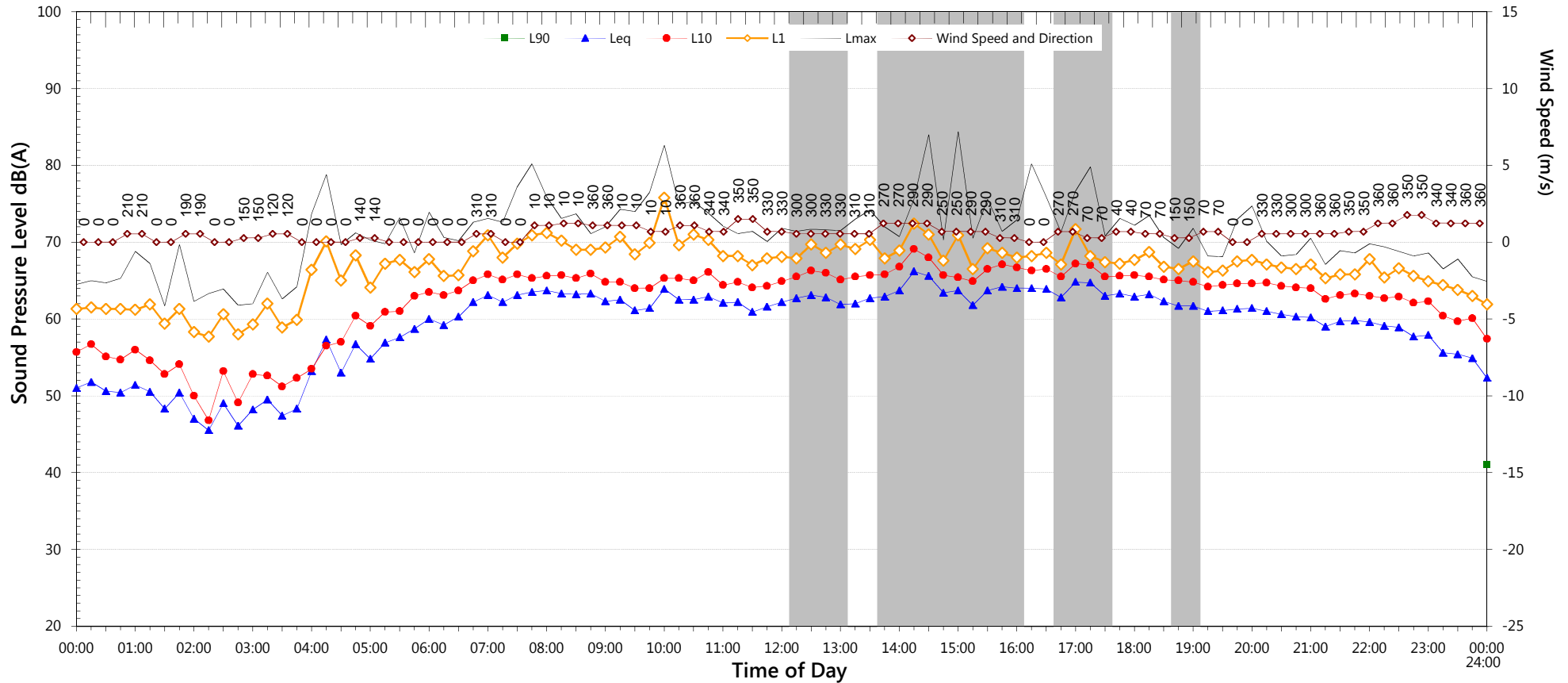
| NSW Road Noise Policy (1m from facade) (see note 3) | | |
|---|----------|--------------------|
| Descriptor | Day | Night ² |
| | 7am-10pm | 10pm-7am |
| L _{eq 15 hr} and L _{eq 9 hr} | 62.6 | 58.4 |
| L _{eq 1hr} upper 10 percentile | 64.7 | 64.0 |
| L _{eq 1hr} lower 10 percentile | 60.0 | 49.9 |

| Night Time Maximum Noise Levels (see note 4) | | | |
|--|------|----|------|
| Lmax (Range) | 68.8 | to | 78.8 |
| Lmax - Leq (Range) | 15.4 | to | 23.5 |

Unattended Noise Monitoring Results

32 Memorial Ave - Front Yard

Wednesday, 19 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | - | 48.7 | 38.0 |
| Leq | - | 60.9 | 58.7 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

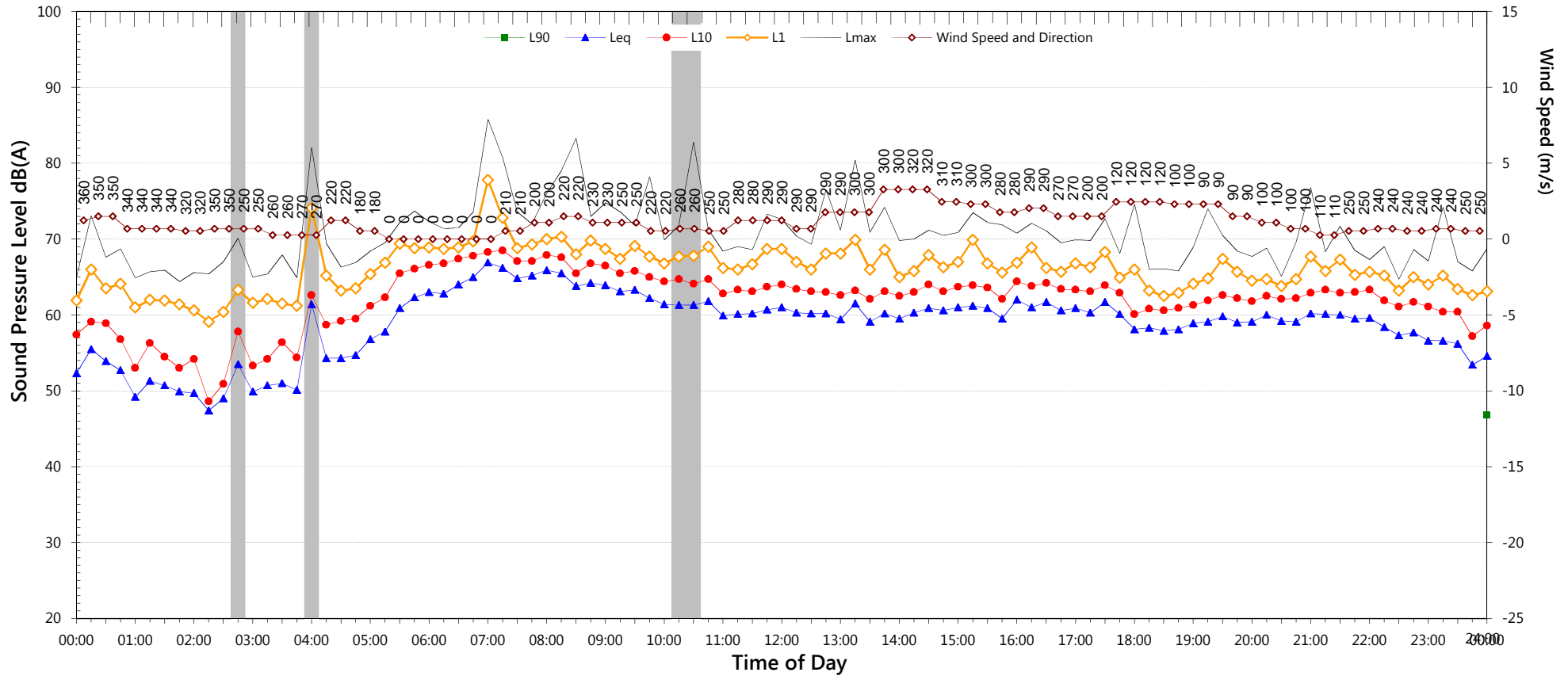
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 64.7 | 61.2 | |
| L _{eq 1hr} upper 10 percentile | 66.3 | 67.4 | |
| L _{eq 1hr} lower 10 percentile | 62.3 | 51.4 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 65.9 | to | 85.8 | |
| Lmax - Leq (Range) | 15.5 | to | 20.9 | |

Unattended Noise Monitoring Results

32 Memorial Ave - Front Yard

Thursday, 20 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 52.3 | 48.6 | 44.0 |
| Leq | 62.0 | 59.3 | 57.3 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

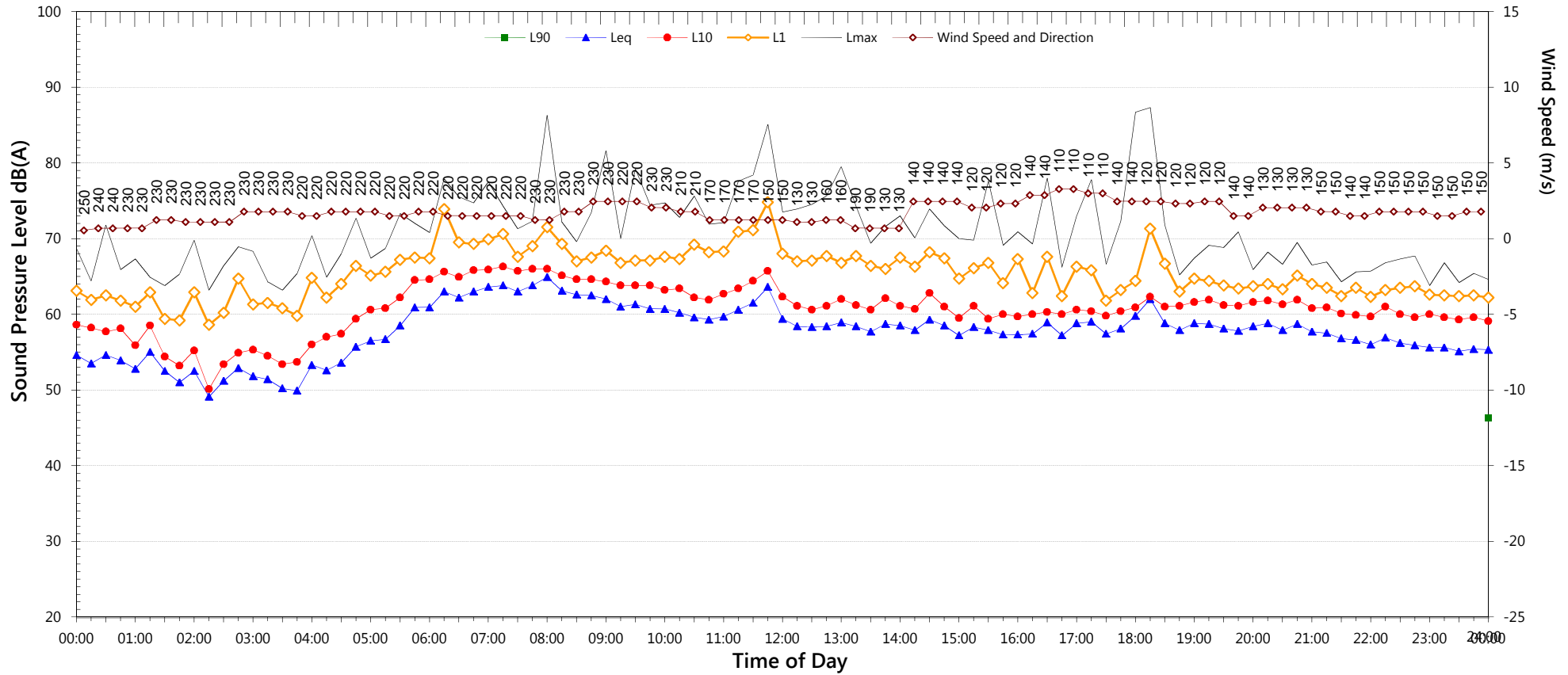
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 63.9 | 59.8 | |
| L _{eq 1hr} upper 10 percentile | 67.5 | 65.5 | |
| L _{eq 1hr} lower 10 percentile | 61.3 | 53.9 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 68.9 | to | 74.2 | |
| Lmax - Leq (Range) | 16.8 | to | 19.0 | |

Unattended Noise Monitoring Results

32 Memorial Ave - Front Yard

Friday, 21 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 48.9 | 49.1 | 37.1 |
| Leq | 60.4 | 58.4 | 54.6 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

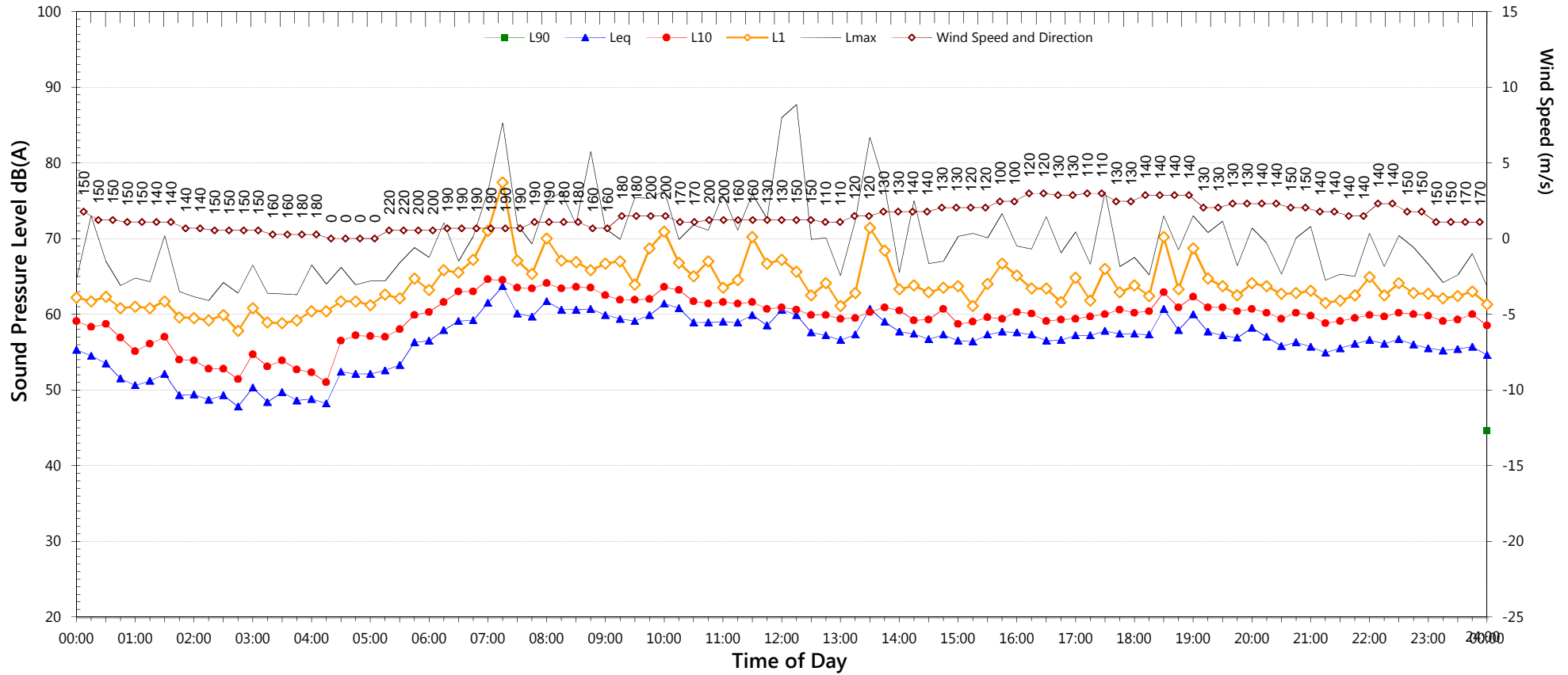
| NSW Road Noise Policy (1m from facade) (see note 3) | | |
|---|----------|--------------------|
| Descriptor | Day | Night ² |
| | 7am-10pm | 10pm-7am |
| L _{eq 15 hr} and L _{eq 9 hr} | 62.4 | 57.1 |
| L _{eq 1hr} upper 10 percentile | 65.8 | 62.1 |
| L _{eq 1hr} lower 10 percentile | 59.8 | 51.4 |

| Night Time Maximum Noise Levels (see note 4) | | | |
|--|------|----|------|
| Lmax (Range) | 66.5 | to | 76.3 |
| Lmax - Leq (Range) | 16.7 | to | 20.2 |

Unattended Noise Monitoring Results

32 Memorial Ave - Front Yard

Saturday, 22 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 49.3 | 45.2 | 38.5 |
| Leq | 59.1 | 57.4 | 54.0 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

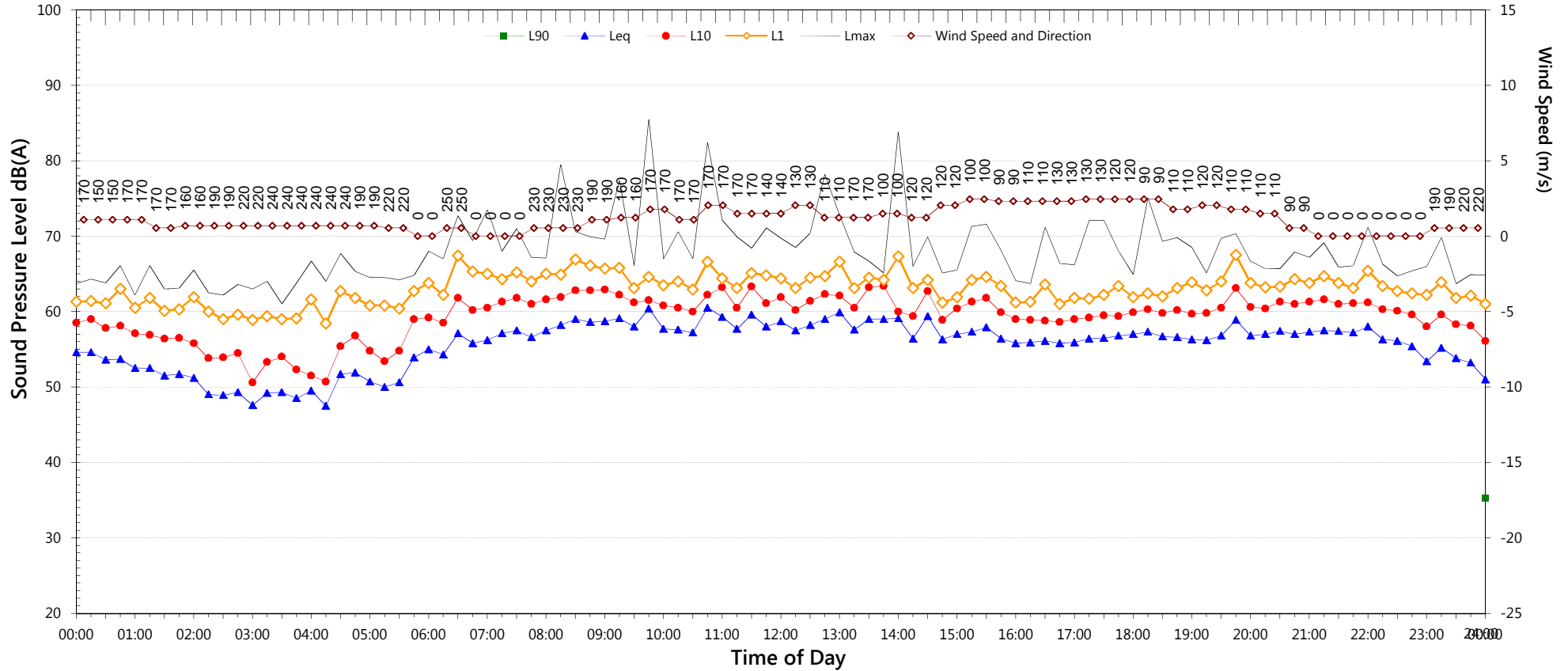
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 61.2 | 56.5 | |
| L _{eq 1hr} upper 10 percentile | 63.6 | 58.6 | |
| L _{eq 1hr} lower 10 percentile | 58.5 | 51.2 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 66.7 | to | 73.5 | |
| Lmax - Leq (Range) | 15.1 | to | 17.6 | |

Unattended Noise Monitoring Results

32 Memorial Ave - Front Yard

Sunday, 23 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 46.7 | 46.0 | 35.8 |
| Leq | 58.1 | 57.2 | 55.7 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

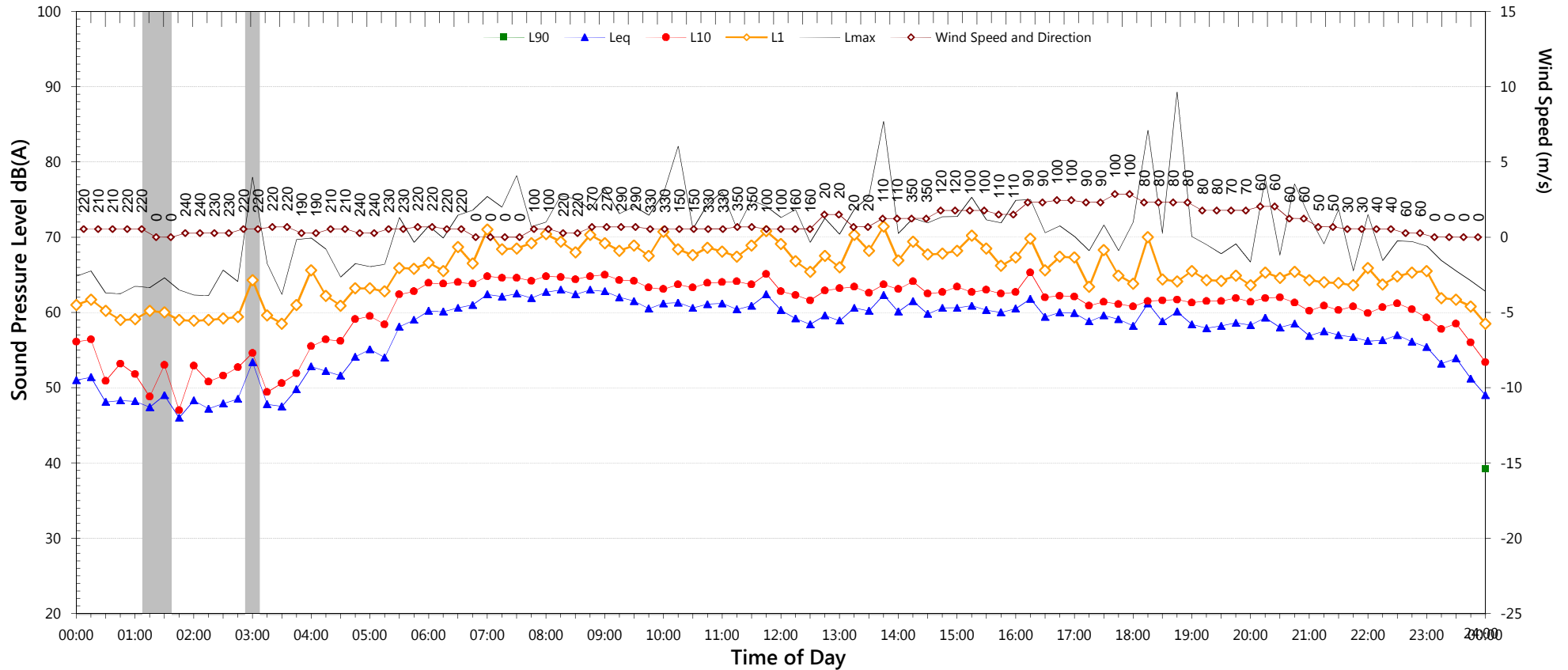
| NSW Road Noise Policy (1m from facade) (see note 3) | | |
|---|----------|--------------------|
| Descriptor | Day | Night ² |
| | 7am-10pm | 10pm-7am |
| L _{eq 15 hr} and L _{eq 9 hr} | 60.3 | 58.2 |
| L _{eq 1hr} upper 10 percentile | 61.4 | 63.6 |
| L _{eq 1hr} lower 10 percentile | 58.8 | 49.8 |

| Night Time Maximum Noise Levels (see note 4) | | | |
|--|------|----|------|
| Lmax (Range) | 65.5 | to | 69.9 |
| Lmax - Leq (Range) | 15.7 | to | 19.9 |

Unattended Noise Monitoring Results

32 Memorial Ave - Front Yard

Monday, 24 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 51.1 | 45.9 | 39.2 |
| Leq | 61.0 | 58.4 | 56.2 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

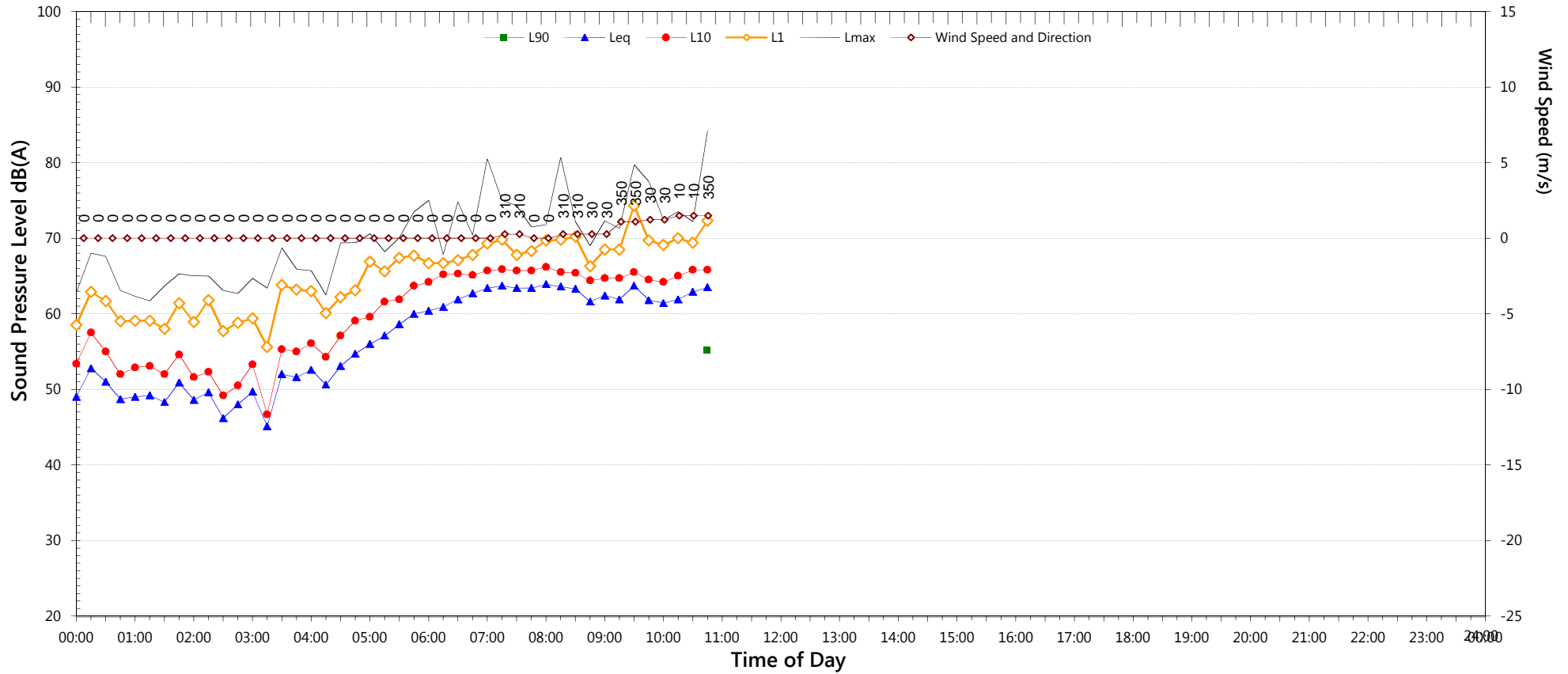
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 62.9 | 58.7 | |
| L _{eq 1hr} upper 10 percentile | 65.1 | 64.8 | |
| L _{eq 1hr} lower 10 percentile | 60.1 | 51.1 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 65.0 | to | 80.5 | |
| Lmax - Leq (Range) | 15.8 | to | 18.2 | |

Unattended Noise Monitoring Results

32 Memorial Ave - Front Yard

Tuesday, 25 February 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | - | - | - |
| Leq | - | - | - |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

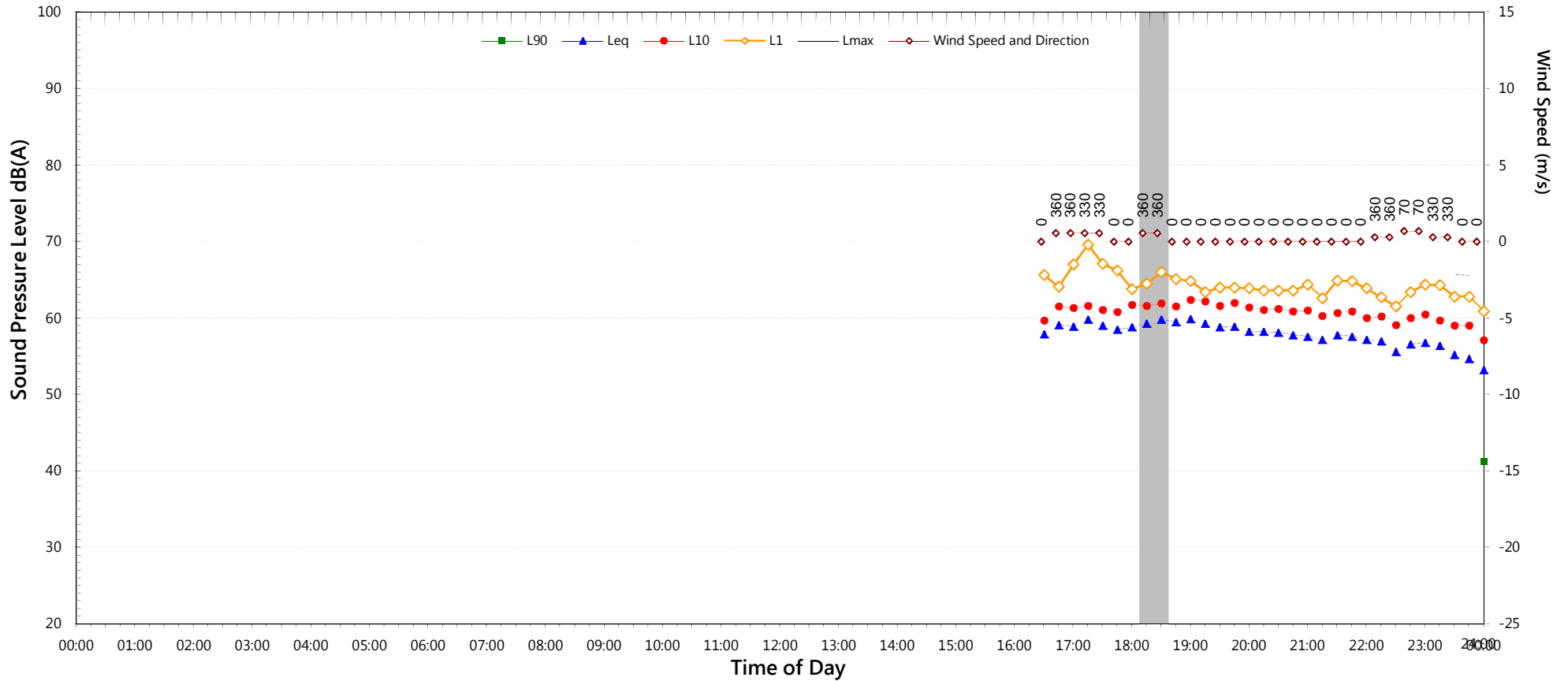
| NSW Road Noise Policy (1m from facade) (see note 3) | | |
|---|----------|--------------------|
| Descriptor | Day | Night ² |
| | 7am-10pm | 10pm-7am |
| L _{eq 15 hr} and L _{eq 9 hr} | 65.4 | - |
| L _{eq 1hr} upper 10 percentile | 66.1 | - |
| L _{eq 1hr} lower 10 percentile | 64.8 | - |

| Night Time Maximum Noise Levels (see note 4) | | | |
|--|---|----|---|
| Lmax (Range) | - | to | - |
| Lmax - Leq (Range) | - | to | - |

Unattended Noise Monitoring Results

10 Rothwell Circuit

Tuesday, 15 July 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | - | 46.6 | - |
| Leq | - | 58.4 | - |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax >65dB(A) and where Lmax- Leq ≥15dB(A)

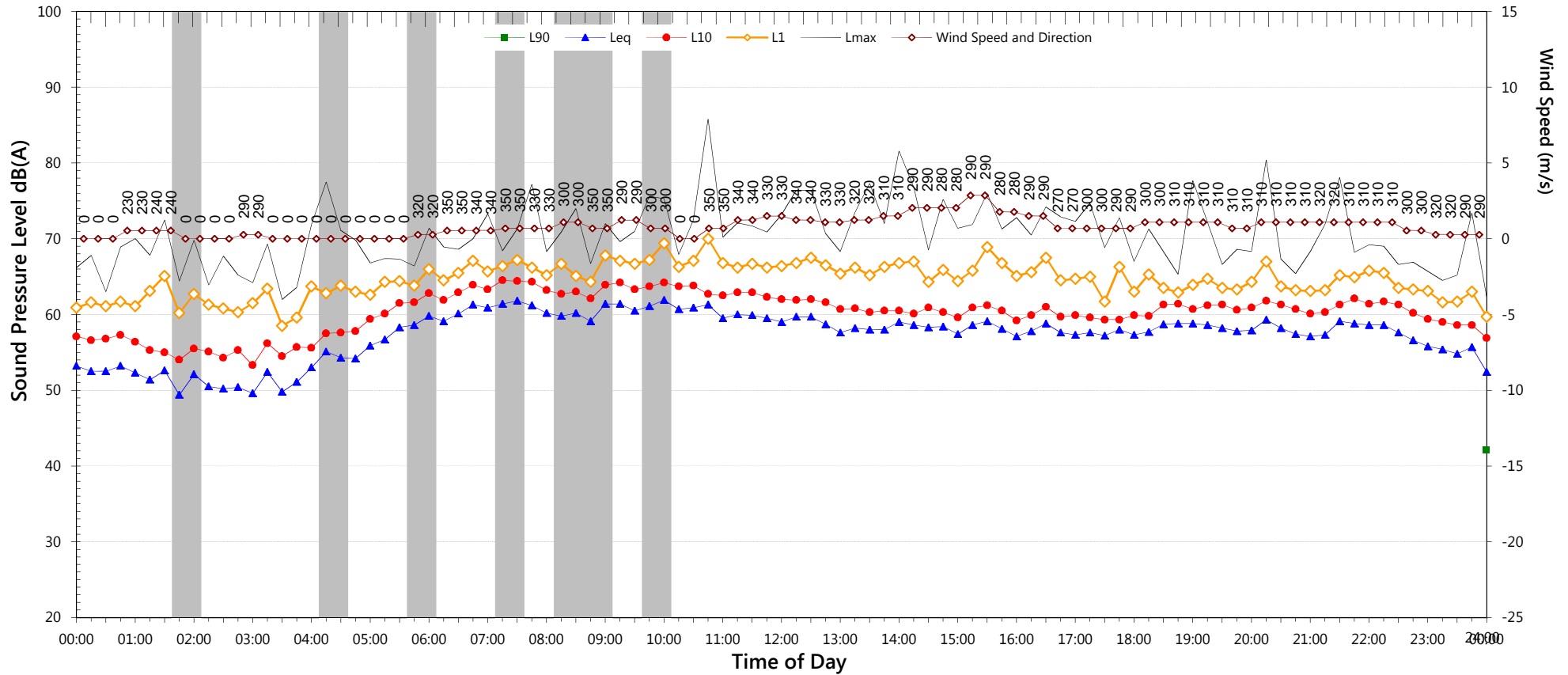
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq} 15 hr and L _{eq} 9 hr | 61.1 | 58.3 | |
| L _{eq} 1hr upper 10 percentile | 62.2 | 62.9 | |
| L _{eq} 1hr lower 10 percentile | 60.0 | 52.7 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 67.7 | to | 72.5 | |
| Lmax - Leq (Range) | 17.4 | to | 20.5 | |

Unattended Noise Monitoring Results

10 Rothwell Circuit

Wednesday, 16 July 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 48.5 | 48.2 | 36.5 |
| Leq | 59.1 | 58.3 | 56.6 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

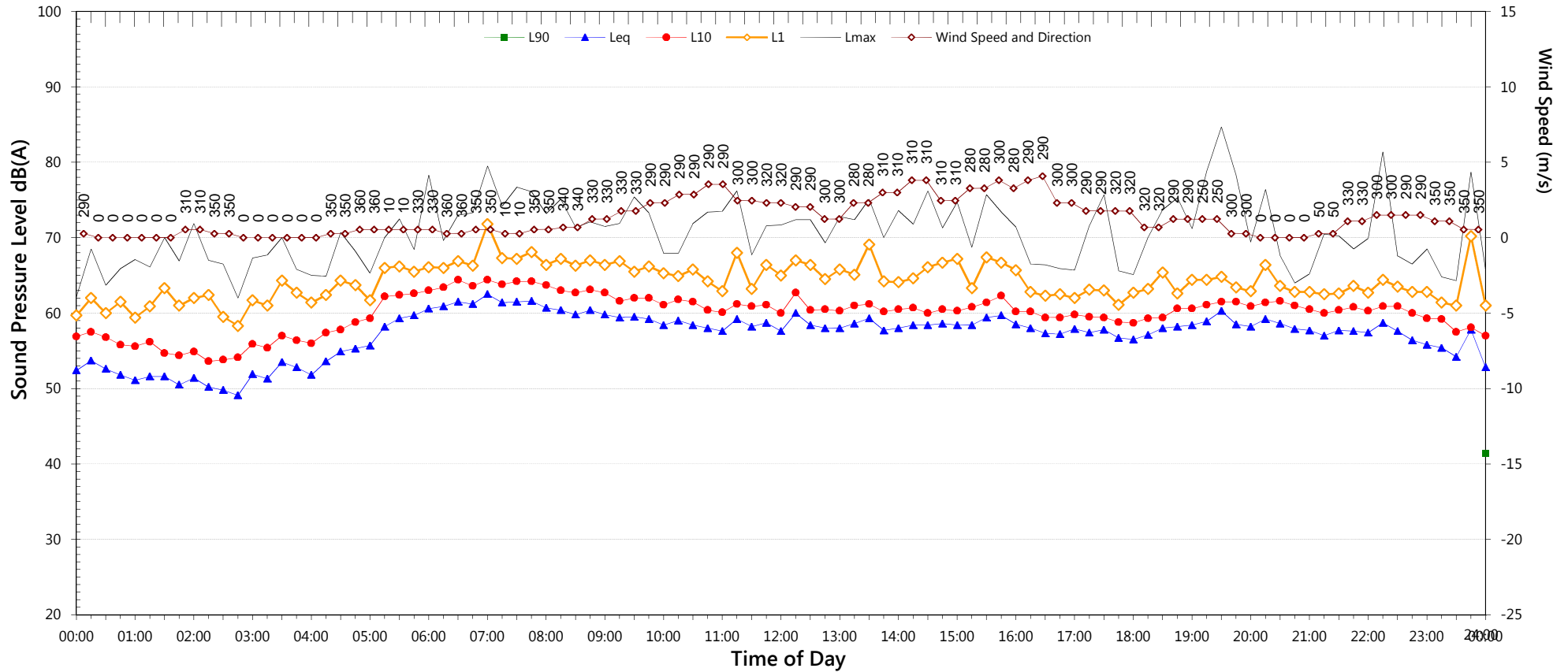
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 61.4 | 59.1 | |
| L _{eq 1hr} upper 10 percentile | 63.4 | 64.1 | |
| L _{eq 1hr} lower 10 percentile | 60.2 | 52.9 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 67.3 | to | 79.5 | |
| Lmax - Leq (Range) | 15.8 | to | 20.6 | |

Unattended Noise Monitoring Results

10 Rothwell Circuit

Thursday, 17 July 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 50.7 | 47.9 | 37.1 |
| Leq | 58.9 | 58.2 | 56.0 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

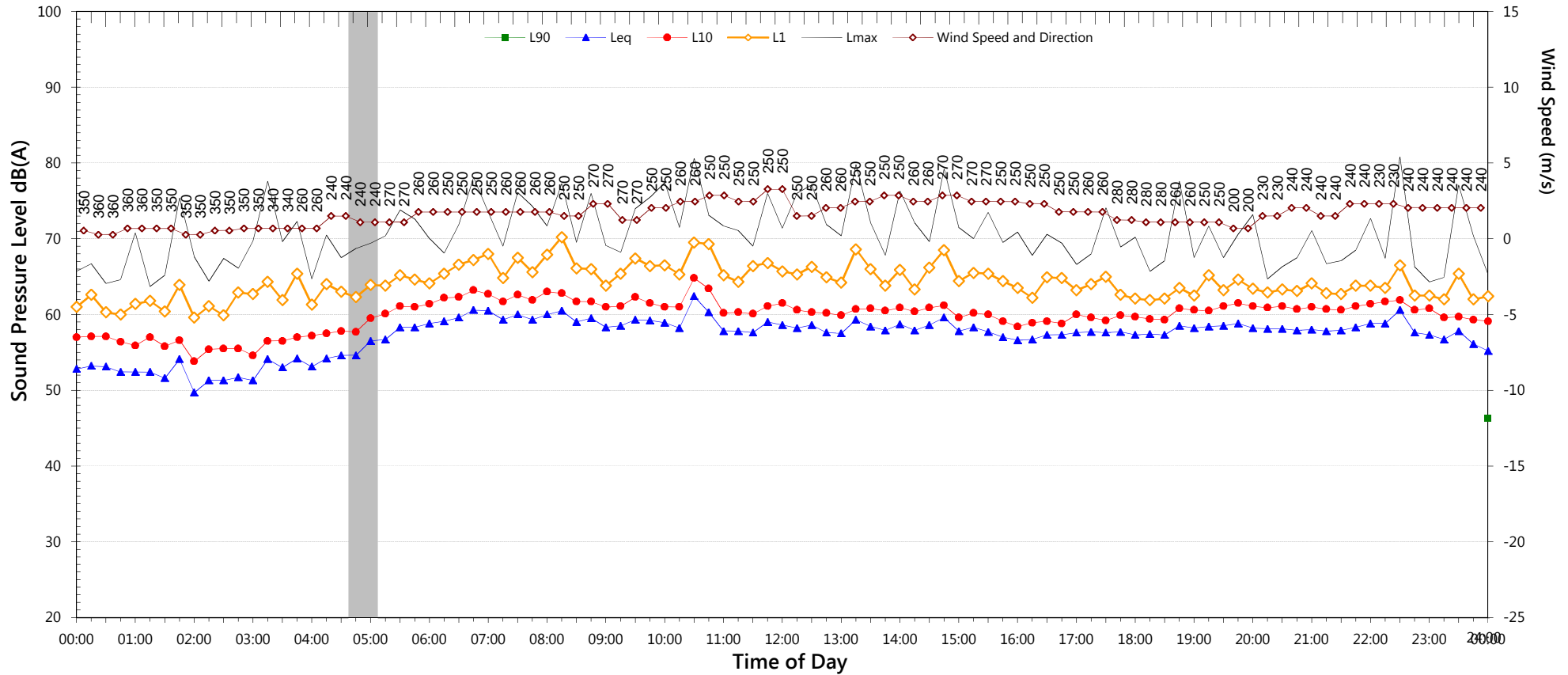
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 61.3 | 58.5 | |
| L _{eq 1hr} upper 10 percentile | 63.3 | 62.5 | |
| L _{eq 1hr} lower 10 percentile | 59.8 | 53.9 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 69.7 | to | 81.4 | |
| Lmax - Leq (Range) | 15.7 | to | 24.1 | |

Unattended Noise Monitoring Results

10 Rothwell Circuit

Friday, 18 July 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 50.4 | 50.4 | 40.3 |
| Leq | 58.6 | 58.2 | 55.8 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

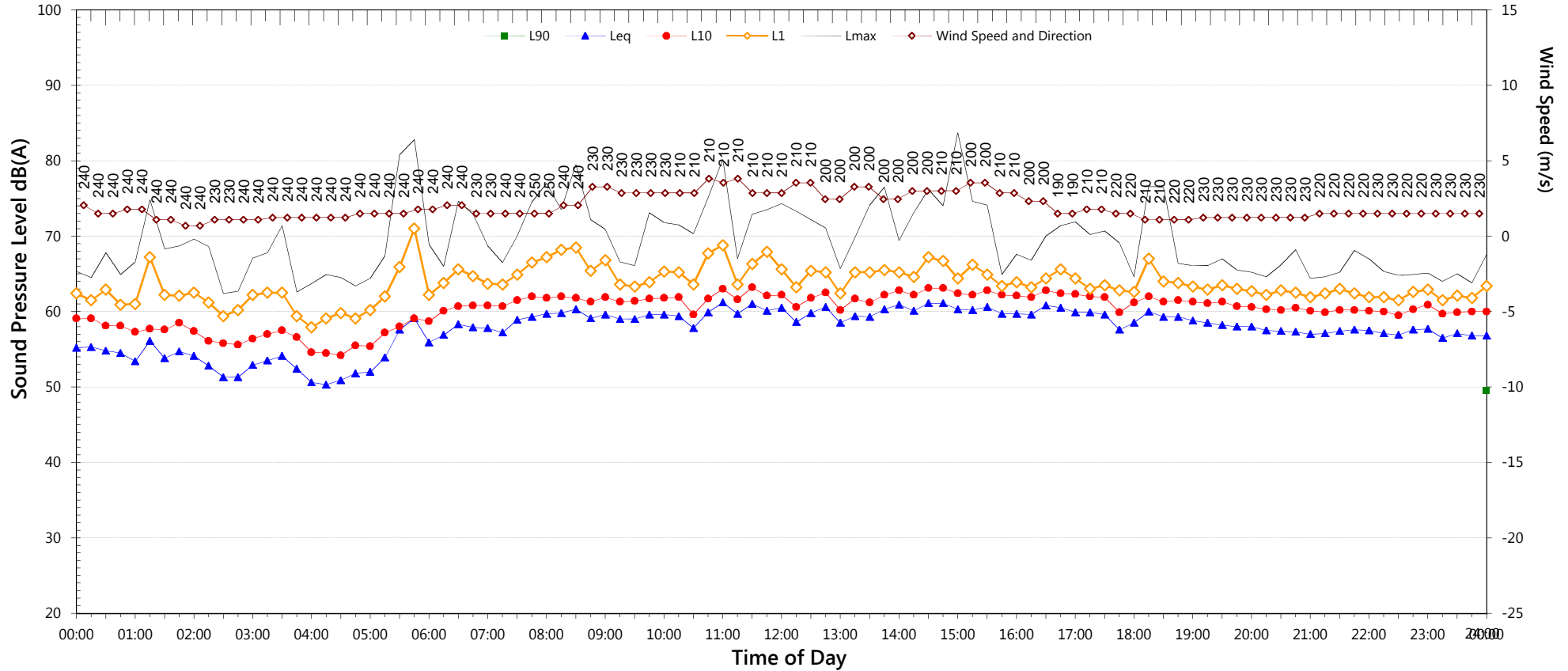
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 61.0 | 58.3 | |
| L _{eq 1hr} upper 10 percentile | 62.4 | 61.3 | |
| L _{eq 1hr} lower 10 percentile | 59.8 | 53.8 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 68.6 | to | 82.8 | |
| Lmax - Leq (Range) | 16.5 | to | 25.8 | |

Unattended Noise Monitoring Results

10 Rothwell Circuit

Saturday, 19 July 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 52.8 | 49.9 | 37.6 |
| Leq | 59.8 | 58.1 | 54.4 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

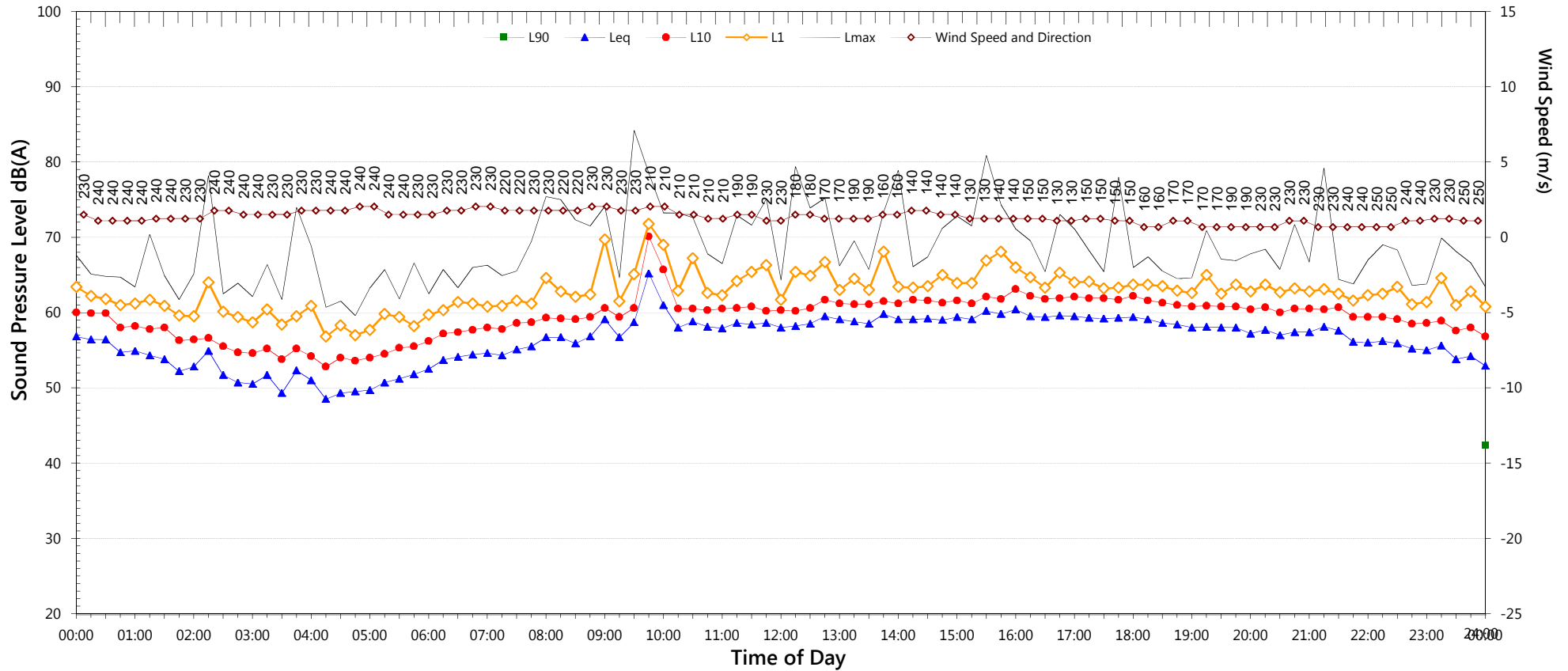
| NSW Road Noise Policy (1m from facade) (see note 3) | | |
|---|----------|--------------------|
| Descriptor | Day | Night ² |
| | 7am-10pm | 10pm-7am |
| L _{eq 15 hr} and L _{eq 9 hr} | 61.9 | 56.9 |
| L _{eq 1hr} upper 10 percentile | 63.0 | 59.8 |
| L _{eq 1hr} lower 10 percentile | 59.9 | 51.8 |

| Night Time Maximum Noise Levels (see note 4) | | | |
|--|------|----|------|
| Lmax (Range) | 70.4 | to | 78.2 |
| Lmax - Leq (Range) | 17.0 | to | 25.9 |

Unattended Noise Monitoring Results

10 Rothwell Circuit

Sunday, 20 July 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 50.5 | 48.3 | 36.1 |
| Leq | 59.3 | 57.7 | 55.5 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

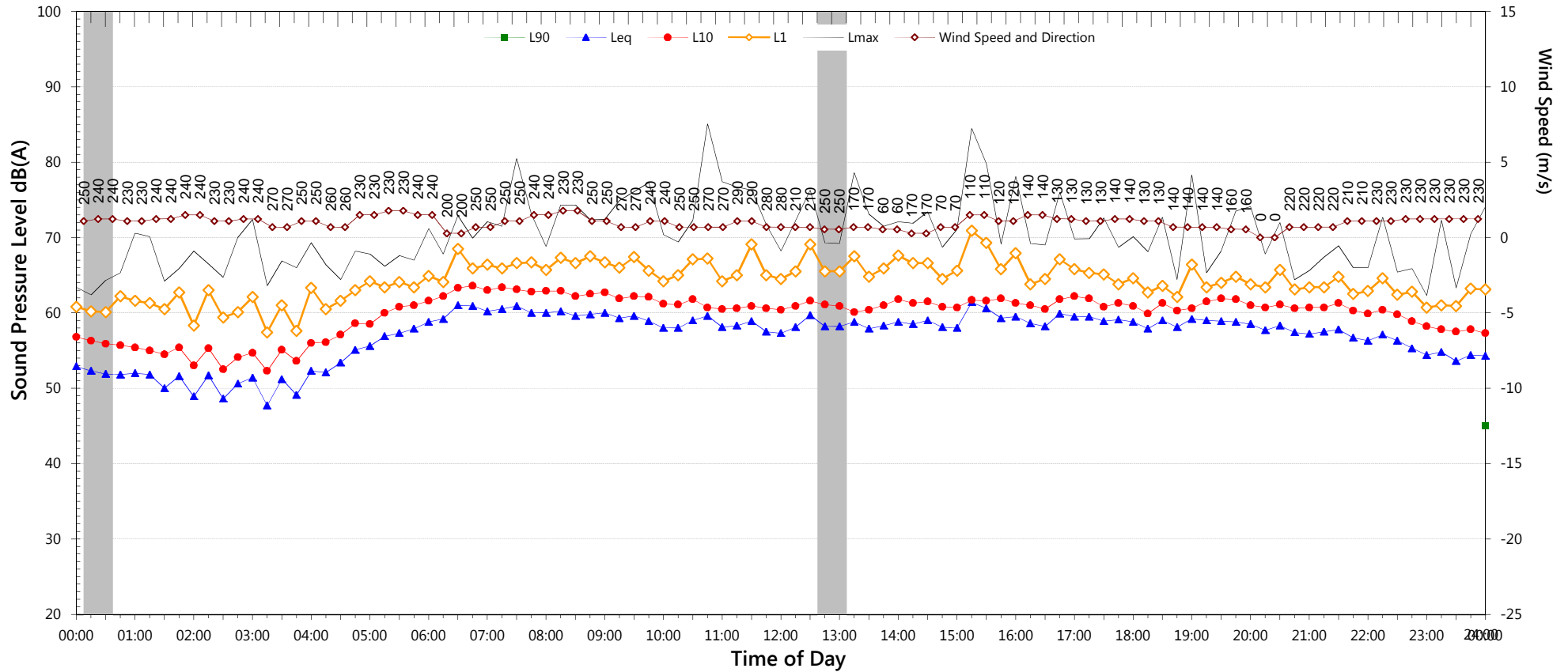
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 61.2 | 58.0 | |
| L _{eq 1hr} upper 10 percentile | 63.3 | 62.9 | |
| L _{eq 1hr} lower 10 percentile | 58.8 | 52.9 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 69.3 | to | 72.4 | |
| Lmax - Leq (Range) | 15.7 | to | 21.7 | |

Unattended Noise Monitoring Results

10 Rothwell Circuit

Monday, 21 July 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 47.1 | 48.2 | 38.3 |
| Leq | 59.2 | 58.1 | 56.0 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

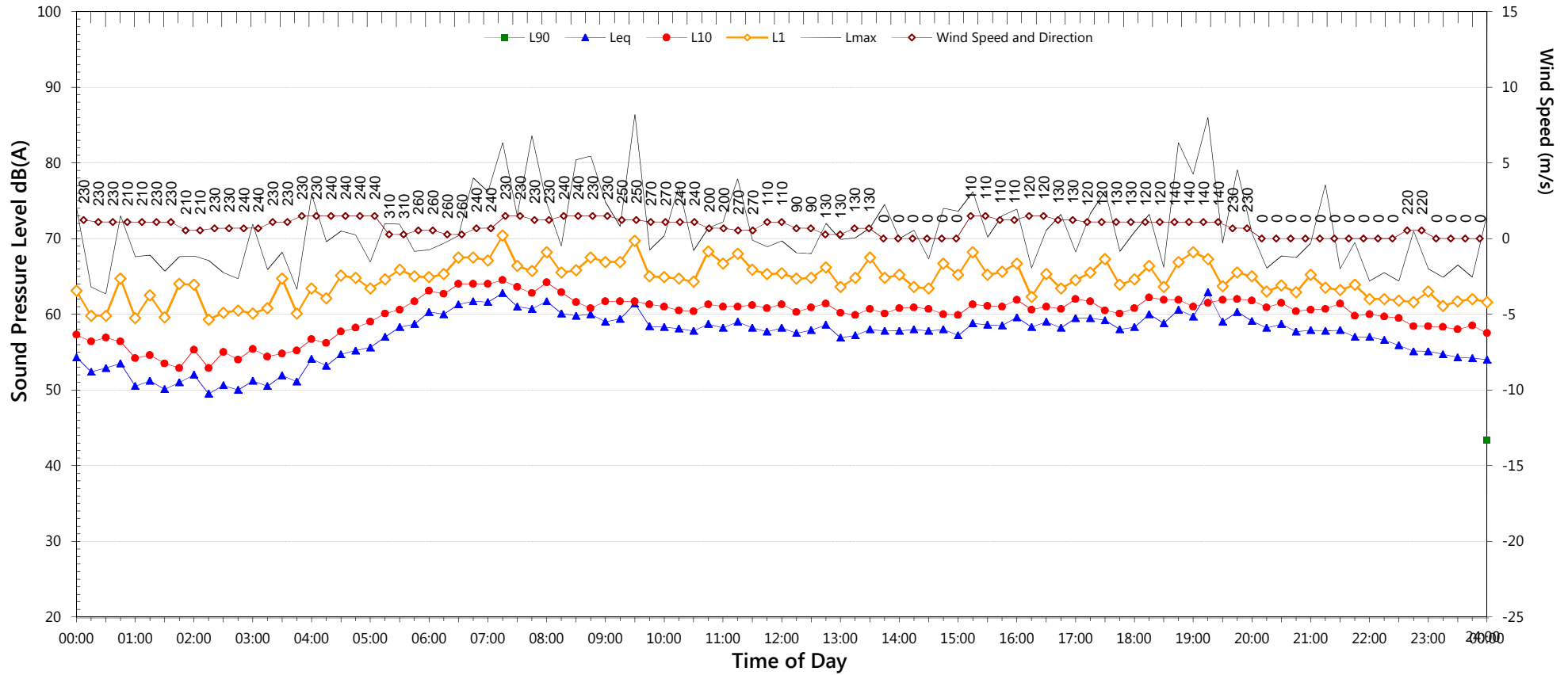
| NSW Road Noise Policy (1m from facade) (see note 3) | | |
|---|----------|--------------------|
| Descriptor | Day | Night ² |
| | 7am-10pm | 10pm-7am |
| L _{eq 15 hr} and L _{eq 9 hr} | 61.4 | 58.5 |
| L _{eq 1hr} upper 10 percentile | 62.8 | 63.7 |
| L _{eq 1hr} lower 10 percentile | 59.9 | 52.9 |

| Night Time Maximum Noise Levels (see note 4) | | | |
|--|------|----|------|
| Lmax (Range) | 67.8 | to | 78.0 |
| Lmax - Leq (Range) | 16.2 | to | 23.7 |

Unattended Noise Monitoring Results

10 Rothwell Circuit

Tuesday, 22 July 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 47.2 | 49.3 | 39.4 |
| Leq | 59.0 | 59.2 | 56.1 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

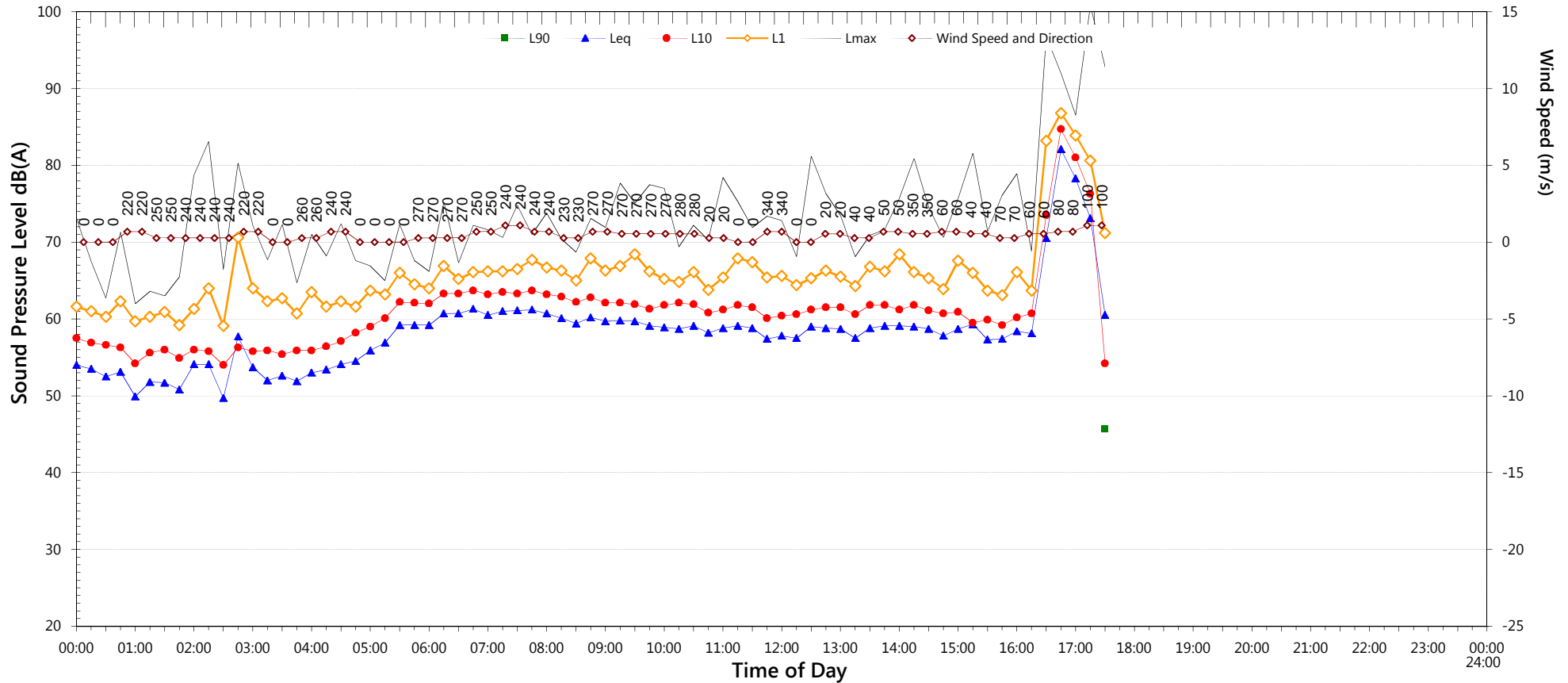
| NSW Road Noise Policy (1m from facade) (see note 3) | | |
|---|----------|--------------------|
| Descriptor | Day | Night ² |
| | 7am-10pm | 10pm-7am |
| L _{eq 15 hr} and L _{eq 9 hr} | 61.5 | 58.6 |
| L _{eq 1hr} upper 10 percentile | 63.7 | 63.3 |
| L _{eq 1hr} lower 10 percentile | 60.1 | 54.8 |

| Night Time Maximum Noise Levels (see note 4) | | | |
|--|------|----|------|
| Lmax (Range) | 71.0 | to | 83.1 |
| Lmax - Leq (Range) | 15.3 | to | 28.4 |

Unattended Noise Monitoring Results

10 Rothwell Circuit

Wednesday, 23 July 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 47.5 | - | - |
| Leq | 68.4 | - | - |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

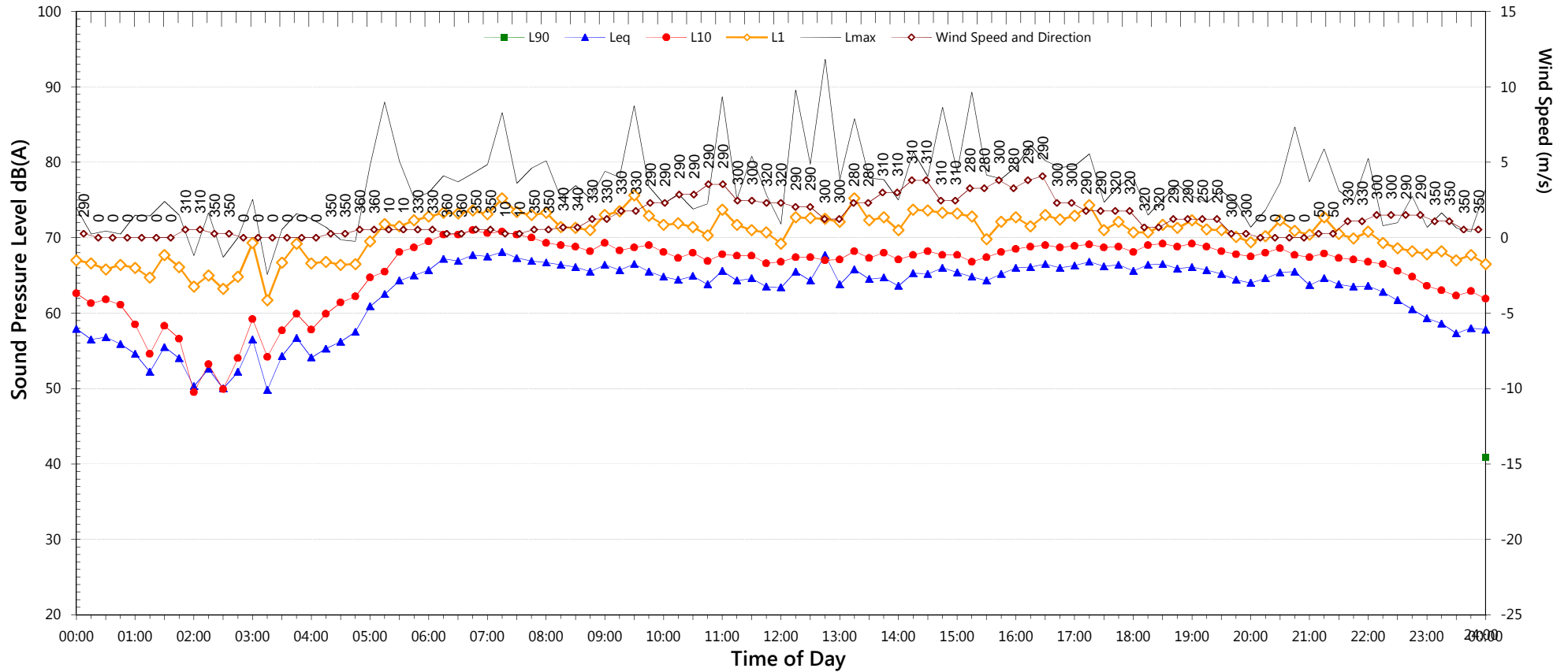
| NSW Road Noise Policy (1m from facade) (see note 3) | | |
|---|----------|--------------------|
| Descriptor | Day | Night ² |
| | 7am-10pm | 10pm-7am |
| L _{eq} 15 hr and L _{eq} 9 hr | 70.9 | - |
| L _{eq} 1hr upper 10 percentile | 79.9 | - |
| L _{eq} 1hr lower 10 percentile | 60.7 | - |

| Night Time Maximum Noise Levels (see note 4) | | | |
|--|---|----|---|
| Lmax (Range) | - | to | - |
| Lmax - Leq (Range) | - | to | - |

Unattended Noise Monitoring Results

8 Windsor Road

Thursday, 17 July 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 55.7 | 52.2 | 33.6 |
| Leq | 65.7 | 65.0 | 60.5 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

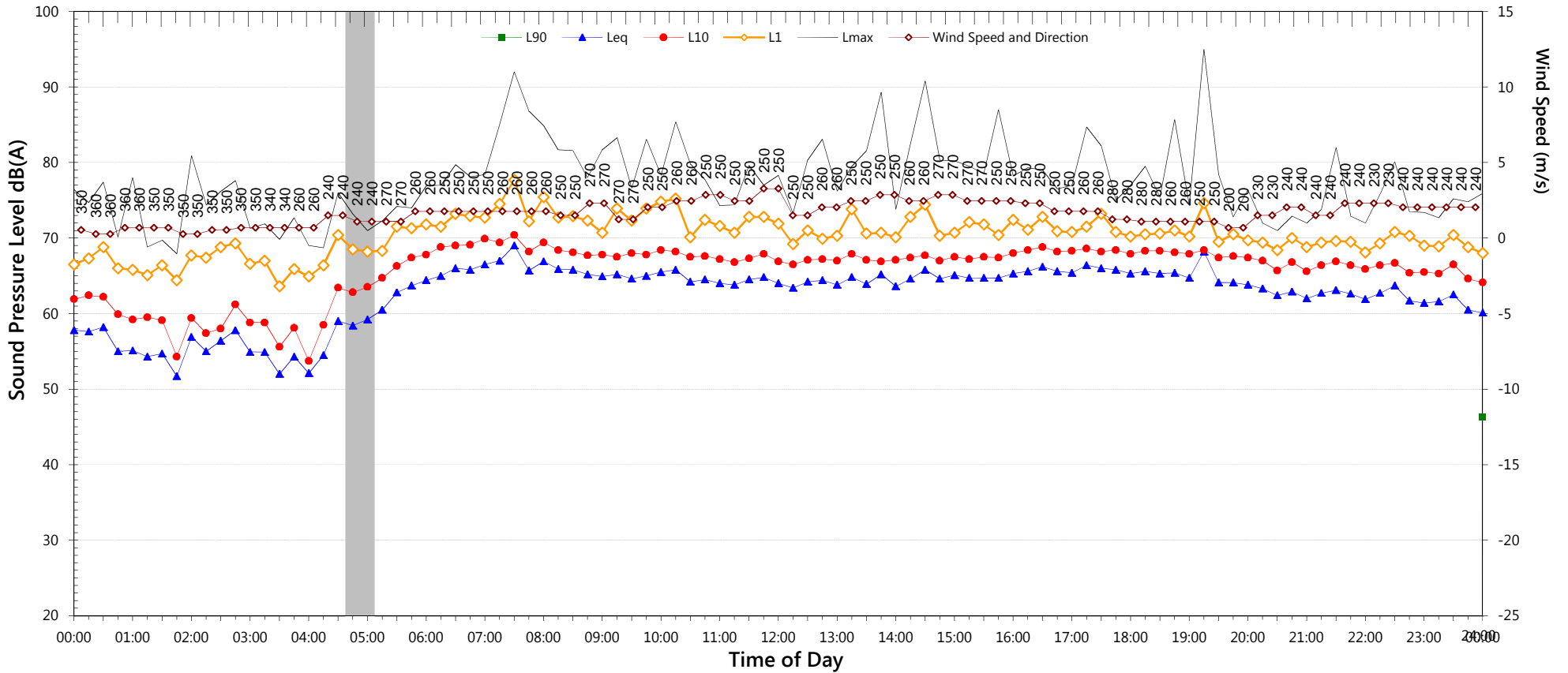
| NSW Road Noise Policy (1m from facade) (see note 3) | | |
|---|----------|--------------------|
| Descriptor | Day | Night ² |
| | 7am-10pm | 10pm-7am |
| L _{eq 15 hr} and L _{eq 9 hr} | 68.0 | 63.0 |
| L _{eq 1hr} upper 10 percentile | 69.3 | 68.4 |
| L _{eq 1hr} lower 10 percentile | 66.4 | 56.0 |

| Night Time Maximum Noise Levels (see note 4) | | | |
|--|------|----|------|
| Lmax (Range) | 72.7 | to | 80.9 |
| Lmax - Leq (Range) | 18.4 | to | 26.1 |

Unattended Noise Monitoring Results

8 Windsor Road

Friday, 18 July 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 55.8 | 51.5 | 35.7 |
| Leq | 65.3 | 64.2 | 59.0 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

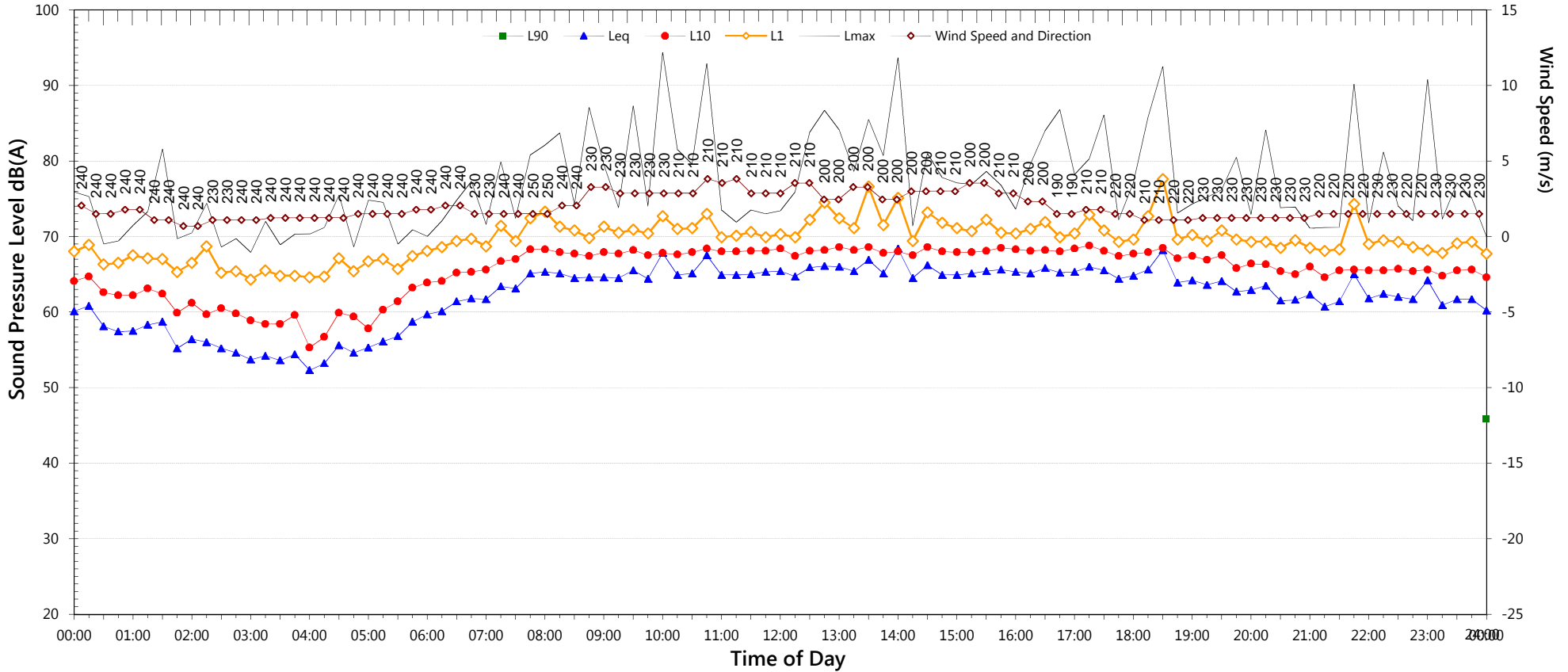
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 67.5 | 61.5 | |
| L _{eq 1hr} upper 10 percentile | 69.2 | 65.0 | |
| L _{eq 1hr} lower 10 percentile | 65.1 | 56.2 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 72.0 | to | 81.6 | |
| Lmax - Leq (Range) | 16.0 | to | 24.2 | |

Unattended Noise Monitoring Results

8 Windsor Road

Saturday, 19 July 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 56.7 | 49.9 | 35.0 |
| Leq | 65.4 | 63.8 | 58.8 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

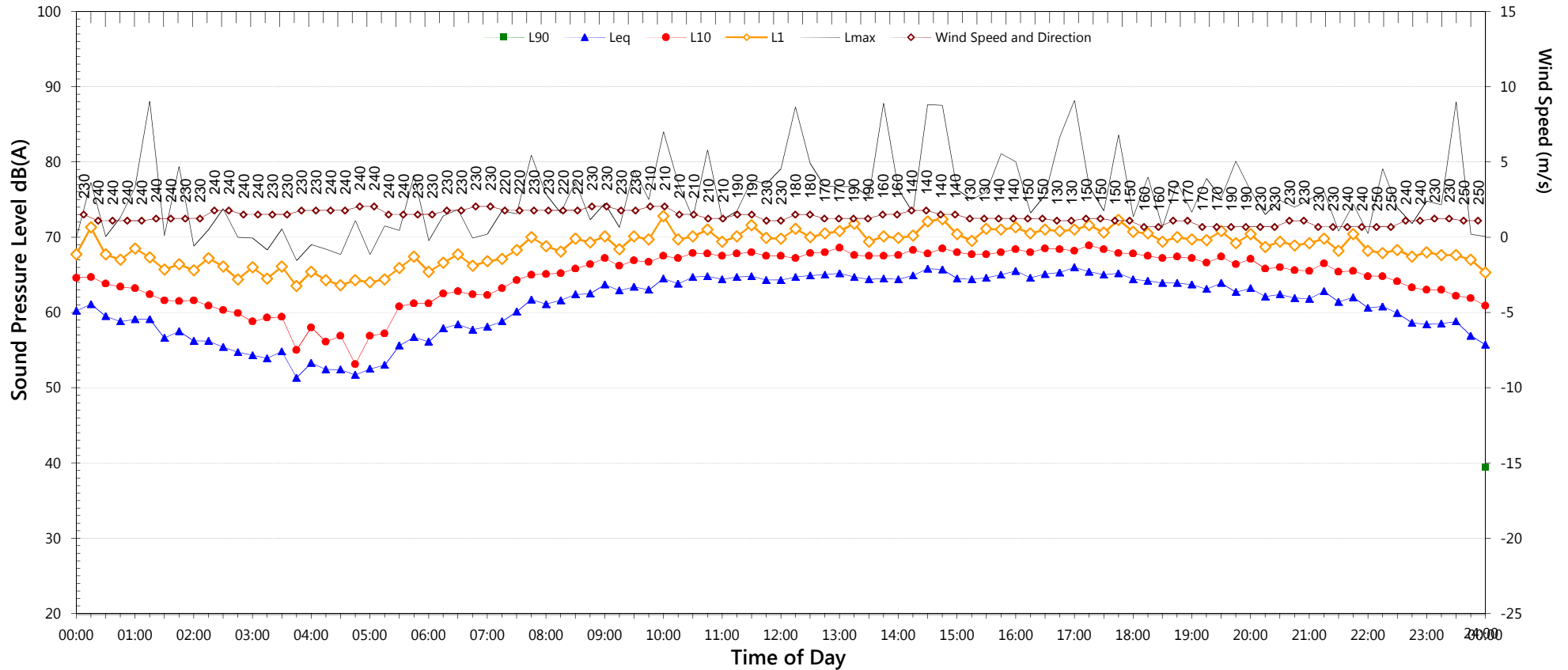
| NSW Road Noise Policy (1m from facade) (see note 3) | | |
|---|----------|--------------------|
| Descriptor | Day | Night ² |
| | 7am-10pm | 10pm-7am |
| L _{eq 15 hr} and L _{eq 9 hr} | 67.5 | 61.3 |
| L _{eq 1hr} upper 10 percentile | 68.8 | 65.2 |
| L _{eq 1hr} lower 10 percentile | 64.9 | 54.8 |

| Night Time Maximum Noise Levels (see note 4) | | | |
|--|------|----|------|
| Lmax (Range) | 71.1 | to | 90.8 |
| Lmax - Leq (Range) | 15.7 | to | 30.6 |

Unattended Noise Monitoring Results

8 Windsor Road

Sunday, 20 July 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 54.6 | 48.6 | 34.1 |
| Leq | 64.6 | 62.8 | 60.3 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

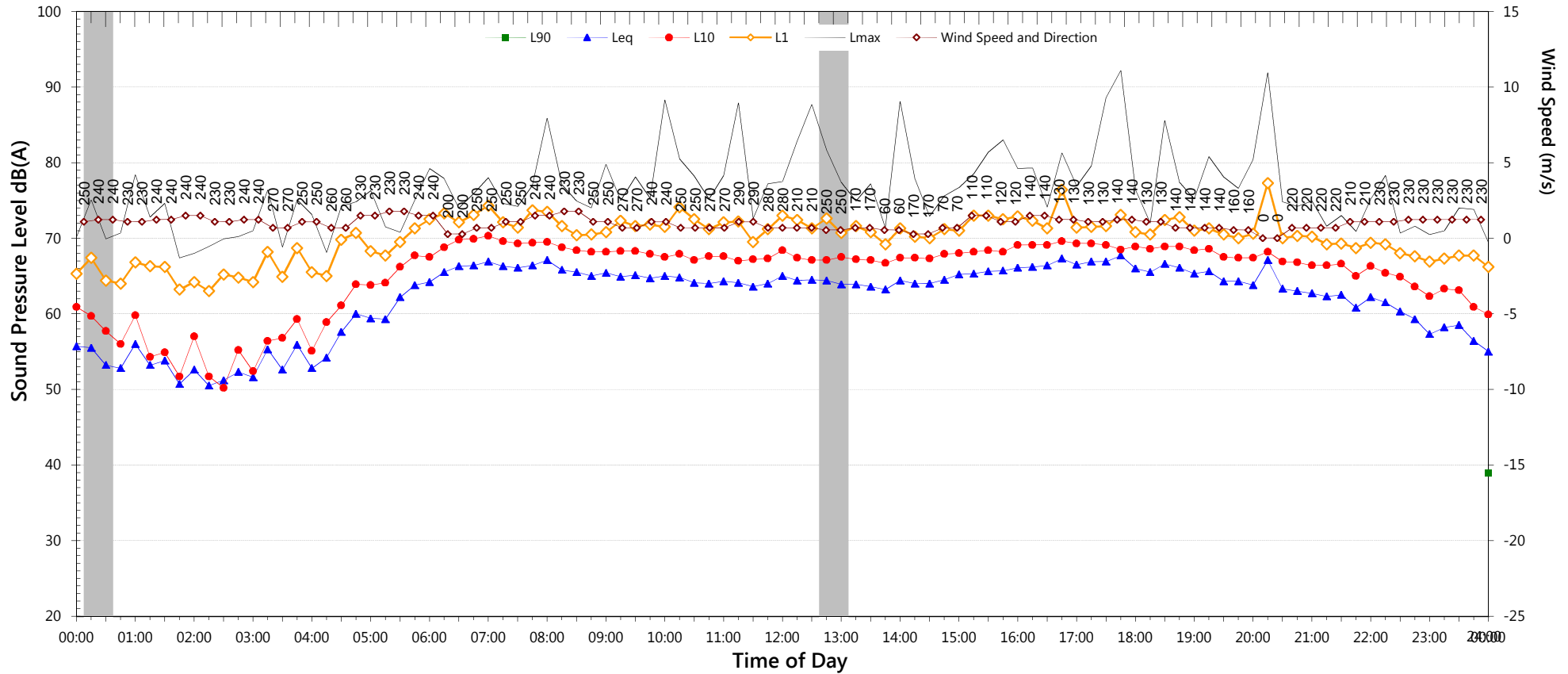
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 66.5 | 62.8 | |
| L _{eq 1hr} upper 10 percentile | 67.8 | 68.8 | |
| L _{eq 1hr} lower 10 percentile | 63.7 | 53.9 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 71.0 | to | 88.0 | |
| Lmax - Leq (Range) | 16.4 | to | 30.4 | |

Unattended Noise Monitoring Results

8 Windsor Road

Monday, 21 July 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 53.7 | 49.6 | 32.6 |
| Leq | 65.4 | 64.4 | 60.5 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

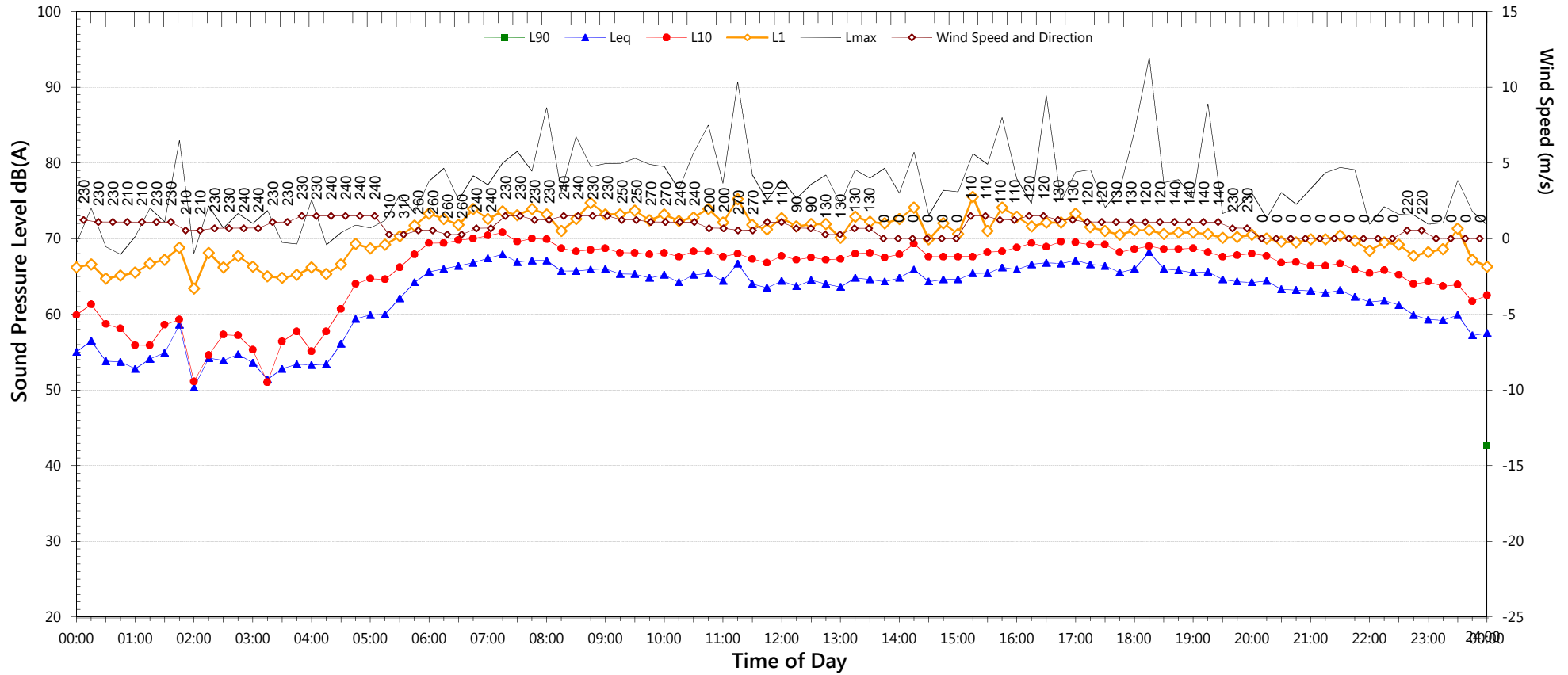
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 67.6 | 63.0 | |
| L _{eq 1hr} upper 10 percentile | 69.3 | 69.2 | |
| L _{eq 1hr} lower 10 percentile | 65.5 | 55.3 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 74.0 | to | 83.0 | |
| Lmax - Leq (Range) | 16.8 | to | 27.6 | |

Unattended Noise Monitoring Results

8 Windsor Road

Tuesday, 22 July 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 53.3 | 50.7 | 33.4 |
| Leq | 65.6 | 64.6 | 60.8 |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

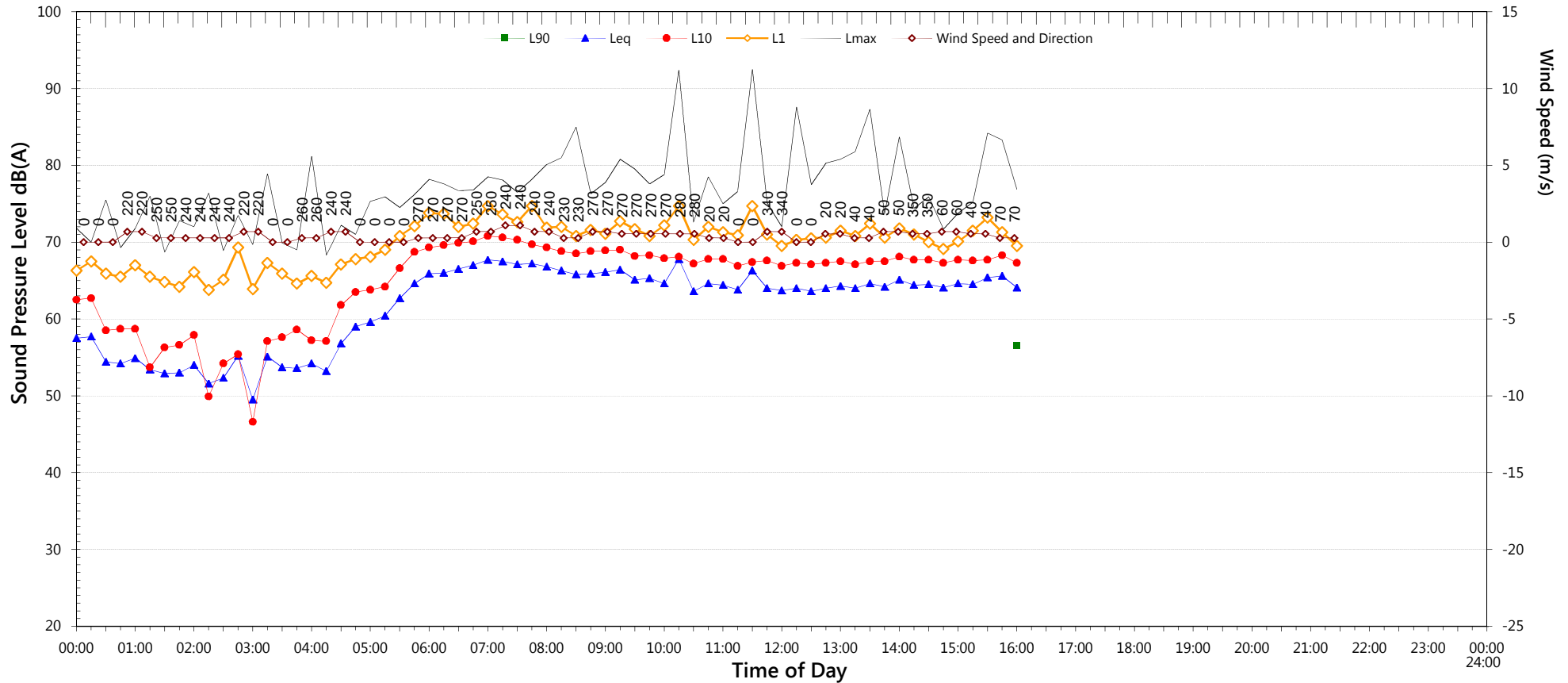
| NSW Road Noise Policy (1m from facade) | | | (see note 3) |
|--|----------|--------------------|--------------|
| Descriptor | Day | Night ² | |
| | 7am-10pm | 10pm-7am | |
| L _{eq 15 hr} and L _{eq 9 hr} | 67.8 | 63.3 | |
| L _{eq 1hr} upper 10 percentile | 69.5 | 69.3 | |
| L _{eq 1hr} lower 10 percentile | 65.6 | 55.1 | |

| Night Time Maximum Noise Levels | | | | (see note 4) |
|---------------------------------|------|----|------|--------------|
| Lmax (Range) | 75.3 | to | 81.2 | |
| Lmax - Leq (Range) | 17.5 | to | 27.0 | |

Unattended Noise Monitoring Results

8 Windsor Road

Wednesday, 23 July 2014



| NSW Industrial Noise Policy (Free Field) | | | |
|--|---------|----------|--------------------|
| Descriptor | Day | Evening | Night ² |
| | 7am-6pm | 6pm-10pm | 10pm-7am |
| L ₉₀ | 54.0 | - | - |
| Leq | 65.3 | - | - |

NOTES:

1. Shaded periods denote measurements adversely affected by rain, wind or extraneous noise - data in these periods are excluded from calculations.
2. "Night" relates to period from 10pm on this graph to 7am on the following graph.
3. Graphed data measured in free-field; tabulated results facade corrected
4. Night time Lmax values are shown only where Lmax > 65dB(A) and where Lmax - Leq ≥ 15dB(A)

| NSW Road Noise Policy (1m from facade) (see note 3) | | |
|---|----------|--------------------|
| Descriptor | Day | Night ² |
| | 7am-10pm | 10pm-7am |
| L _{eq 15 hr} and L _{eq 9 hr} | 67.8 | - |
| L _{eq 1hr} upper 10 percentile | 69.7 | - |
| L _{eq 1hr} lower 10 percentile | 66.5 | - |

| Night Time Maximum Noise Levels (see note 4) | | | |
|--|---|----|---|
| Lmax (Range) | - | to | - |
| Lmax - Leq (Range) | - | to | - |