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Noise Impact Assessment
Proposed Resource Recovery Facility
2F The Crescent
Kingsgrove, NSW

Prepared for:

Combined Skips
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FIGURES

EXECUTIVE SUMMARY

An acoustic assessment of the proposed operation of a Resource Recovery Facility (RRF) within existing commercial premises at 2F The Crescent, Kingsgrove, NSW, has been conducted.

The assessment has found that the proposal would satisfy the adopted noise trigger levels for operation noise and sleep disturbance impacts at residential and receivers for 24-hour operation. Daytime noise levels at adjoining industrial premises are predicted to be no greater than EPA recommended levels. No adverse off-site traffic noise or vibration impacts have been predicted.

The results of this assessment show that the proposed RRF could operate with minimal acoustic impacts to the surrounding environment. Initial noise compliance monitoring at adjoining industrial premises has been recommended.

In summary, the proposed RRF is predicted to comply with relevant guidelines, policies and criteria in relation to noise emission, noise intrusion and road traffic noise.

Based on the results of this assessment, it is our professional opinion that adoption of the recommendations within this report will result in compliance with noise conditions as may be incorporated in the project approval.

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1.0 INTRODUCTION

1.1 The Proposal

Spectrum Acoustics Pty Limited has been engaged by EMM Consulting to prepare an acoustic assessment of the proposed operation of a Resource Recovery Facility (RRF) on vacant industrial premises at 2F The Crescent, Kingsgrove, NSW, in an established industrial estate.

The assessment has been commissioned to satisfy the relevant Planning Secretary's Environmental Assessment Requirements (SEAR) 1270 as follows:

- **noise and vibration** – including:
  - a description of all potential noise and vibration sources during construction and operation, including road traffic noise
  - a noise and vibration assessment in accordance with the relevant Environment Protection Authority guidelines
  - a description and appraisal of noise and vibration mitigation and monitoring measures.

The project site and surrounding area are shown in **Figure 1**.

1.2 Project Description

The proposal would comprise the following:

- Vehicular access 5.8m wide
- Truck weighbridge 9.85m long x 3m wide
- Wheelwash rumble grate 3.39 m x 2.20 m
- A total of eleven (11) standard car parking spaces plus one (1) disabled parking space
- 2 storey brick building comprising a gate house, staff amenities and rest room, office, kitchen, shower and toilets
- Outdoor rest area adjacent to gatehouse
- Two 10,000L rainwater tanks (underground)
- Proposed sorting shed with an area of 1000m² and a proposed height from finished slab level of 8947mm. The sorting shed will contain a trommel and picking line and it is also proposed to house all material storage bays and material drop off and pick up areas.
- There are two yard areas – the eastern yard being for truck manoeuvring; the western yard is vacant other than staff and visitor parking bays.

The proposed hours of operations are as follows:

- Total Hours – Monday to Saturday 24 hours; Sunday and Public Holiday closed.
- Operations including receipt of material, processing and removal of material 6am to 5.30pm Monday to Saturday; Sundays and public holidays closed.

- Core operating time with maximum staff 7am – 3pm Monday to Saturday; Sunday and Public holidays closed.
- Operation outside of the 6am – 5.30pm Monday to Saturday operation of the proposal would comprise material drop off only.

1.3 Description of Terms

Table 1 contains the definitions of commonly used acoustical terms and is presented as an aid to understanding this report.

Table 1: Definition of acoustical terms

Term	Definition
dB(A)	The quantitative measure of sound heard by the human ear, measured by the A-Scale Weighting Network of a sound level meter expressed in decibels (dB).
SPL	Sound Pressure Level. The incremental variation of sound pressure above and below atmospheric pressure and expressed in decibels. The human ear responds to pressure fluctuations, resulting in sound being heard.
STL	Sound Transmission Loss. The ability of a partition to attenuate sound, in dB.
Lw	Sound Power Level radiated by a noise source per unit time re 1pW.
Leq	Equivalent Continuous Noise Level - taking into account the fluctuations of noise over time. The time-varying level is computed to give an equivalent dB(A) level that is equal to the energy content and time period.
L1	Average Peak Noise Level - the level exceeded for 1% of the monitoring period.
L10	Average Maximum Noise Level - the level exceeded for 10% of the monitoring period.
L90	Average Minimum Noise Level - the level exceeded for 90% of the monitoring period and recognised as the Background Noise Level. In this instance, the L90 percentile level is representative of the noise level generated by the surrounds of the residential area.

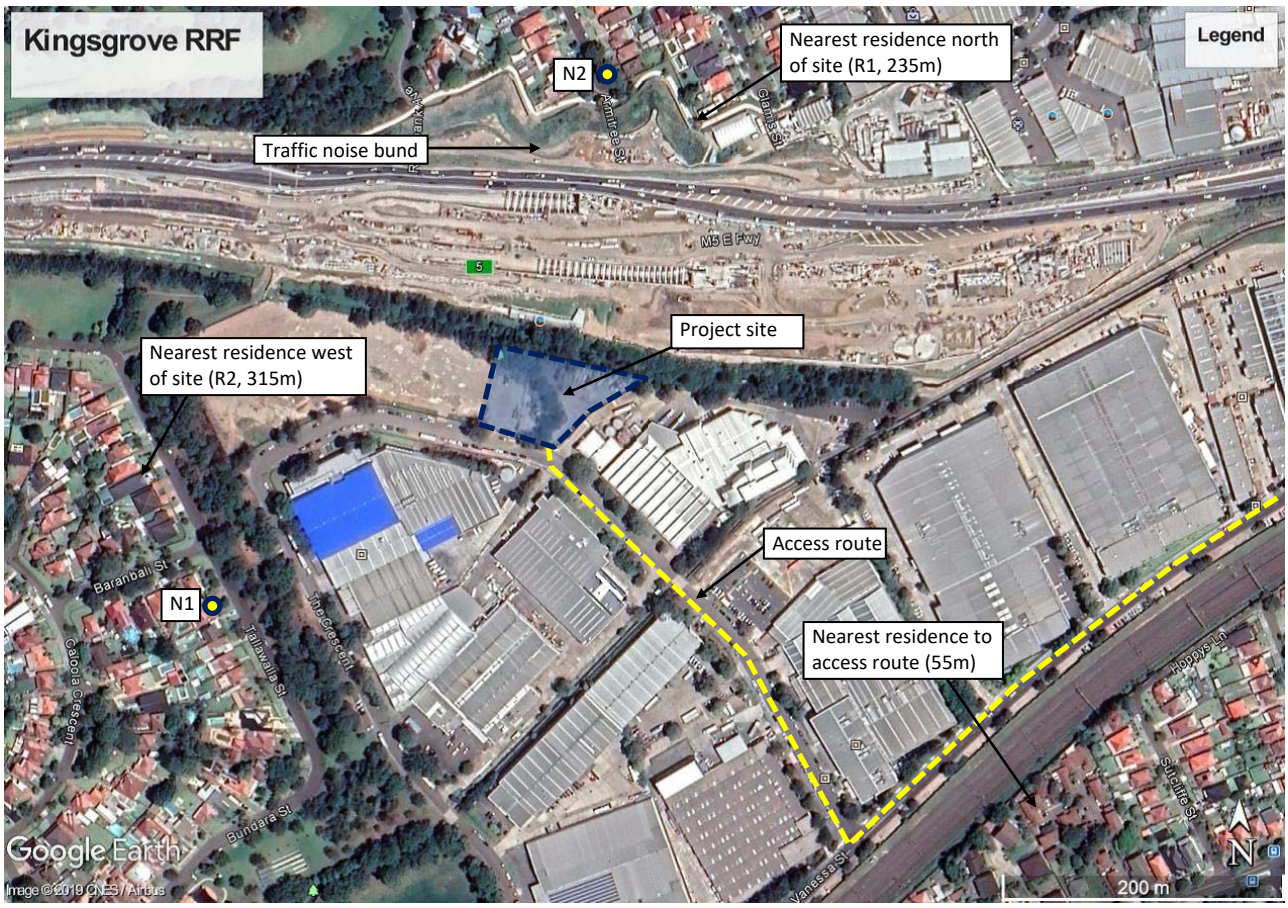


Figure 1: Site locality and surrounding landuses.

2.0 NOISE AND VIBRATION CRITERIA

2.1 Ambient Noise Levels

Ambient noise monitoring was conducted at two locations by EMM Consulting with the data charts and summaries provided for use in this assessment. The measurements were conducted in accordance with relevant EPA guidelines and *AS 1055-1997 Acoustics – Description and Measurement of Environmental Noise*. The noise loggers used comply with the requirements of *AS 1259.2-1990 Acoustics – Sound Level Meters*, and have current NATA calibration certification.

The loggers were programmed to continuously register environmental noise levels over the 15 minute intervals, with internal software calculating and storing Ln percentile noise levels for each sampling period. Calibration of the loggers was performed as part of the instruments' initialisation procedures, with calibration results being within the allowable ± 0.5 dB(A) range. The loggers were located at residential locations N1 (119 Tallawalla Street) and N2 (106 Armitree Street) as shown in Figure 1.

Ambient L_{Aeq} and background (L_{A90}) noise levels obtained from the loggers are summarised below in **Table 2** and shown graphically in **Appendix A**. Table 1 includes the rating background levels (RBL, L90) and the Leq over the full day (11 hour, 7am-6pm), evening (4 hour, 6pm-10pm) and night (9 hour, 10pm-7am) periods, determined in accordance with Fact Sheet A of the NSW Noise Policy for Industry (2017) (NPI).

Table 2: Measured ambient noise levels

Location	Day	Evening	Night
119 Tallawalla St (N1)	43 dB(A) L90	42 dB(A) L90	39 dB(A) L90
	58 dB(A) Leq (11hr)	54 dB(A) Leq (4hr)	49 dB(A) Leq (9hr)
106 Armitree St (N2)	43 dB(A) L90	41 dB(A) L90	38 dB(A) L90
	57 dB(A) Leq (11hr)	53 dB(A) Leq (4hr)	46 dB(A) Leq (9hr)

2.2 Noise criteria

2.2.1 Residential receivers

Noise from the proposed introduction of the RRF within the existing industrial area has been assessed as an industrial noise source against the requirements of the NPI.

In setting noise goals for a particular project, the NPI considers both amenity and intrusiveness noise trigger levels. The former is set to limit continuing increase in noise from industry, whilst the latter is set to minimise the intrusive impact of a particular noise source.

Application of the definitions and procedures in Sections 2.3 and 2.4 of the INP, for urban residential receivers, gives the project amenity and intrusive noise levels in Table 3. The lower of the two values for each period are adopted as the project noise trigger levels and are shown in bold type.

Table 3: Project noise trigger levels, dB(A),Leq(15min)

Location	Level	Day	Evening	Night
(N1)	Amenity	60 – 2 = 58	50 – 2 = 48	45 – 2 = 43
	Intrusive	43 + 5 = 48	42 + 5 = 47	39 + 5 = 44
	Project	**48**	**47**	**43**
(N2)	Amenity	60 – 2 = 58	50 – 2 = 48	45 – 2 = 43
	Intrusive	43 + 5 = 48	41 + 5 = 46	38 + 5 = 43
	Project	**48**	**46**	**43**

2.2.2 Industrial receivers

Section 2.4, Table 2.2, of the NPI recommends noise levels from industrial sources should not exceed an amenity level of 70 dB(A) at other industrial premises when those premises are in use.

2.2.3 Sleep disturbance

There would be receival and processing of material outside standard daytime hours and short term impact noises would occur. These impacts may disturb sleep at residential receivers, and Section 2.5 of the NPI requires these impacts to be assessed against a maximum noise level criterion of "L_{AFmax} 52 dB(A) or the prevailing RBL plus 15 dB, whichever is the greater".

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

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

a detailed maximum noise level event assessment should be undertaken.

The detailed assessment should cover the maximum noise level, the extent to which the maximum noise level exceeds the rating background noise level, and the number of times this happens during the night-time period. Some guidance on possible impact is contained in the review of research results in the NSW Road Noise Policy (2012).

Based on the measured night time background noise levels, a further assessment trigger level of **52 dB(A),Lmax** applies.

2.2.4 Road Traffic

In NSW, noise from vehicle movements on public roads associated with an industrial source is assessed in terms of the NSW *Road Noise Policy* (RNP, 2012). The RNP recommends various criteria based on the functional categories of roads applied by the Roads and Maritime Services (RMS). The RMS differentiates roads based on a number of factors including traffic volume, heavy vehicle use, through or local traffic, vehicle speeds and applicable traffic management options.

Table 4 shows the noise criteria relevant to traffic on sub-arterial roads extracted from Table 1 of the RNP. For the assessment of traffic noise, the day time period is from 7am to 10pm, whilst night is from 10pm to 7am.

Table 4: Road traffic noise criteria

Situation	Recommended Criteria	
	Day (7am to 10pm)	**Night (10pm to 7am)**
3. Existing residences affected by additional traffic on existing sub-arterial roads generated by land use developments	Leq (1hr) 60 (external)	Leq (1hr) 55 (external)

Vehicles accessing the site will do so via The Crescent, Vanessa Street and Kingsgrove Road. A Traffic Management Plan will be implemented, forbidding heavy vehicles associated with the site from travelling on Vanessa Street, west of The Crescent, and passing within 15m of residences.

The maximum project generated traffic levels would be only 40 heavy vehicle and eight light vehicle movements per day. As shown in Figure 1, the nearest residences to the access route are at a distance of over 50m away, across a significant rail corridor. There is a substantial acoustic barrier along the southern side of the rail corridor. This separation distance and acoustic barrier will provide ample acoustic screening of the small number of heavy vehicles associated with the proposal such that the criteria in Table 2 will be easily achieved and full quantitative assessment of potential impacts is not warranted.

Vanessa Street joins Kingsgrove Road, which has daily traffic volume (AADT) in excess of 25,000 vehicles per day. The introduction of such a small number of trucks from the proposal will have negligible impact on existing traffic noise levels and full quantitative assessment of potential noise impacts is not warranted.

2.2.5 Vibration

The EPA (then DEC) document *Assessing Vibration: A Technical Guideline* (2006) provides criteria for the evaluation of human exposure to vibration in buildings. The preferred assessment criteria for continuous sources such as trommels and screens are 0.14 mm/s (night) at residential receivers and 0.8 mm/s at nearby workshops. Impacts such as unloading of waste material from trucks should not exceed 2.0 mm/s (night) at residential receivers and 13.0 mm/s at nearby workshops.

With the residential receivers being more than 200m from the site, there is no potential for adverse vibration impacts on these receivers. There would be no pile driving in the construction process and minimal potential to impact on nearby workshops.

Given the distance to residences and the general absence of significant vibration sources, a quantitative assessment of vibration impacts is not considered necessary.

3.0 RESULTS AND RECOMMENDATIONS

3.1 Noise Emissions

3.1.1 Sound power levels

Table 5 shows the plant items provided by the proponent and sound power levels sourced from the Spectrum Acoustics database of previous measurements at a Solo Waste recycling facility or online databases. **Figure 2** shows the various source locations within the sorting shed. The locations are considered generic or typical of the source distribution for noise prediction purposes.

Sound power testing methods usually have plant items operating at high or maximum revs for maximum noise emission. The assessment criterion is a geometric mean of a 15 minute period and mobile machinery will typically operate at a range of settings between low and high idle and only rarely would all proposed machinery be operating at the same time.

Table 5: Sound power levels of proposed equipment, dB(A)

Plant item	Lw, dB(A)
Excavator JCB – JS 130 LC (handling metal)	108
Wheel loader JCB – 417 H (handling rubble)	105
Skid steer loader JCB – 225	101
Portafill Screen 5000 CT	98
Trommel, 10mm aperture, direct on line	108
Light waste blower	102
Soil and rubble conveyors (each, including drive)	96
Picking line conveyor (including drive)	96
Truck arrival and departure (Leq(15min))	98
Truck unload rubble or metal (Leq / Lmax)	107 / 121

When in use, the screen could operate continuously for a full 15 minutes. The noise impact assessment for residential receivers conservatively assumes all plant items in Table 5 will operate for a full 15 minute period and the road truck is operating for five minutes per 15 minute period.

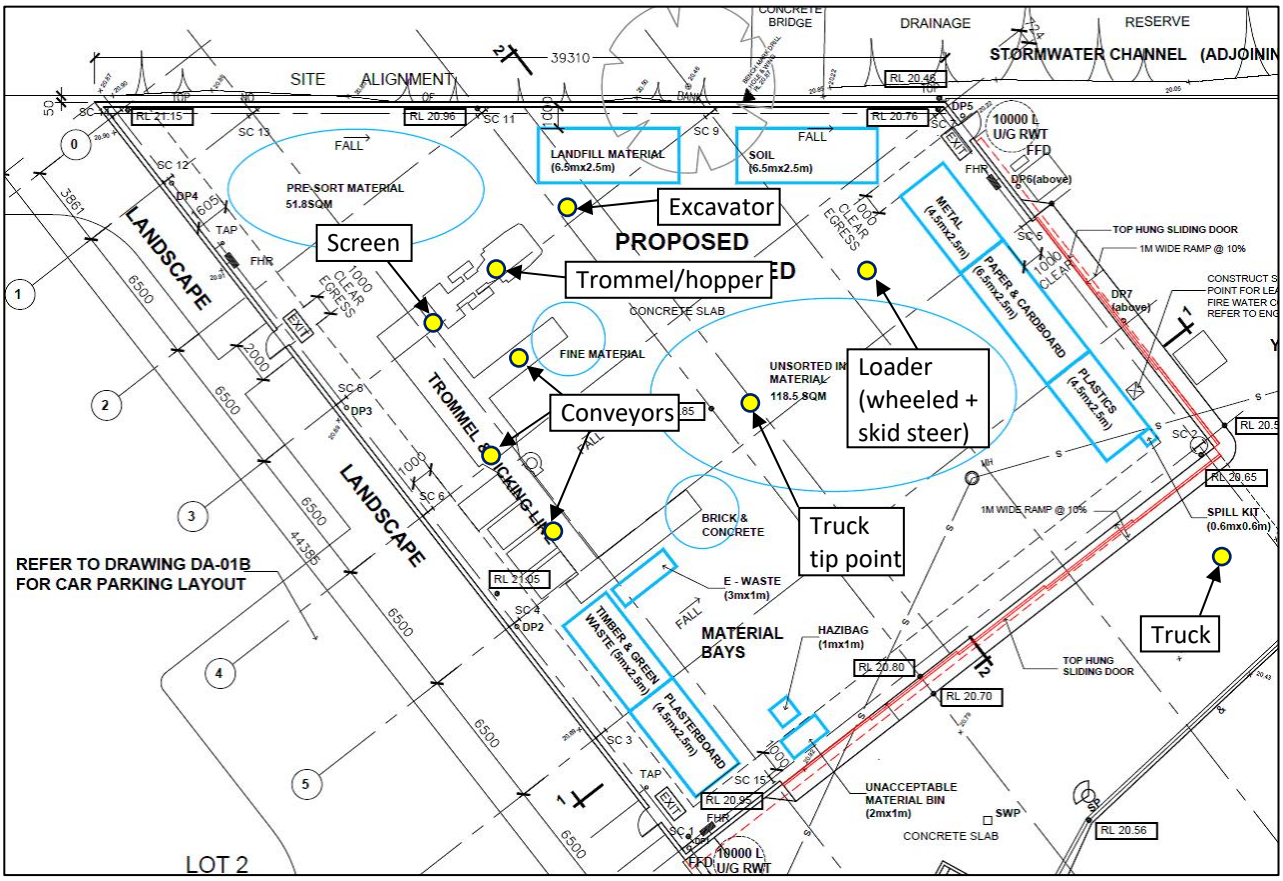


Figure 2: Noise source locations.

3.1.2 Predicted noise levels

Predicted daytime/evening operational noise impacts at the two representative residential receivers are shown in **Table 6**.

Table 6: Calculated day/evening operational noise levels, dB(A),Leq(15min)

Propagation element	R1	R2
Sound power level, dB(A),Leq(15min)	113	113
Loss over/around pre-fab shed*	-12	-15
Barrier loss** (off-site bunds/buildings)	-5	-8
Distance loss (235/315m)	-55	-58
Received SPL	41	32
Lowest Day/Evening noise trigger level	47	46
Exceedance / differential	-6	-13
* Conservative estimation based on 4m high with no roof, partially open as indicated in Figure 2. ** Noise and Vibration Control, L.L. Beranek (ed) McGraw-Hill 1971, pp. 174-177		

Table 6 shows that predicted noise levels from the operation of the RRF are below the project noise trigger levels at the most potentially impacted residential receivers.

Predicted night time operational noise impacts at the two residential receivers are shown in **Table 7**. Noise sources inside and outside the sorting shed are assessed separately and the resultant noise impacts at the receivers are added together.

Table 7: Calculated night time operational noise levels, dB(A),Leq(15min)

Propagation element (inside / outside shed)	R1	R2
Sound power level, dB(A),Leq(15min)	107 / 98	107 / 98
Loss over/around pre-fab shed*	-12 / 0	-15 / -15
Barrier loss** (off-site bunds/buildings)	-5	-10
Distance loss (235/315m)	-55	-58
Received SPL (inside / outside)	35 / 38	24 / 15
Received SPL (Total)	40	24
Night time operational noise trigger level	43	43
Exceedance / differential	-3	-19
* Conservative estimation based on 4m high with no roof, partially open as indicated in Figure 2. ** Noise and Vibration Control, L.L. Beranek (ed) McGraw-Hill 1971, pp. 174-177		

Table 7 shows that predicted noise levels from the operation of the RRF are significantly below the night time intrusiveness criterion at the most potentially impacted residential receivers.

The average distance from operational noise sources in Figure 2 to a point inside the boundary of the adjoining Allied Mills industrial premises is 40m. The worst case daytime sound power level of 113 dB(A),Leq(15min) in Table 6 for all sources operating simultaneously and continuously can reasonably be approximated as 110 dB(A),Leq(day) for assessment of potential daytime amenity impacts. The predicted noise level at Allied Mills is 70 dB(A) which does not exceed the NPI trigger level.

3.1.3 Sleep disturbance

Predicted sleep disturbance impacts at the two representative residential receivers are shown in **Table 8**.

Table 8: Calculated maximum noise levels, dB(A),Lmax

Propagation element	R1	R2
Sound power level, dB(A),Lmax	121	121
Loss over/around pre-fab shed*	-12	-15
Barrier loss** (off-site bunds/buildings)	-5	-8
Distance loss (235/315m)	-55	-58
Received SPL	49	40
Sleep disturbance criterion	52	52
Exceedance / differential	-3	-12
* Conservative estimation based on 5m high with no roof, partially open as indicated in Figure 2. ** Noise and Vibration Control, L.L. Beranek (ed) McGraw-Hill 1971, pp. 174-177		

Table 8 shows that predicted maximum noise levels from tipping of rubble or metals within the RRF are below the night time sleep disturbance noise trigger level at the most potentially impacted residential receivers.

Because neither the night time operational nor maximum noise trigger level is predicted to be exceeded, further assessment of maximum noise impacts at residential receivers is not required.

3.2 Noise Monitoring

The predicted noise levels at residential receivers suggest minimal potential for adverse noise impacts. Noise levels at an adjoining industrial site are equal to the EPA recommended noise level. Where predicted noise levels are greater than a level 5 dB below an NPI trigger level, noise monitoring is often recommended to either confirm compliance with the noise limits set in the project approval, or to identify any required noise mitigation. The monitoring results are documented in a compliance report as is often required in the Environment Protection Licence (EPL).

It is recommended that once the RRF is fully operational, a consent condition should require initial noise monitoring to confirm compliance with the project noise trigger level for industrial receivers. Noise monitoring should not be required on a continuing basis if the initial measurement of full operation confirms compliance.

APPENDIX A

NOISE LOGGER DATA

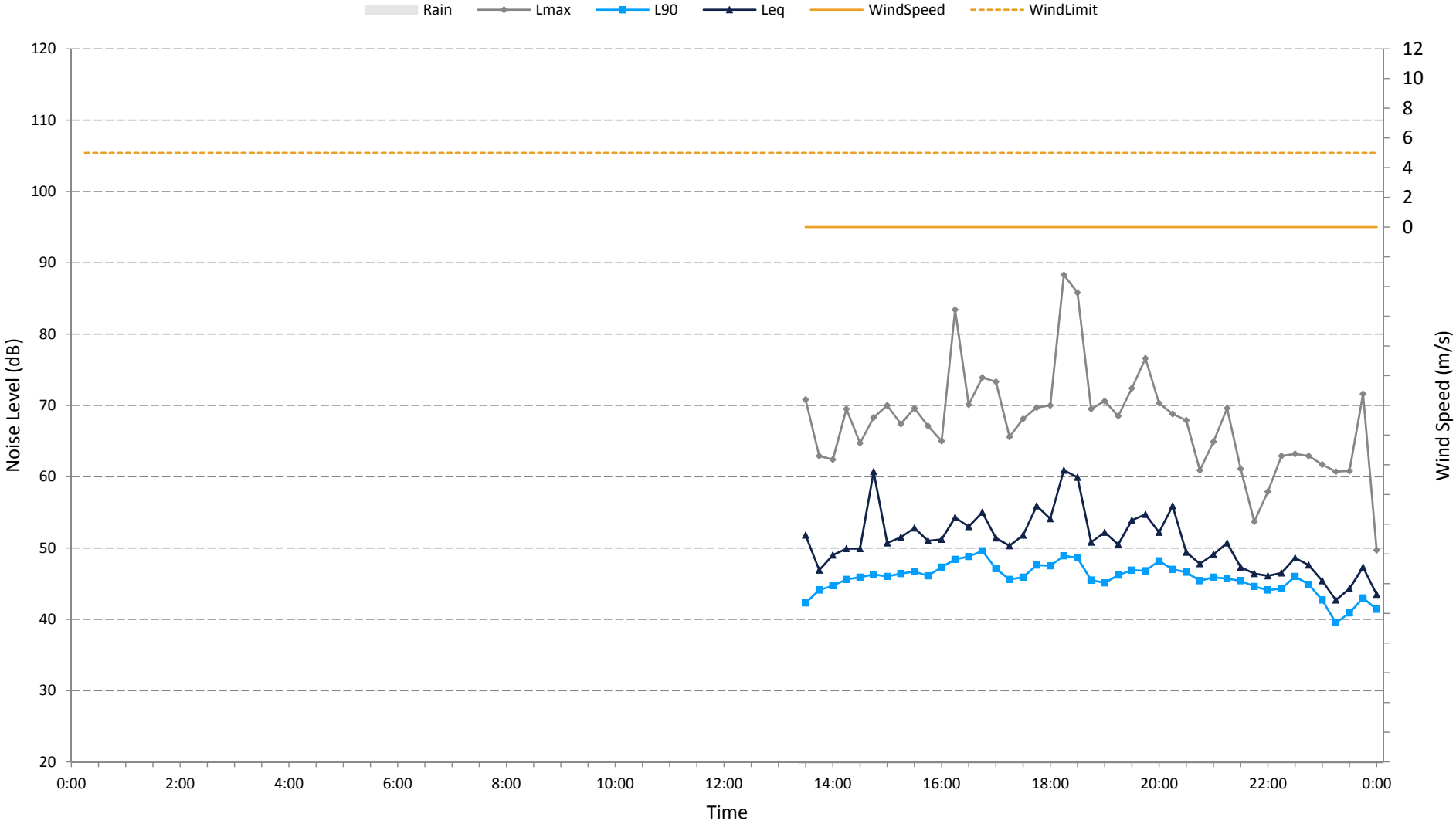
Date	ABL Day	ABL Evening	ABL Night	Leq 11hr Day	Leq 4hr Evening	Leq 9hr Night	Leq 15hr Day	Leq 24hr Day	Leq 8hr
Tuesday, 05-03-19	0	44.6	38.5	0	54.2	46.5	0	0	44.9
Wednesday, 06-03-19	44	41.2	35.5	56.2	52.1	46.2	55.5	53.7	45.1
Thursday, 07-03-19	43.7	41.5	35.3	50.9	49.2	46.6	50.5	49.4	43.1
Friday, 08-03-19	44.3	43.7	38.6	53.8	51.4	45.8	53.3	51.7	45.4
Saturday, 09-03-19	40.7	38.9	37.6	54.4	48	43.9	53.4	51.6	43.4
Sunday, 10-03-19	38.9	42.1	40.1	47.9	50	46.4	48.6	47.9	45.8
Monday, 11-03-19	42.9	42.7	39.7	50.6	49.9	46.4	50.5	49.3	45.5
Tuesday, 12-03-19	42.4	42	40.4	51.6	51.5	49.8	51.5	51	46.9
Wednesday, 13-03-19	41.9	41.9	39.4	52.3	48.9	47.1	51.6	50.4	46.3
Thursday, 14-03-19	45.1	44.1	39.7	64.7	63.3	47	64.4	62.4	45.8
Friday, 15-03-19	45.8	42.8	38.2	54.7	50	50.2	53.9	52.8	50.4
Saturday, 16-03-19	42.9	42.2	37.3	56.8	52.7	54.5	56	55.5	54.9
Sunday, 17-03-19	46	43.8	39.1	63.1	50.7	47	61.8	59.9	46.1
Monday, 18-03-19	42.1	40.6	37.4	52.6	51.3	52.9	52.3	52.5	53
Tuesday, 19-03-19	0	0	0	0	0	0	0	0	0
Summary Values	42.9	42.2	38.6	57.6	54.3	49	57	55.3	48.6

Notes:

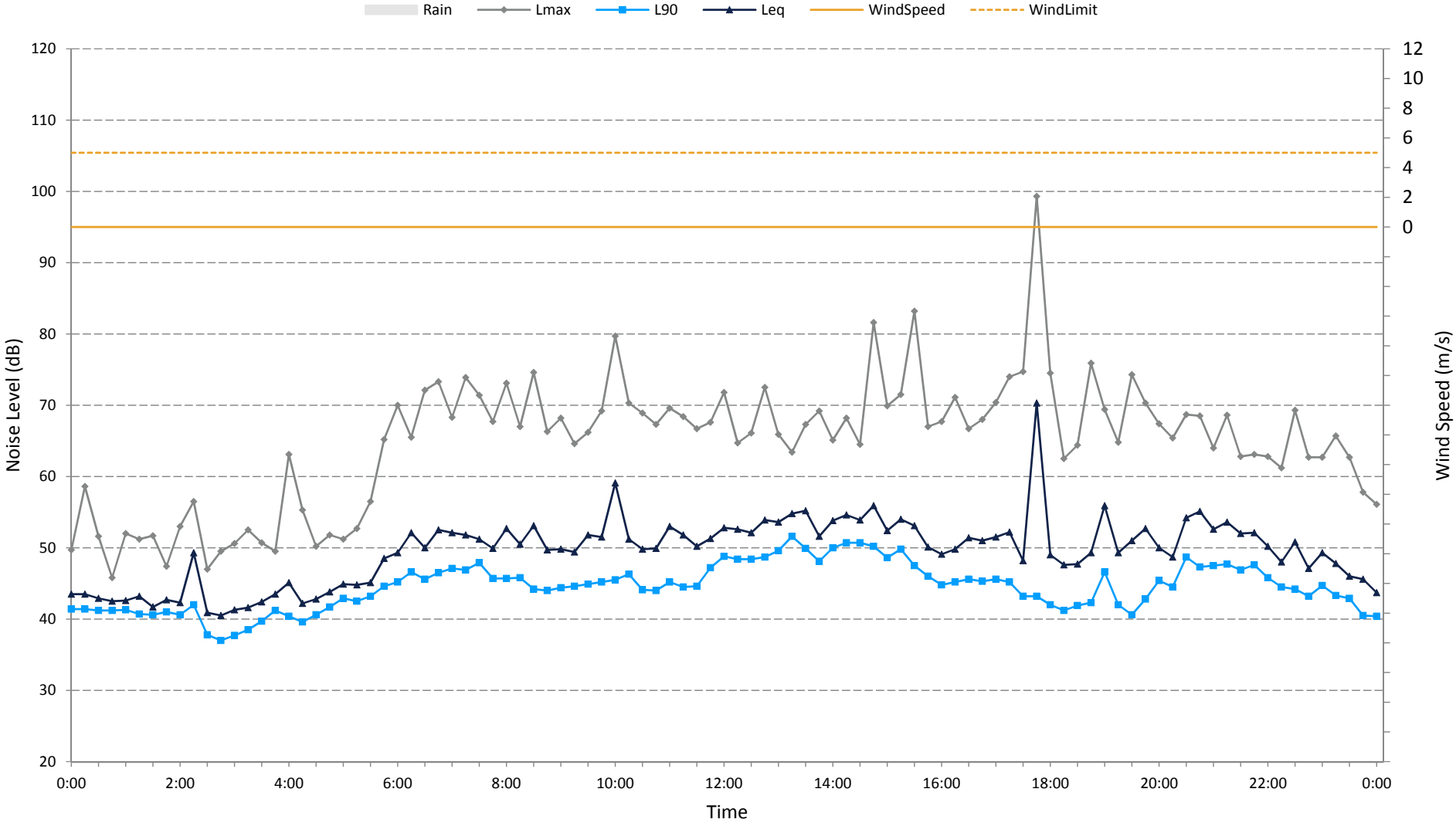
0 indicates periods with too few valid samples due to weather or logger operation

Leq24hr encompasses the period 7am to 7am

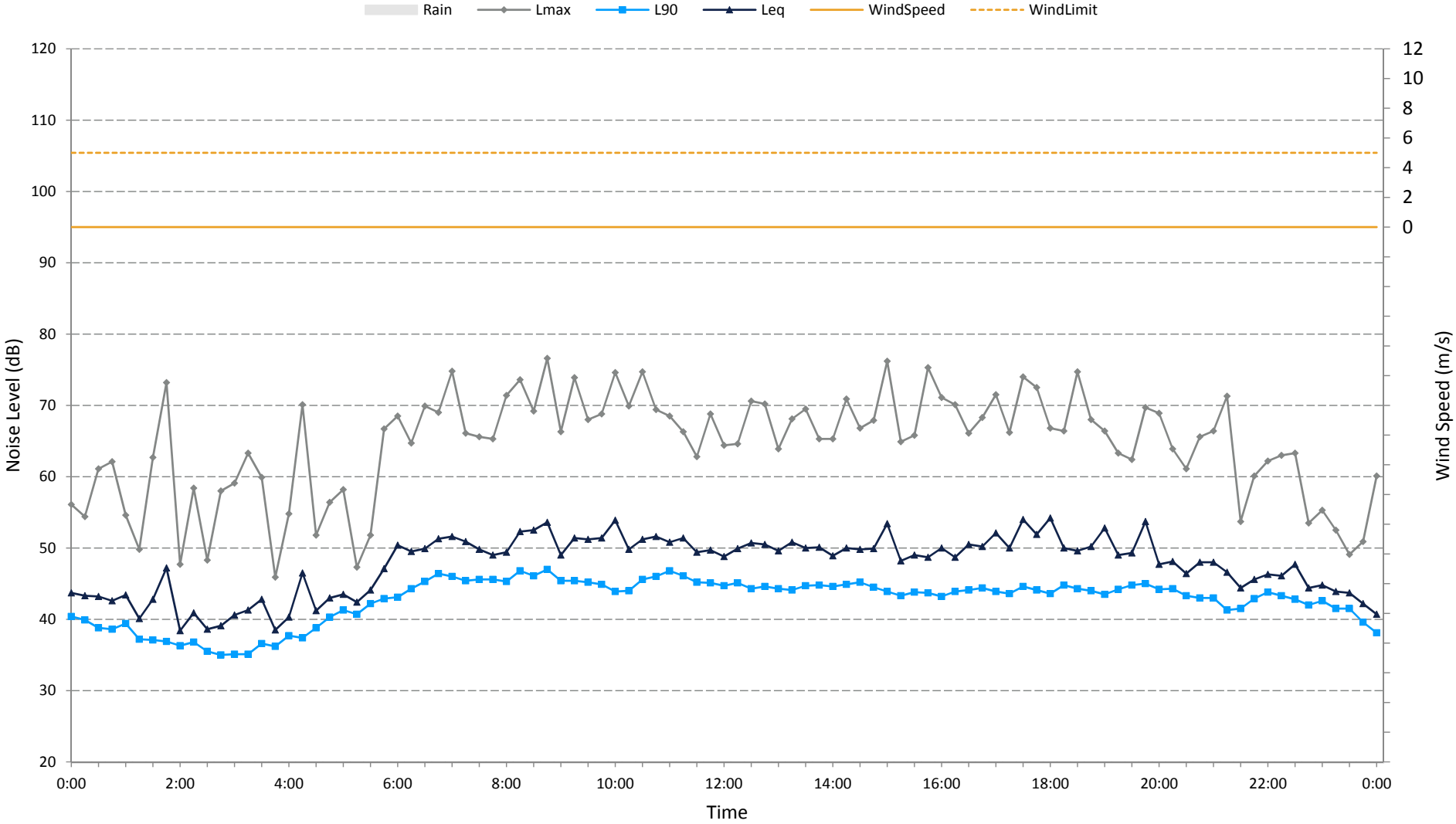
Measured ambient noise levels
119 Tallawalla St, Kinsgrove
Tuesday, 05-03-19



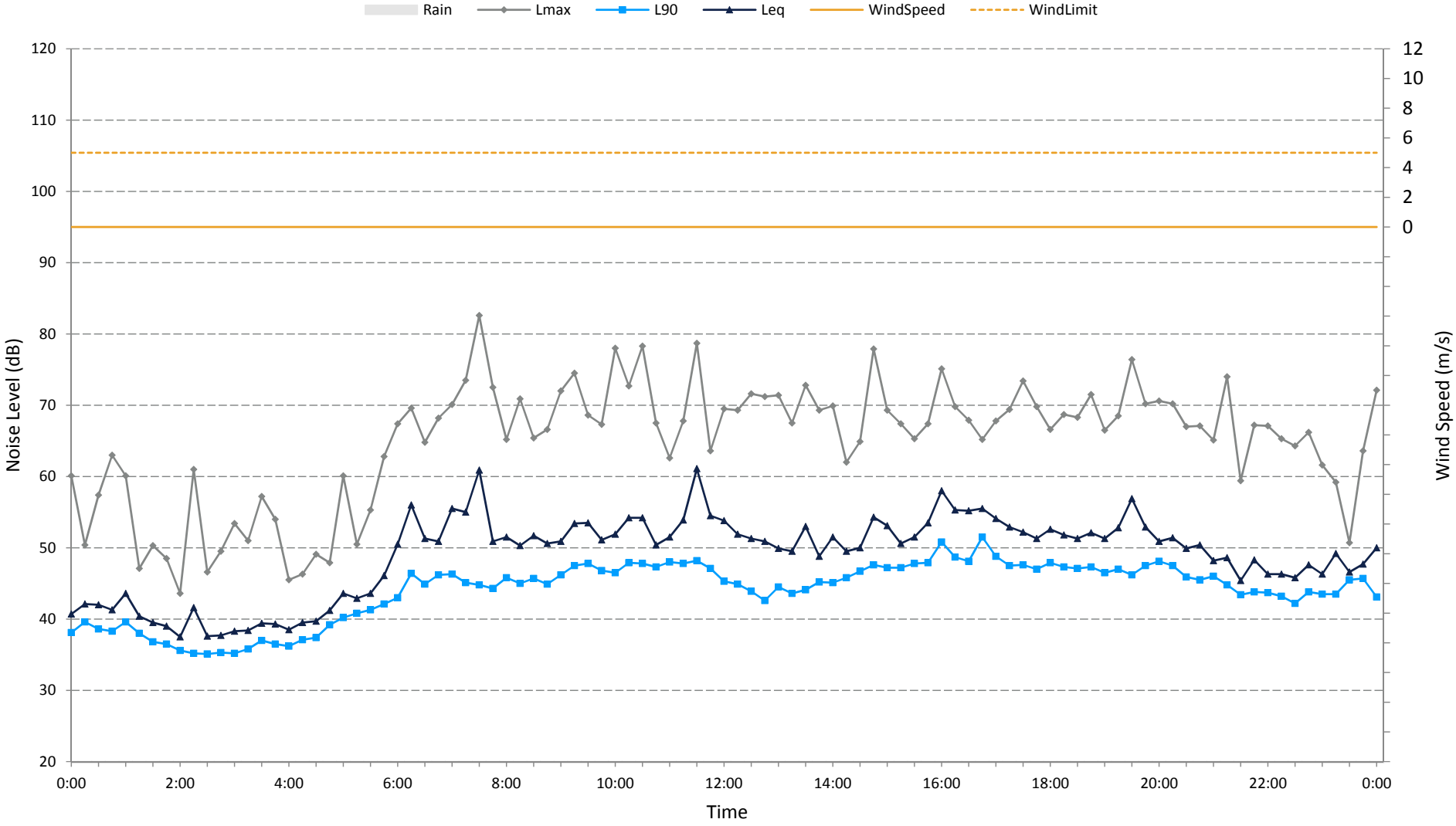
Measured ambient noise levels
119 Tallawalla St, Kinsgrove
Wednesday, 06-03-19



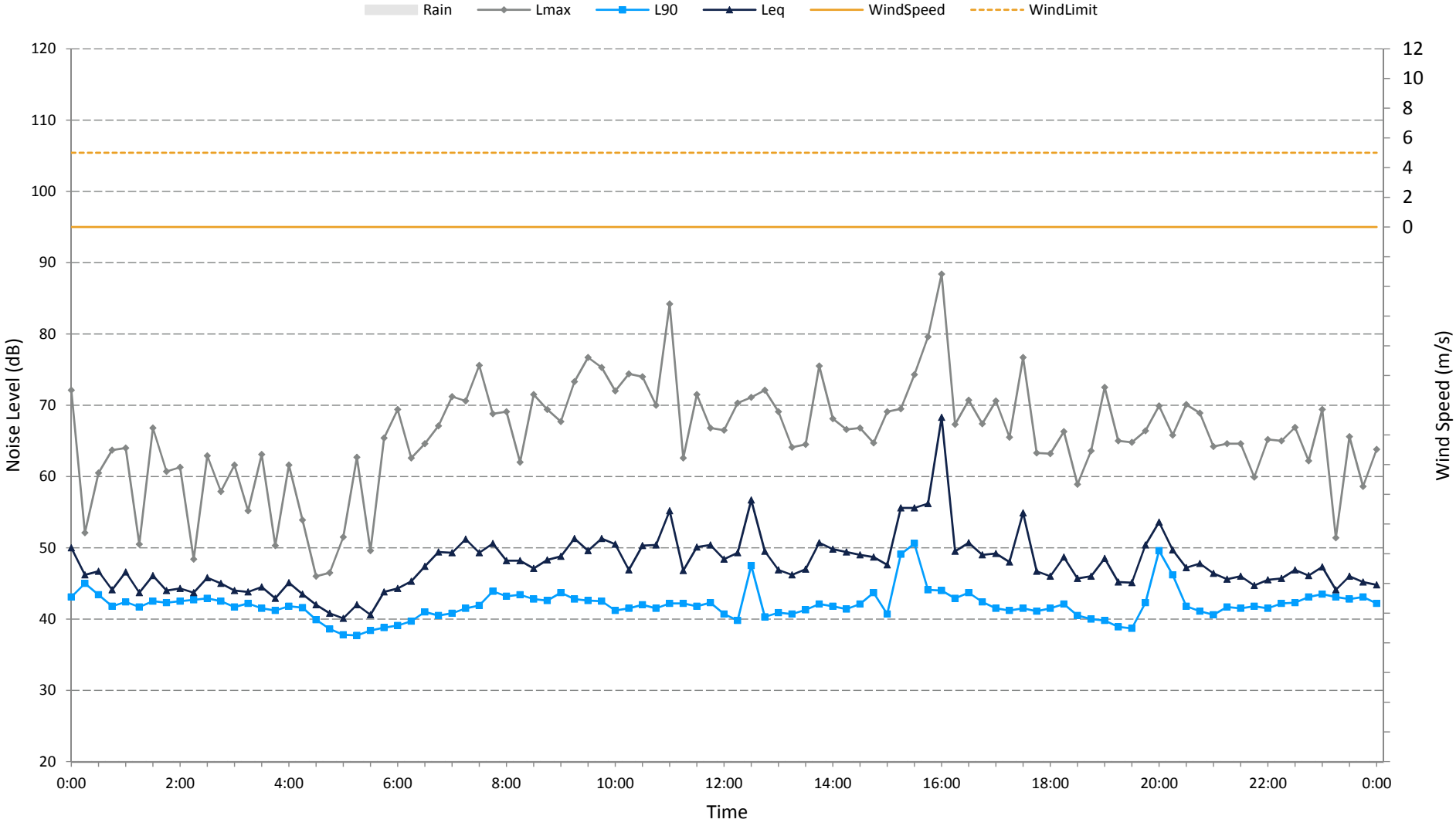
Measured ambient noise levels
119 Tallawalla St, Kinsgrove
Thursday, 07-03-19

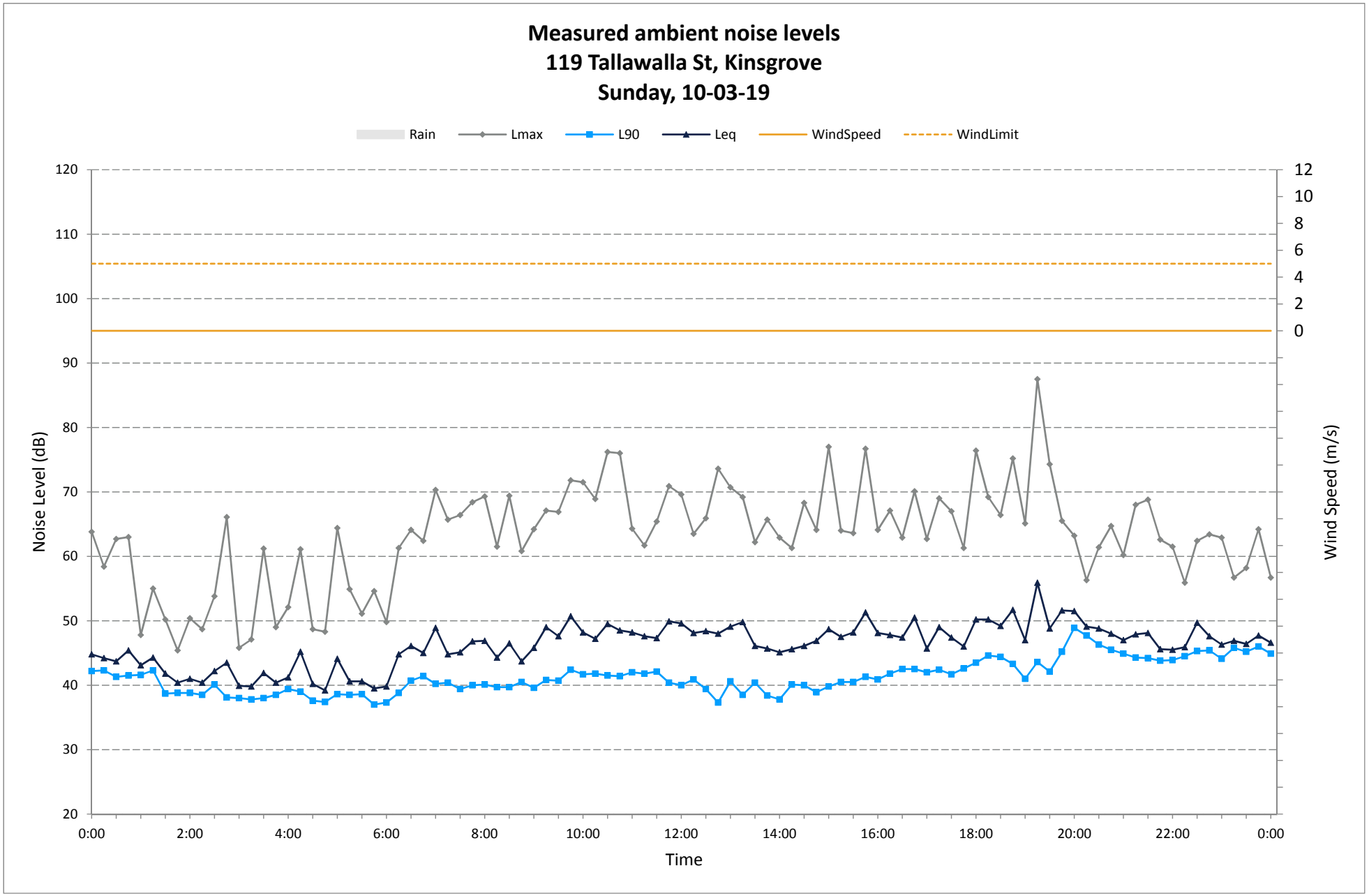


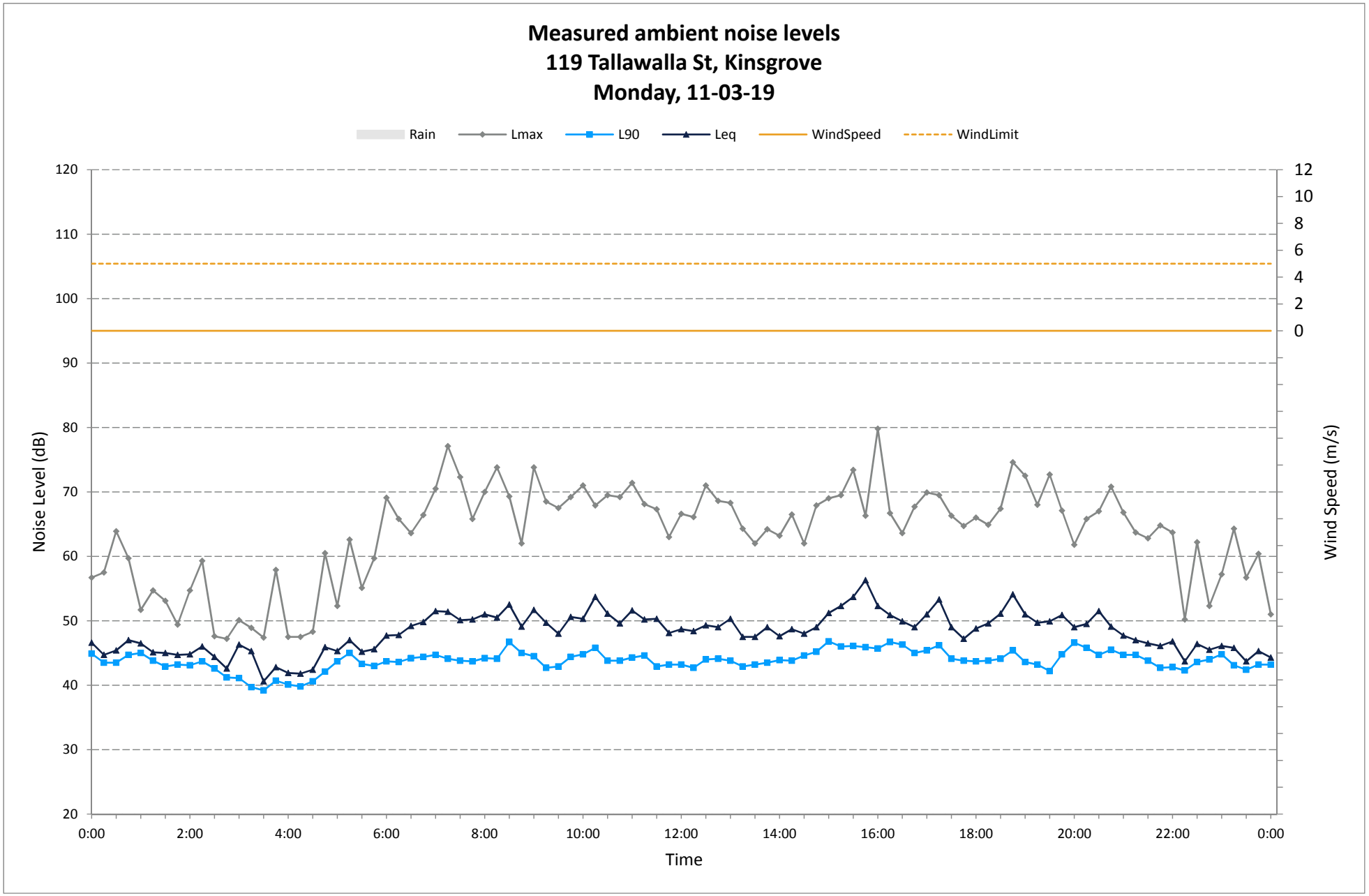
Measured ambient noise levels
119 Tallawalla St, Kinsgrove
Friday, 08-03-19



Measured ambient noise levels
119 Tallawalla St, Kinsgrove
Saturday, 09-03-19




Measured ambient noise levels
119 Tallawalla St, Kinsgrove
Sunday, 10-03-19
Rain
Lmax
L90
Leq
WindSpeed
WindLimit
Noise Level (dB)
Wind Speed (m/s)
Time
120
110
100
90
80
70
60
50
40
30
20
12
10
8
6
4
2
0
0:00
2:00
4:00
6:00
8:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00
0:00


Measured ambient noise levels
119 Tallawalla St, Kinsgrove
Monday, 11-03-19
Rain
Lmax
L90
Leq
WindSpeed
WindLimit
Noise Level (dB)
Wind Speed (m/s)
Time
120
110
100
90
80
70
60
50
40
30
20
12
10
8
6
4
2
0
0:00
2:00
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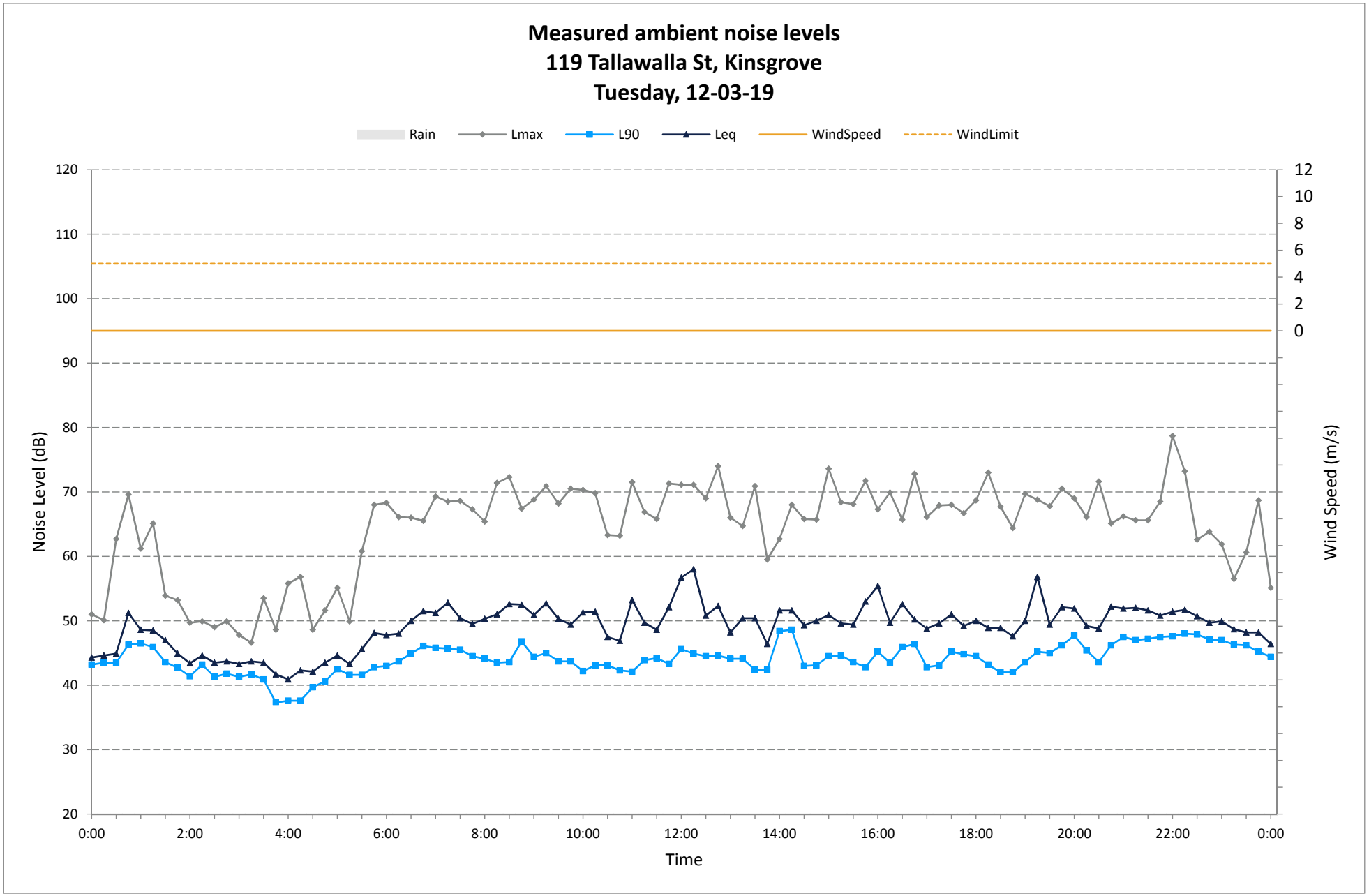
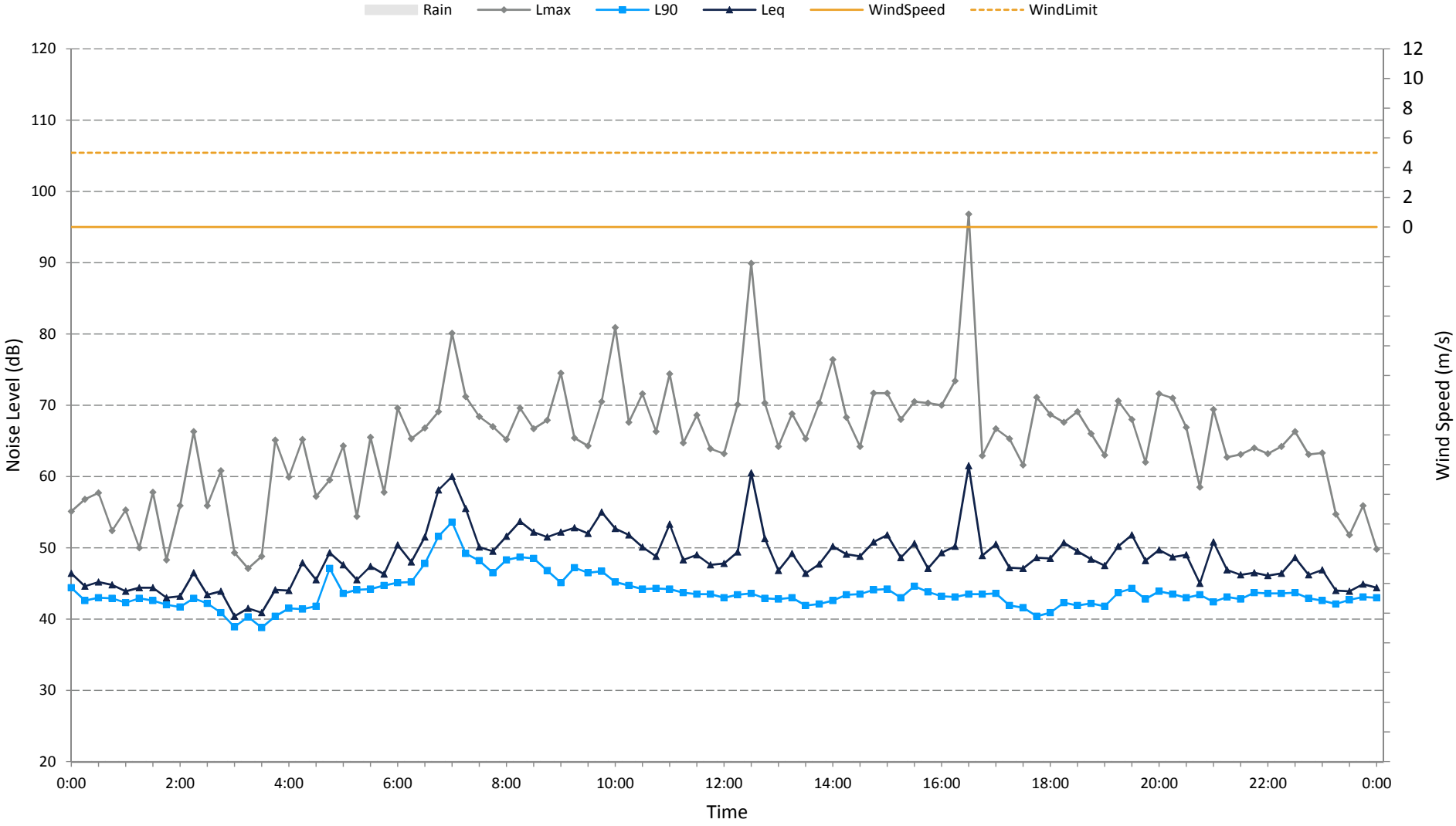
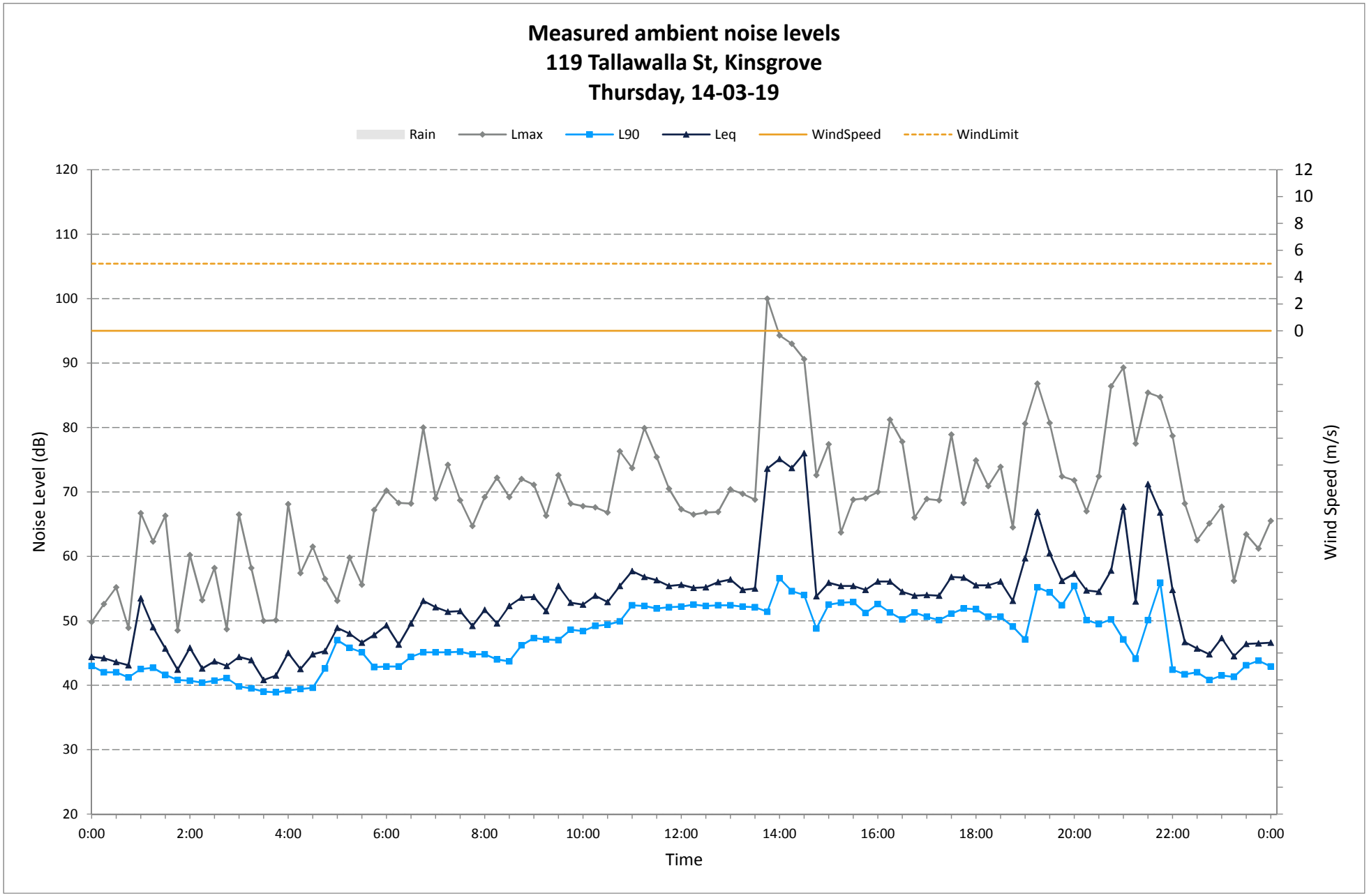
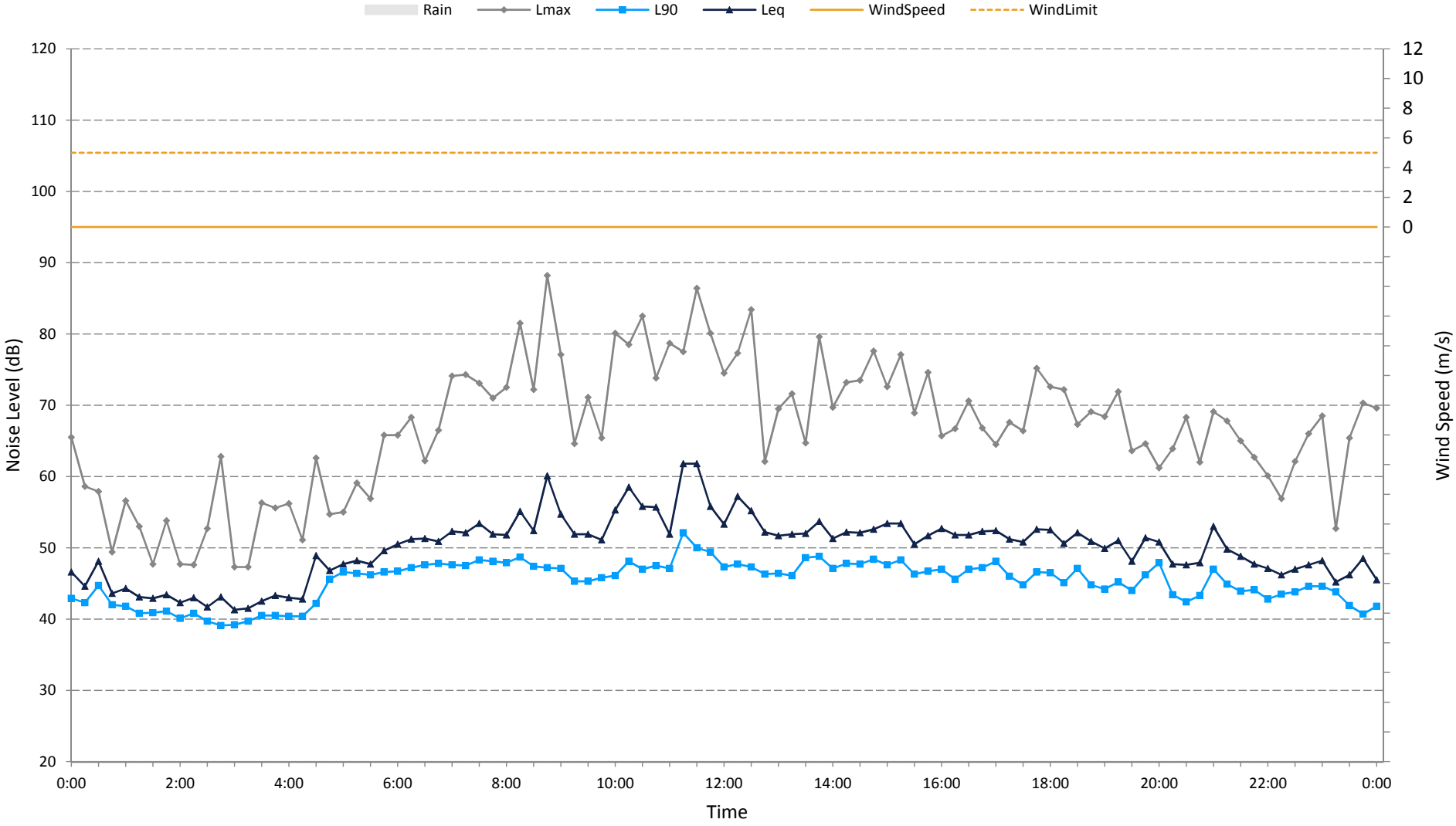

Measured ambient noise levels
119 Tallawalla St, Kinsgrove
Tuesday, 12-03-19
Rain
Lmax
L90
Leq
WindSpeed
WindLimit
Noise Level (dB)
Wind Speed (m/s)
Time
120
110
100
90
80
70
60
50
40
30
20
12
10
8
6
4
2
0
0:00
2:00
4:00
6:00
8:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00
0:00

Measured ambient noise levels
119 Tallawalla St, Kinsgrove
Wednesday, 13-03-19

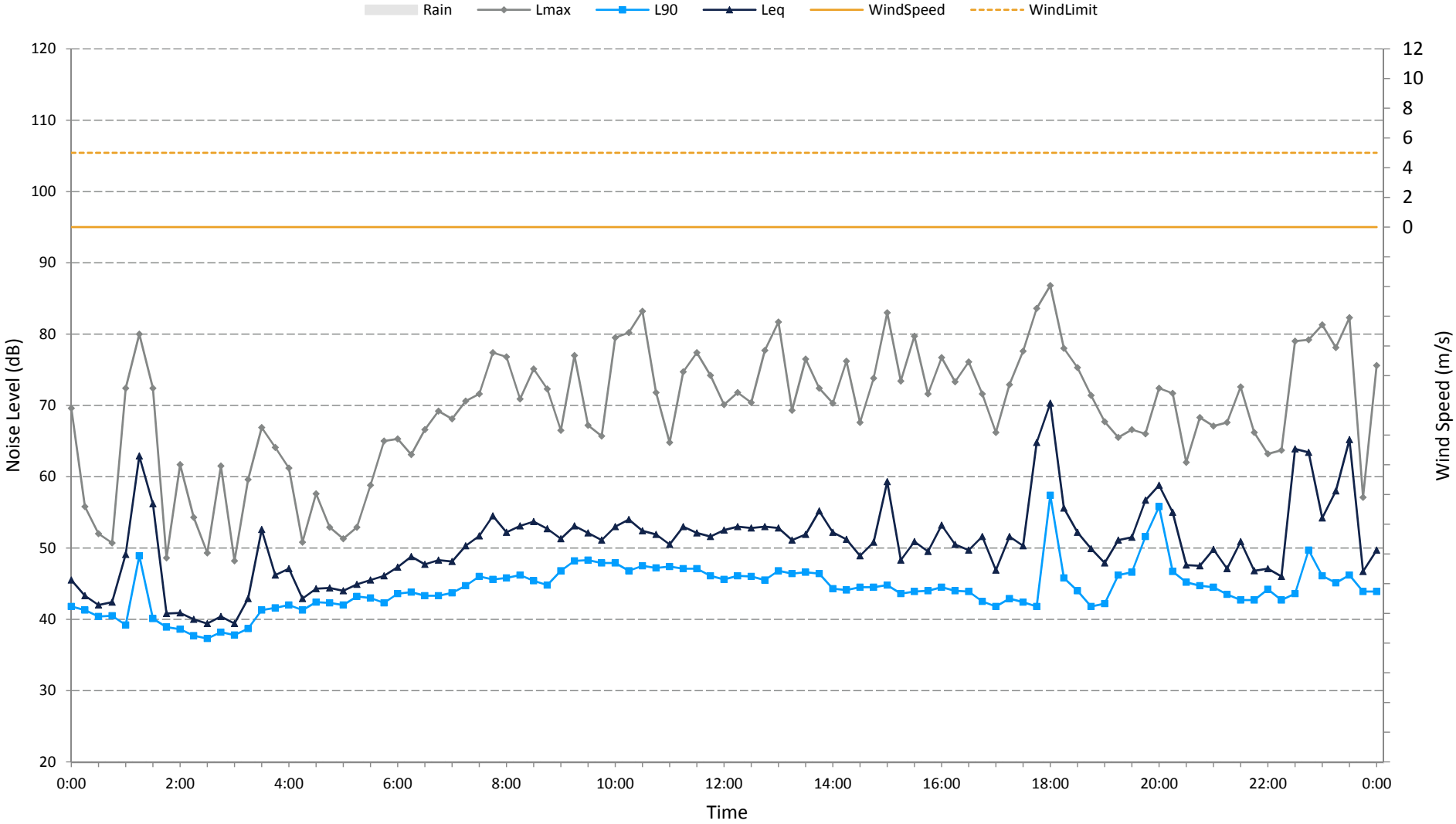



Measured ambient noise levels
119 Tallawalla St, Kinsgrove
Thursday, 14-03-19
Rain
Lmax
L90
Leq
WindSpeed
WindLimit
Noise Level (dB)
Wind Speed (m/s)
Time
120
110
100
90
80
70
60
50
40
30
20
12
10
8
6
4
2
0
0:00
2:00
4:00
6:00
8:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00
0:00

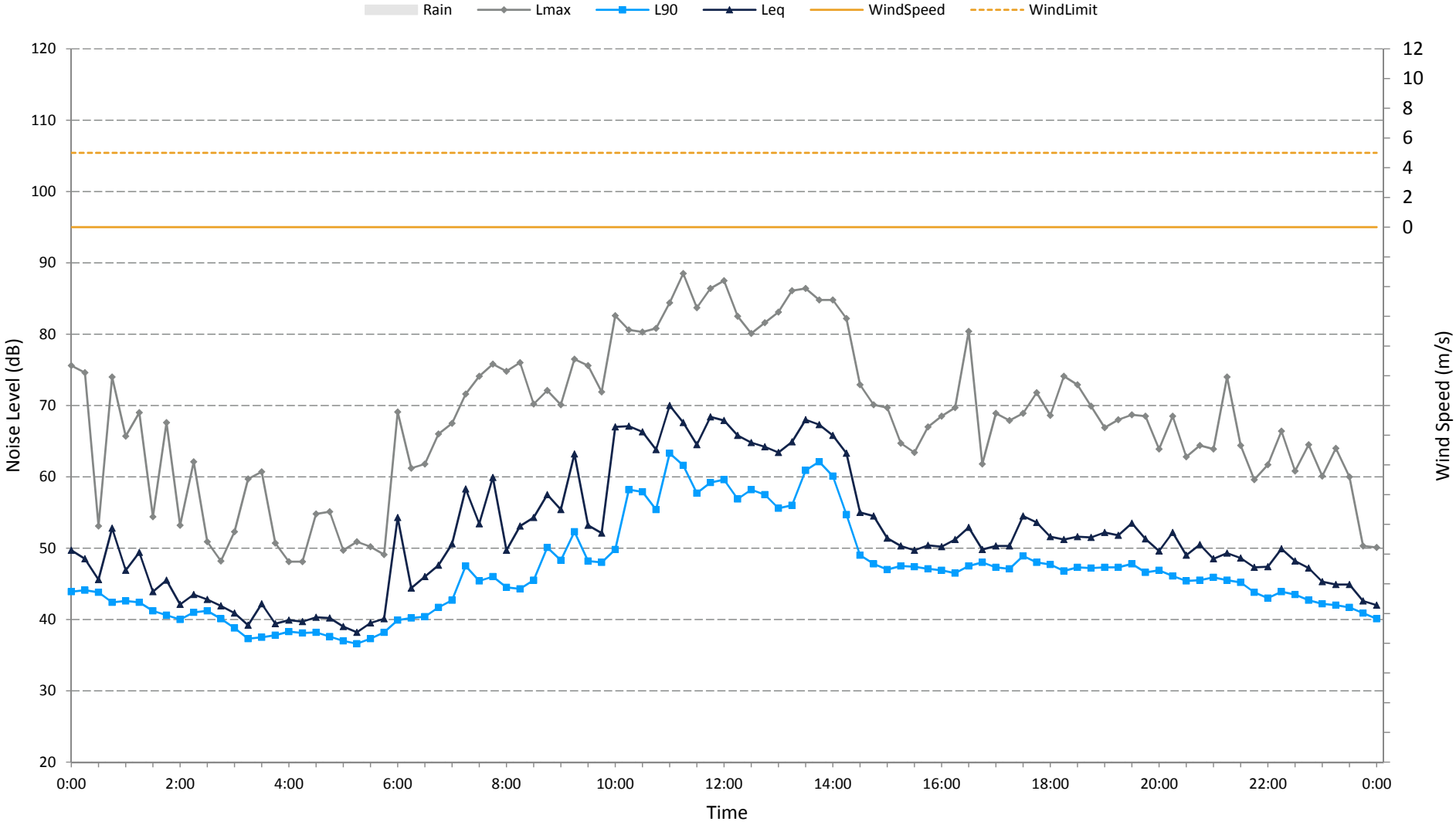
Measured ambient noise levels
119 Tallawalla St, Kinsgrove
Friday, 15-03-19



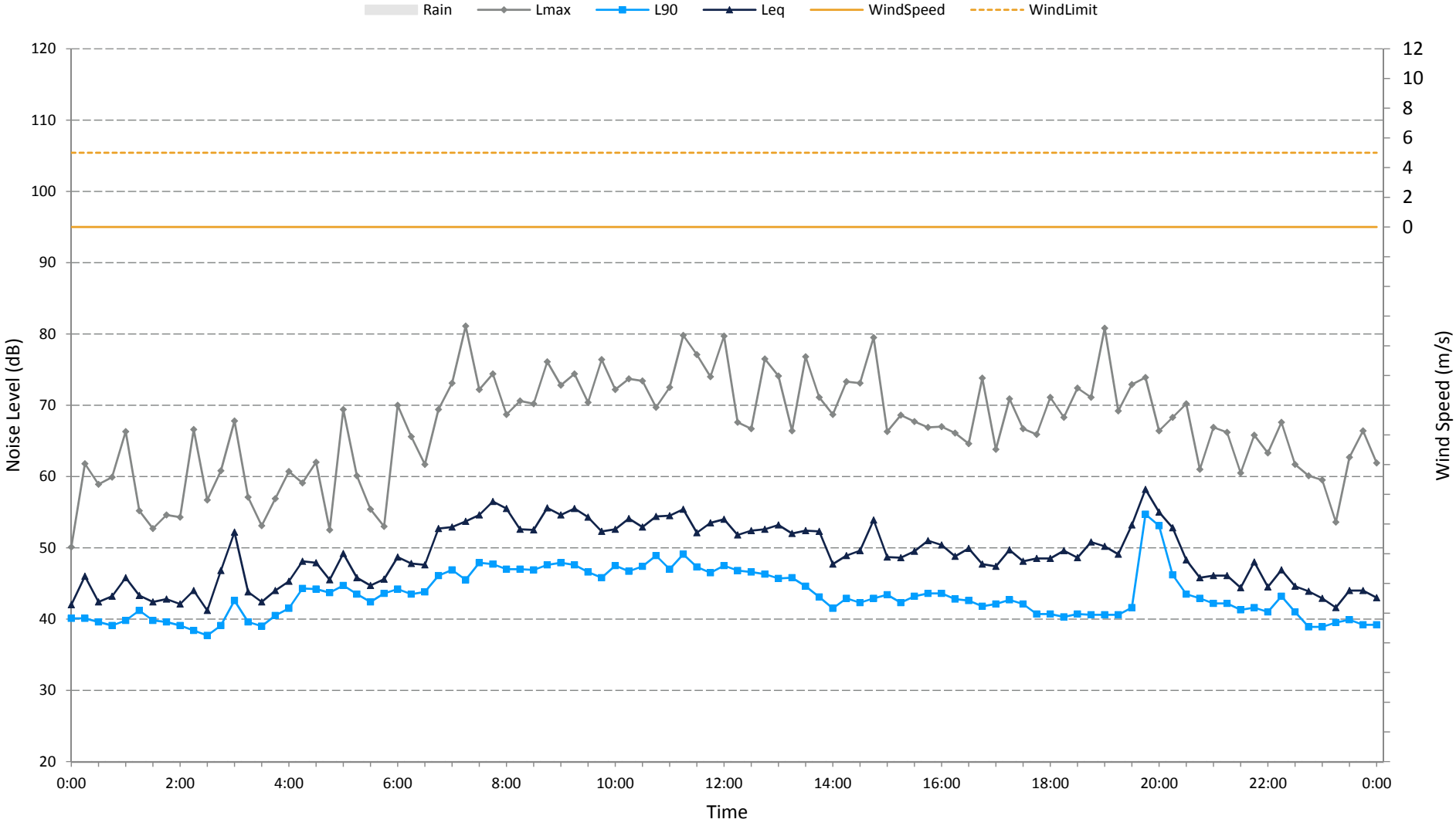
Measured ambient noise levels
119 Tallawalla St, Kinsgrove
Saturday, 16-03-19



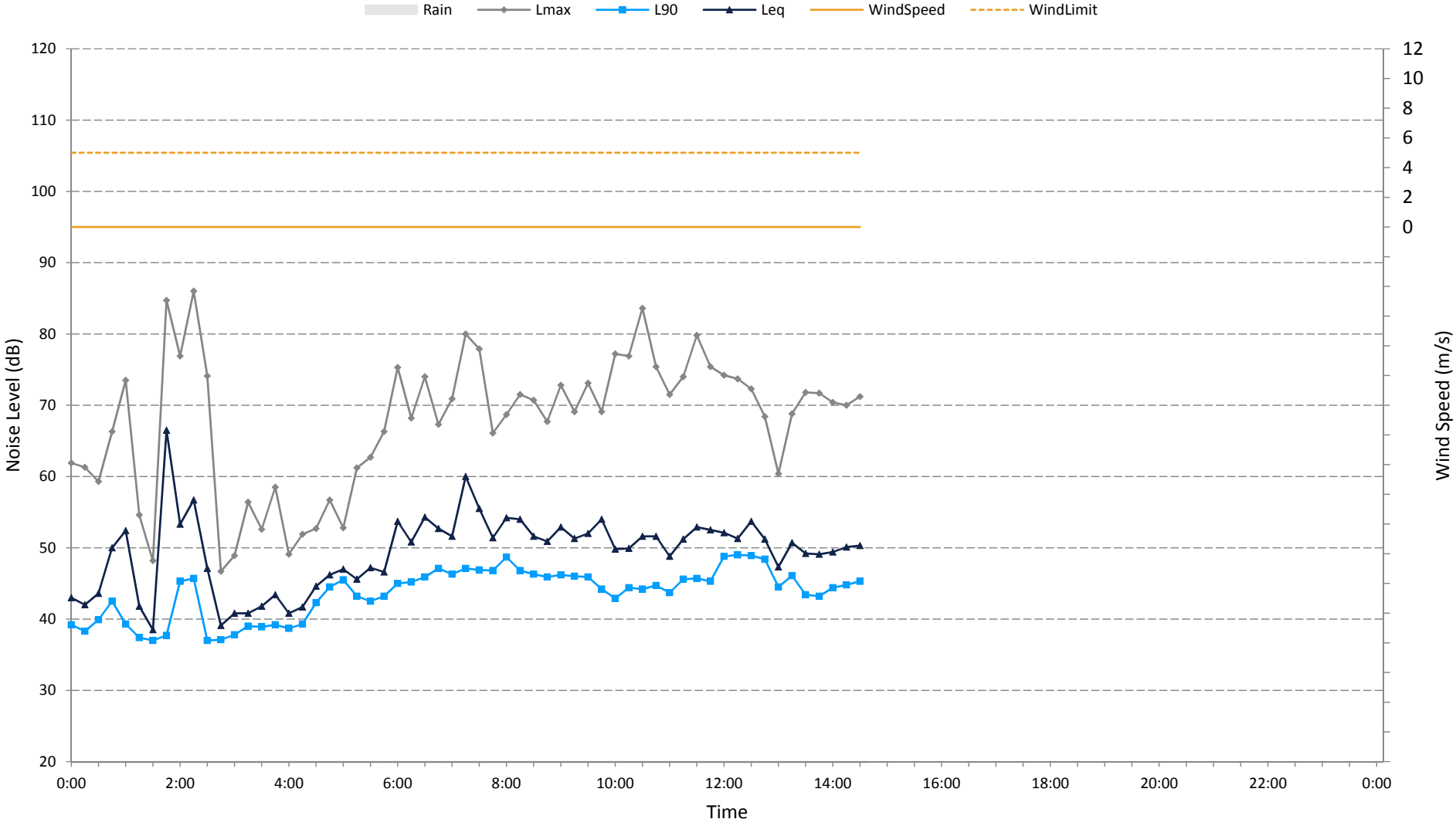
Measured ambient noise levels
119 Tallawalla St, Kinsgrove
Sunday, 17-03-19



Measured ambient noise levels
119 Tallawalla St, Kinsgrove
Monday, 18-03-19



Measured ambient noise levels
119 Tallawalla St, Kinsgrove
Tuesday, 19-03-19



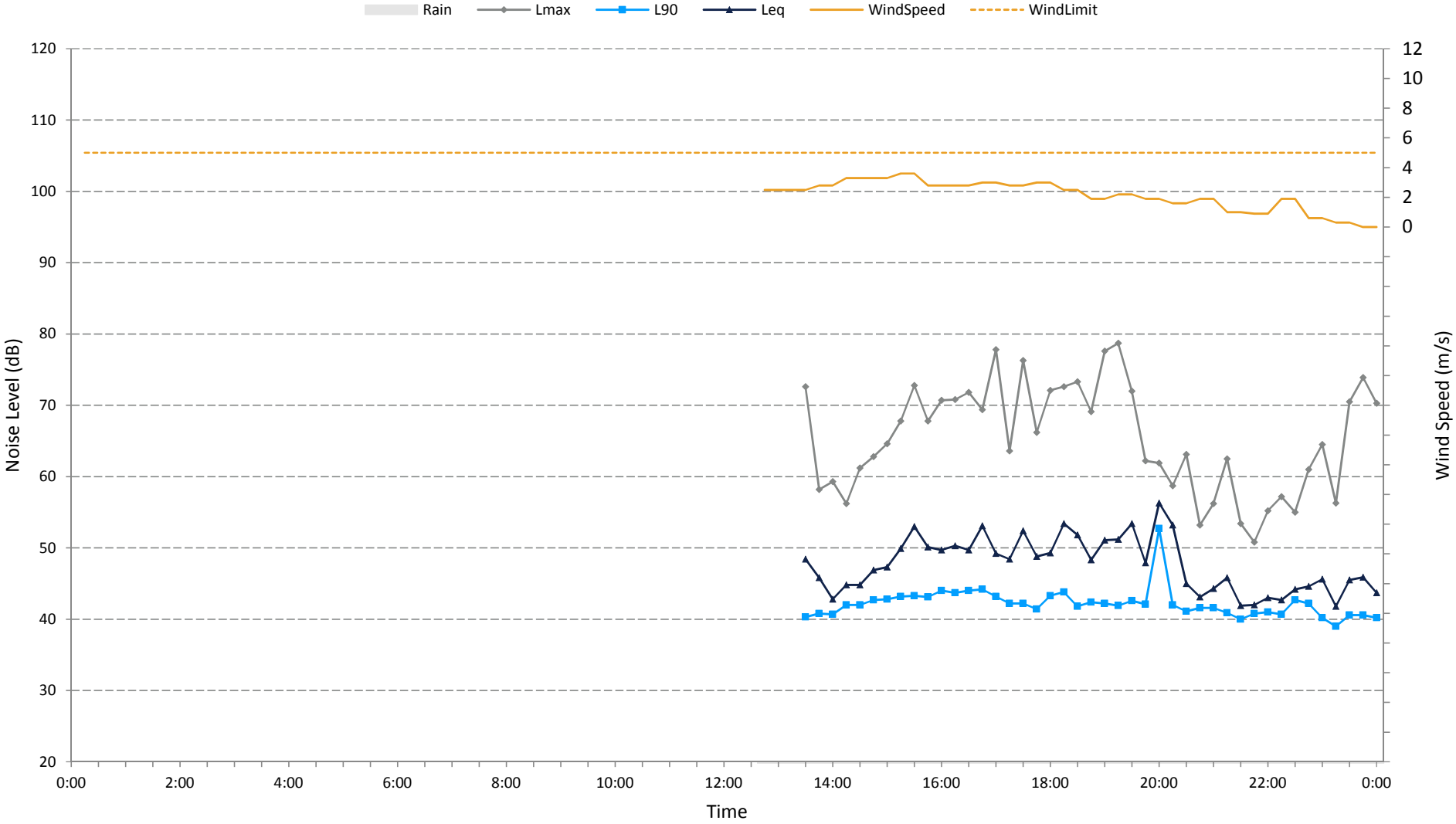
Date	ABL Day	ABL Evening	ABL Night	Leq 11hr Day	Leq 4hr Evening	Leq 9hr Night	Leq 15hr Day	Leq 24hr Day	Leq 8hr
Tuesday, 05-03-19	0	40.8	38.4	0	50.5	49.7	0	0	43.3
Wednesday, 06-03-19	42.4	42.4	39.5	52.1	51	47.7	51.8	50.6	47
Thursday, 07-03-19	43.8	38.8	37.1	60.1	44.7	45	58.8	56.8	43.2
Friday, 08-03-19	42.2	41.1	37.3	60.4	51.2	43.9	59.2	57.3	43.7
Saturday, 09-03-19	42.3	40.6	37.8	53.3	49.3	44.4	52.5	50.8	44.6
Sunday, 10-03-19	37.4	39.5	40.3	47.8	52.8	45.8	49.8	48.7	45.3
Monday, 11-03-19	44.4	40.2	36.6	49.9	50.3	43.5	50	48.5	41.9
Tuesday, 12-03-19	41.7	39.4	39	57.2	49.5	46.2	56.1	54.4	46
Wednesday, 13-03-19	43.6	39	36.8	52.7	46.5	43.1	51.7	50	41.7
Thursday, 14-03-19	45.5	0	39.1	59.7	0	47.1	0	0	44.7
Friday, 15-03-19	48.1	45.4	0	55.4	51	0	54.6	0	0
Saturday, 16-03-19	44.9	42.6	0	56.6	60.6	0	58	0	0
Sunday, 17-03-19	0	45.7	0	0	50.8	0	0	0	0
Monday, 18-03-19	41.6	40.9	0	55.4	54.9	0	55.3	53.8	0
Tuesday, 19-03-19	0	0	0	0	0	0	0	0	0
Summary Values	43	40.8	38.1	56.6	53	46.1	55.5	53.5	44.5

Notes:

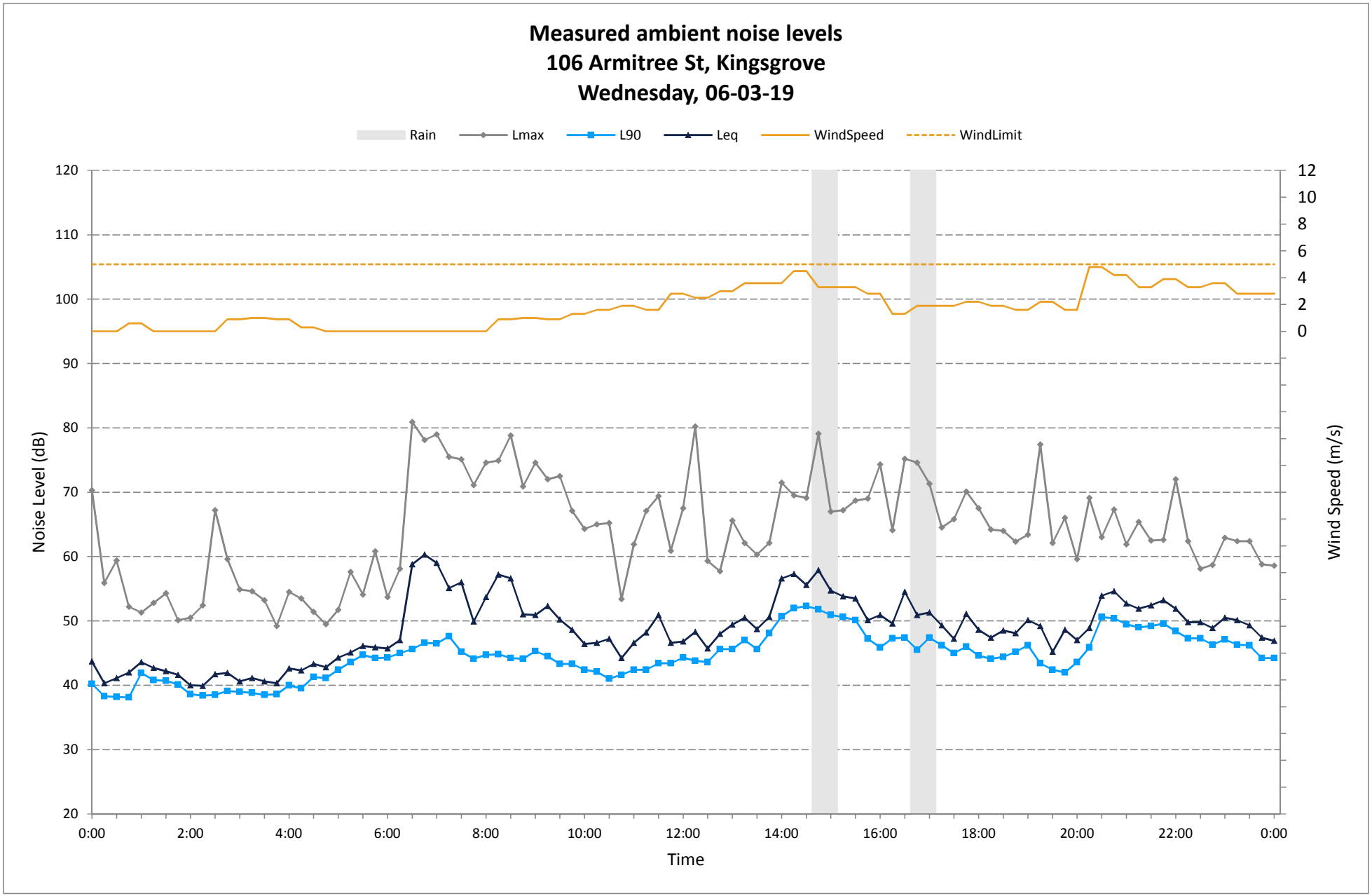
0 indicates periods with too few valid samples due to weather or logger operation

Leq24hr encompasses the period 7am to 7am

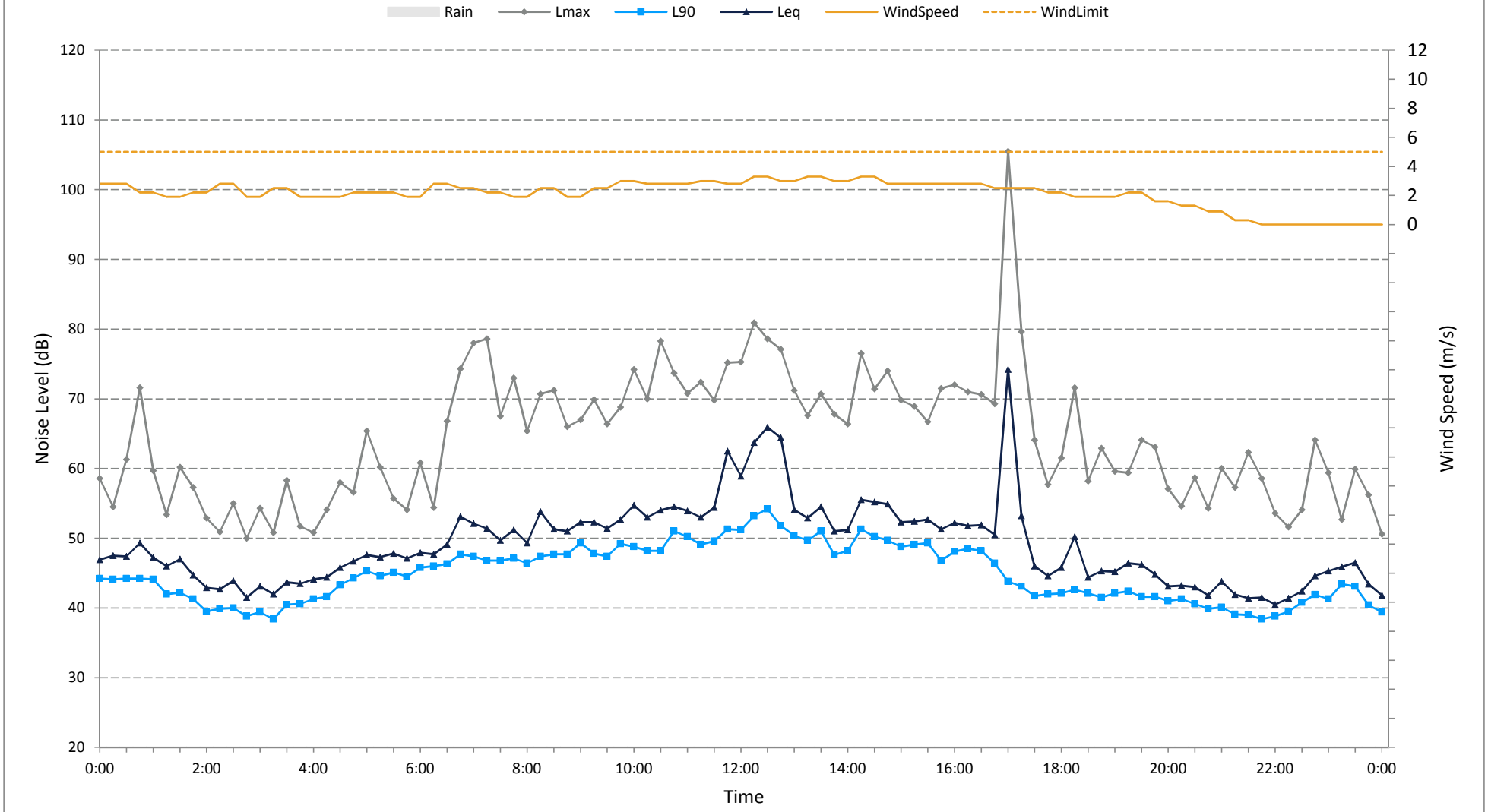
Measured ambient noise levels
106 Armitree St, Kingsgrove
Tuesday, 05-03-19



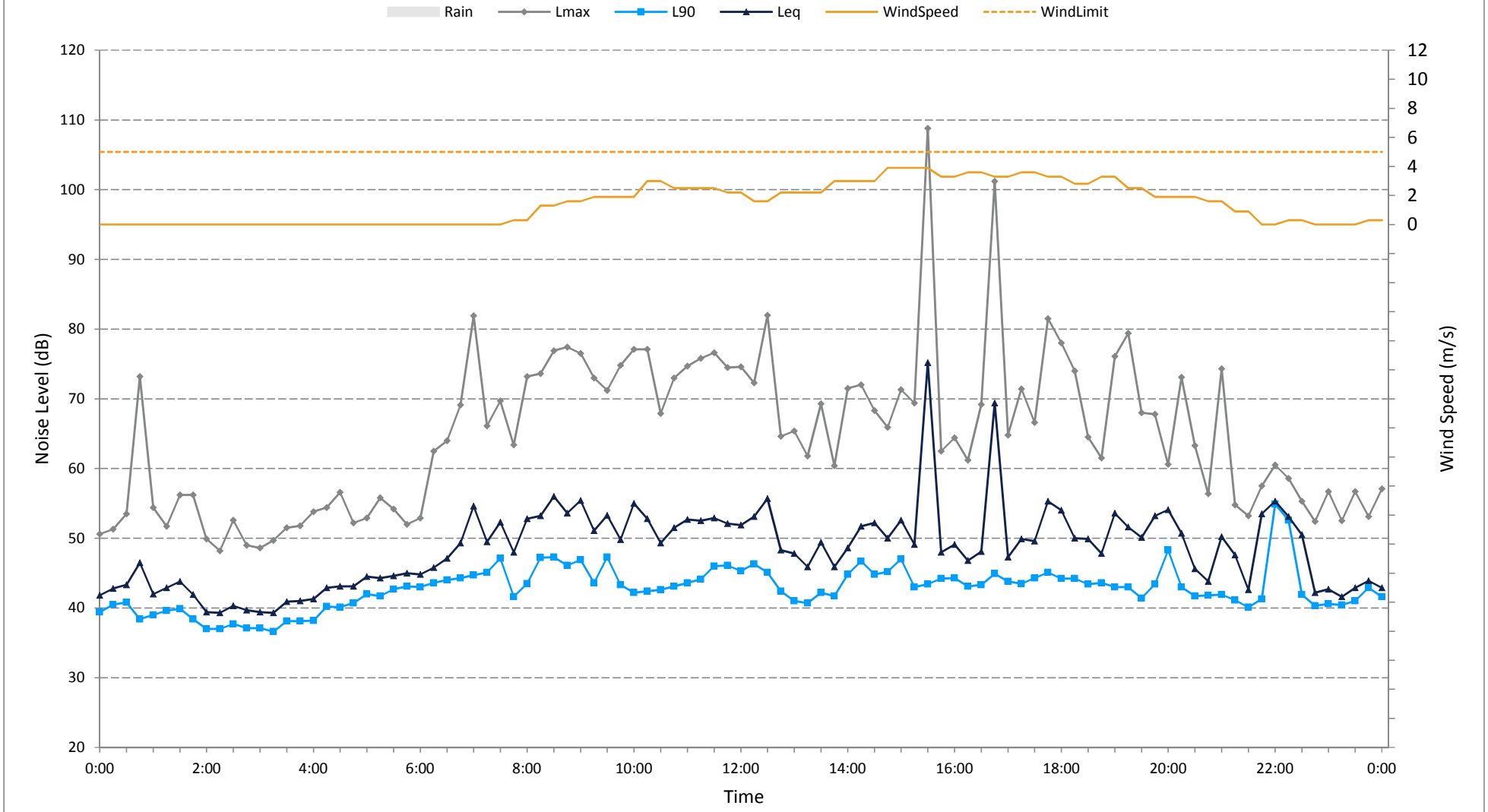
Measured ambient noise levels
106 Armitree St, Kingsgrove
Wednesday, 06-03-19



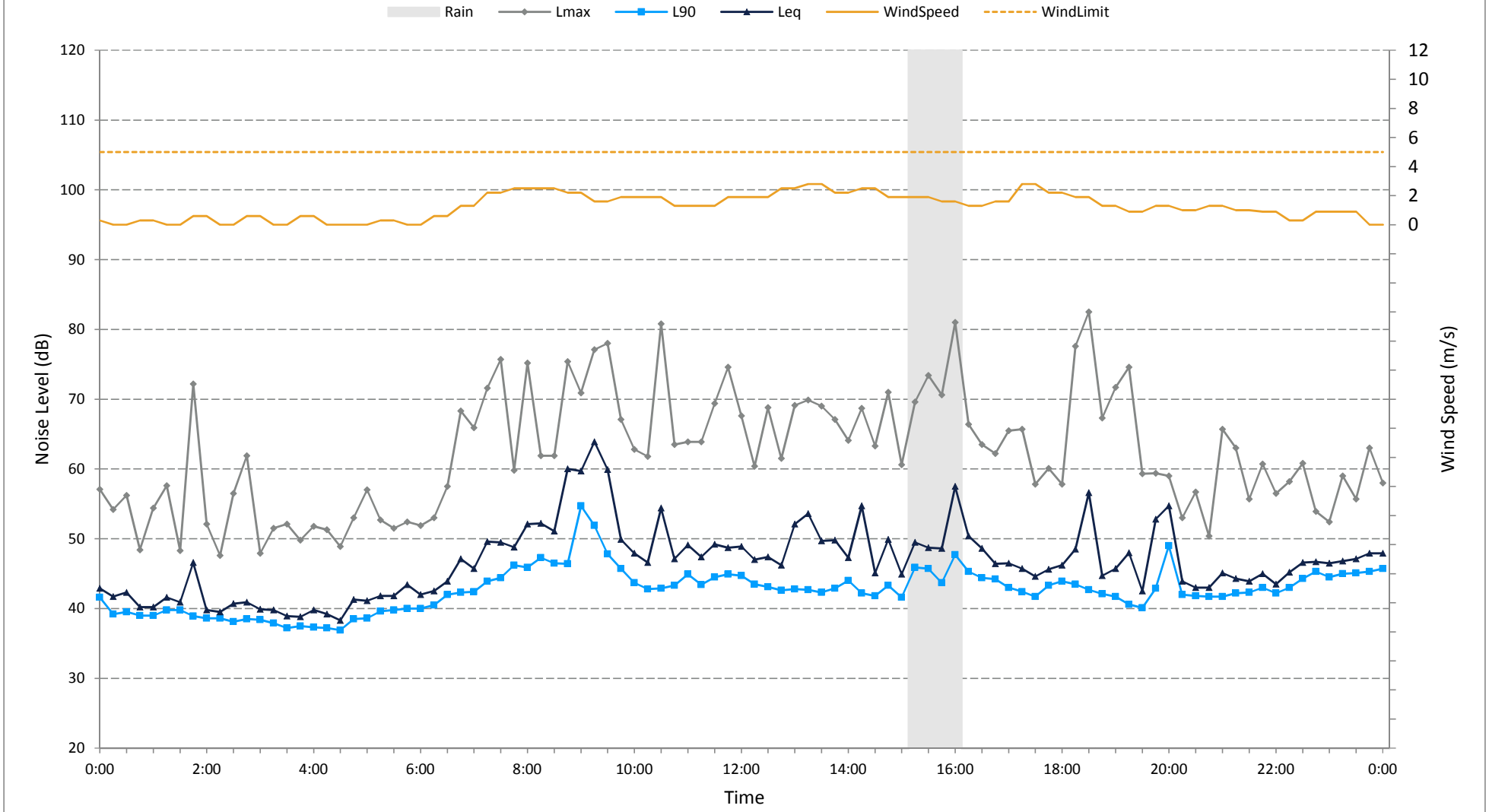
Measured ambient noise levels
106 Armitree St, Kingsgrove
Thursday, 07-03-19

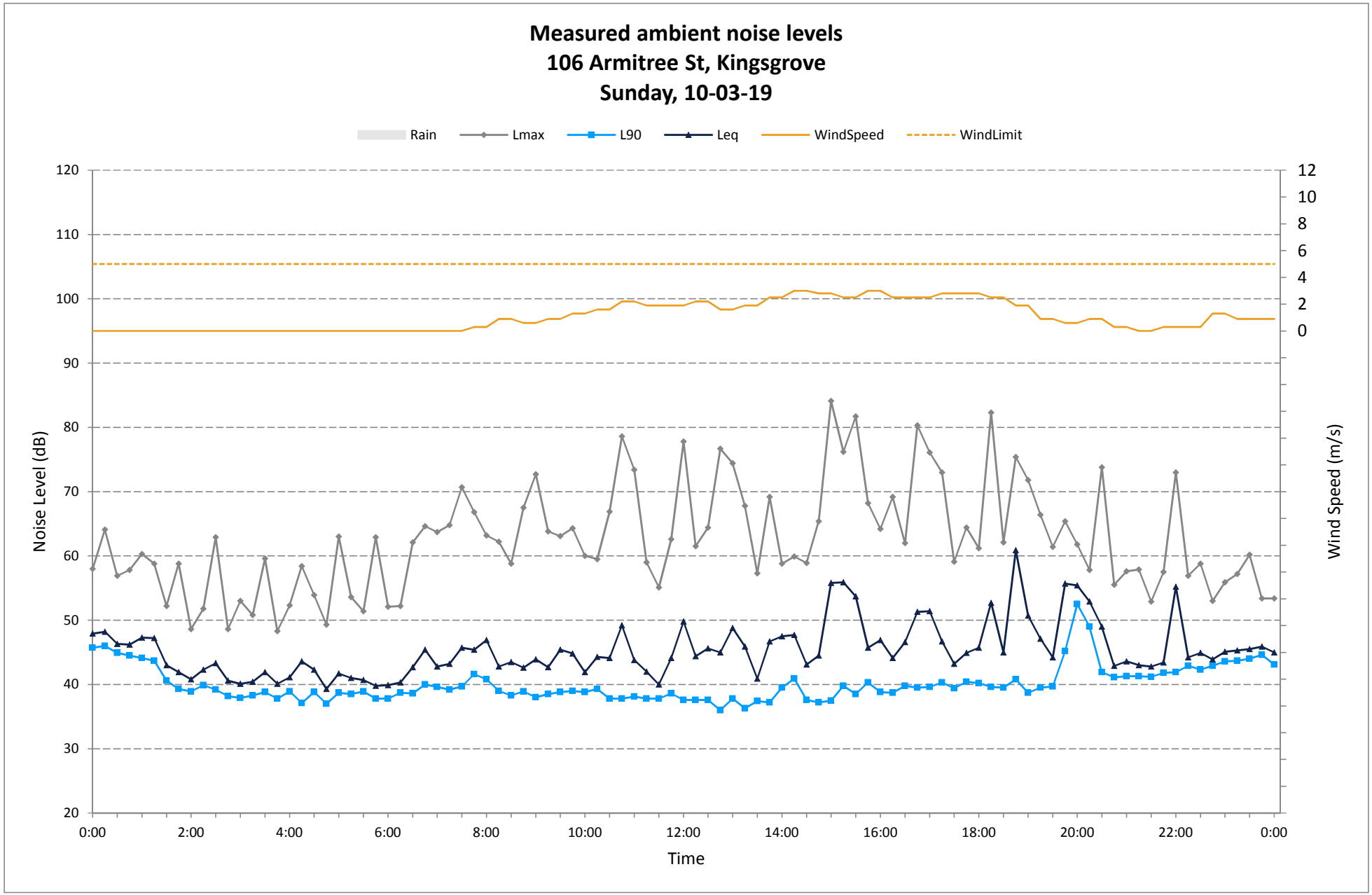


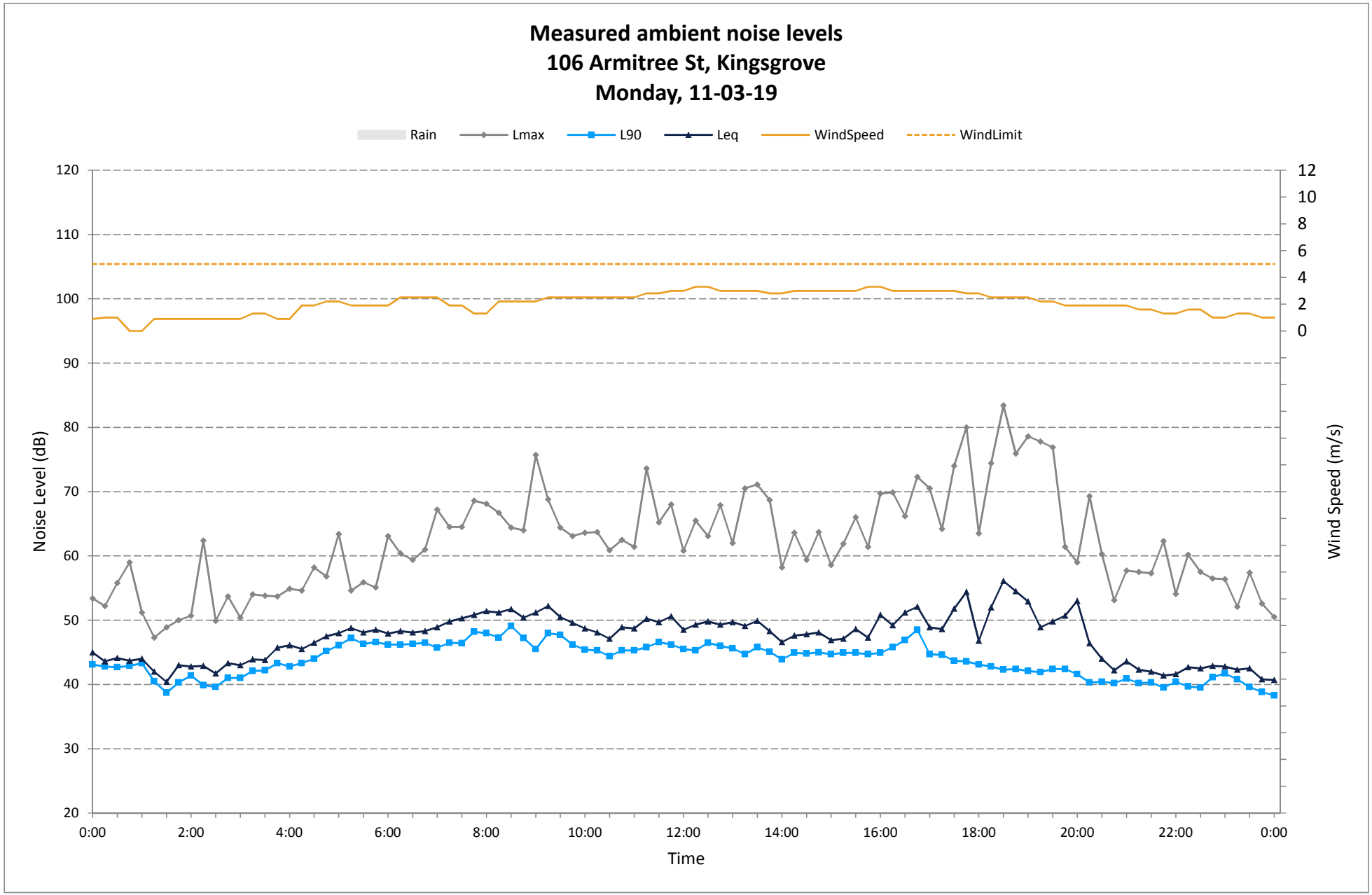
Measured ambient noise levels
106 Armitree St, Kingsgrove
Friday, 08-03-19



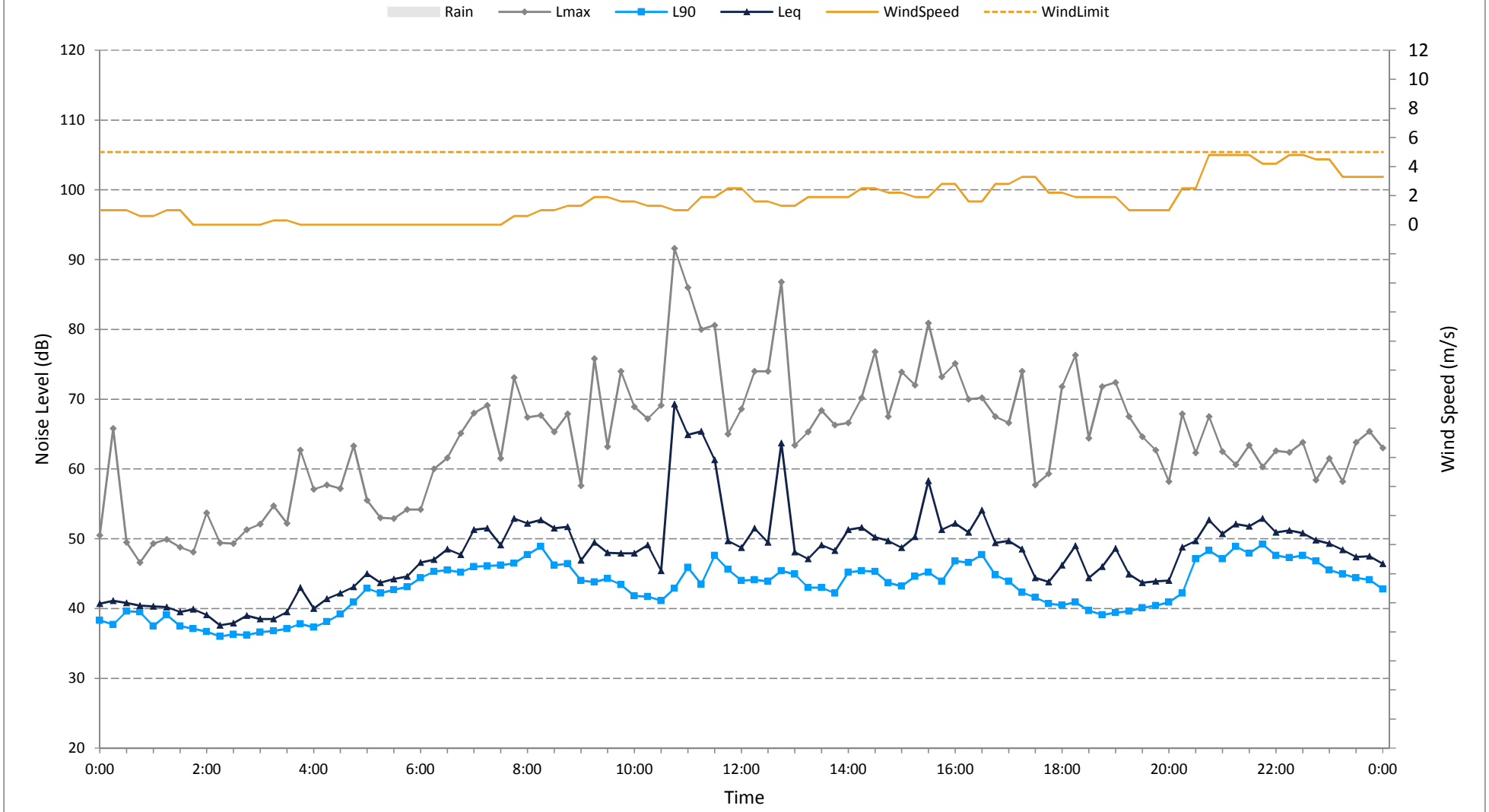
Measured ambient noise levels
106 Armitree St, Kingsgrove
Saturday, 09-03-19

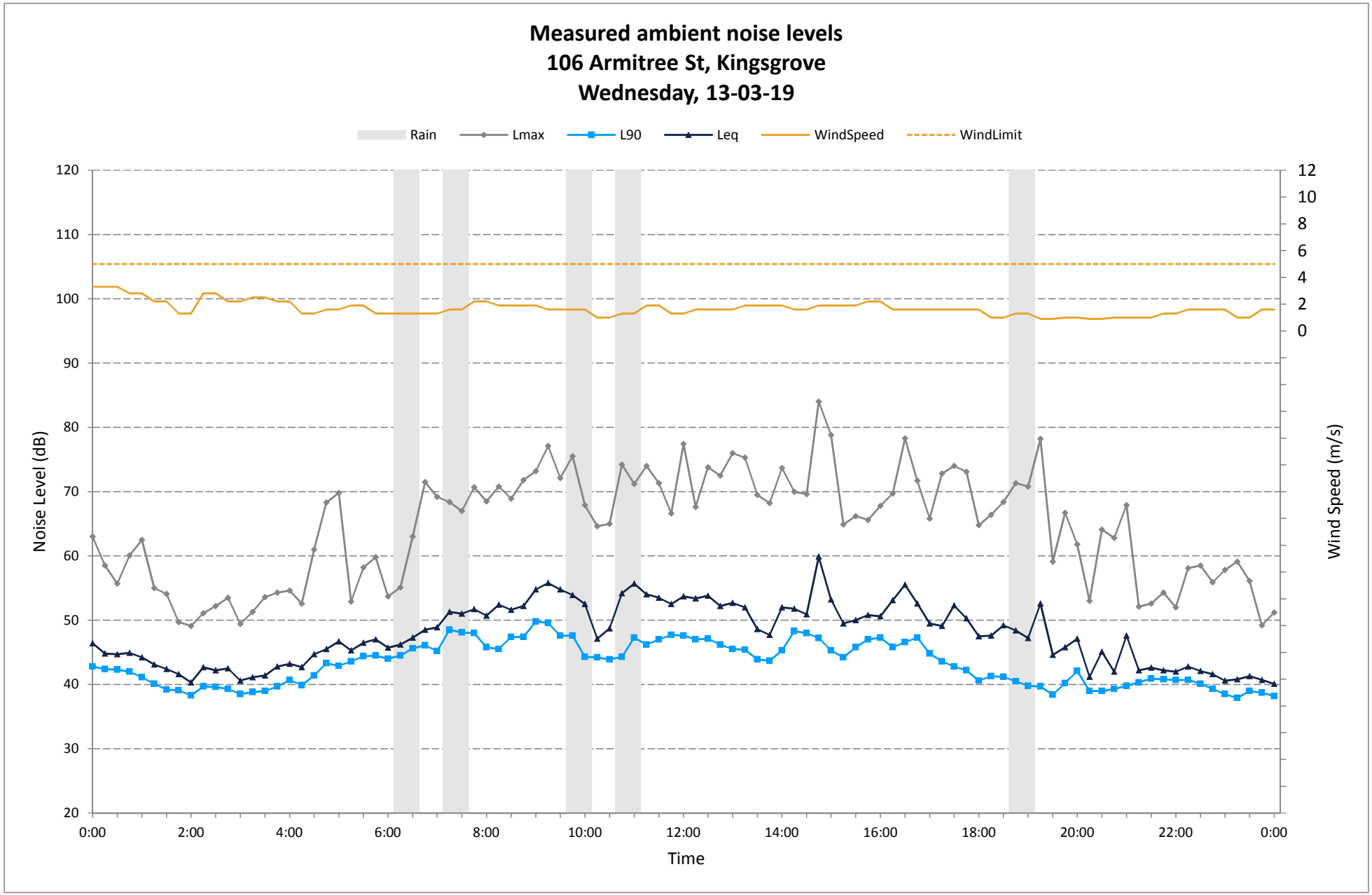



Measured ambient noise levels
106 Armitree St, Kingsgrove
Sunday, 10-03-19
Rain
Lmax
L90
Leq
WindSpeed
WindLimit
Noise Level (dB)
Wind Speed (m/s)
Time
120
110
100
90
80
70
60
50
40
30
20
12
10
8
6
4
2
0
0:00
2:00
4:00
6:00
8:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00
0:00


Measured ambient noise levels
106 Armitree St, Kingsgrove
Monday, 11-03-19
Rain
Lmax
L90
Leq
WindSpeed
WindLimit
Noise Level (dB)
Wind Speed (m/s)
Time
120
110
100
90
80
70
60
50
40
30
20
12
10
8
6
4
2
0
0:00
2:00
4:00
6:00
8:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00
0:00

Measured ambient noise levels
106 Armitree St, Kingsgrove
Tuesday, 12-03-19




Measured ambient noise levels
106 Armitree St, Kingsgrove
Wednesday, 13-03-19
Rain
Lmax
L90
Leq
WindSpeed
WindLimit
Noise Level (dB)
Wind Speed (m/s)
Time
120
110
100
90
80
70
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0:00
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6:00
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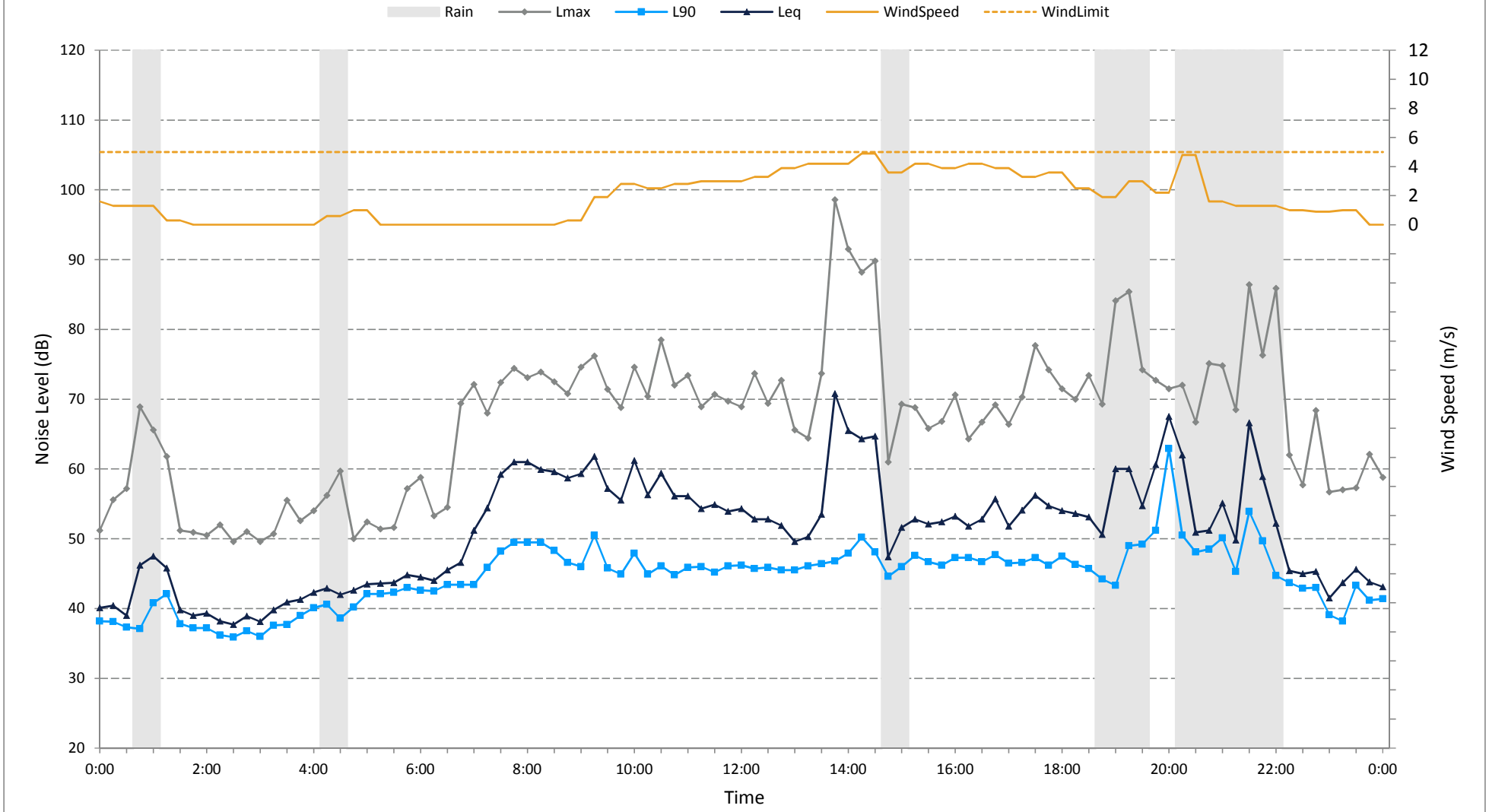
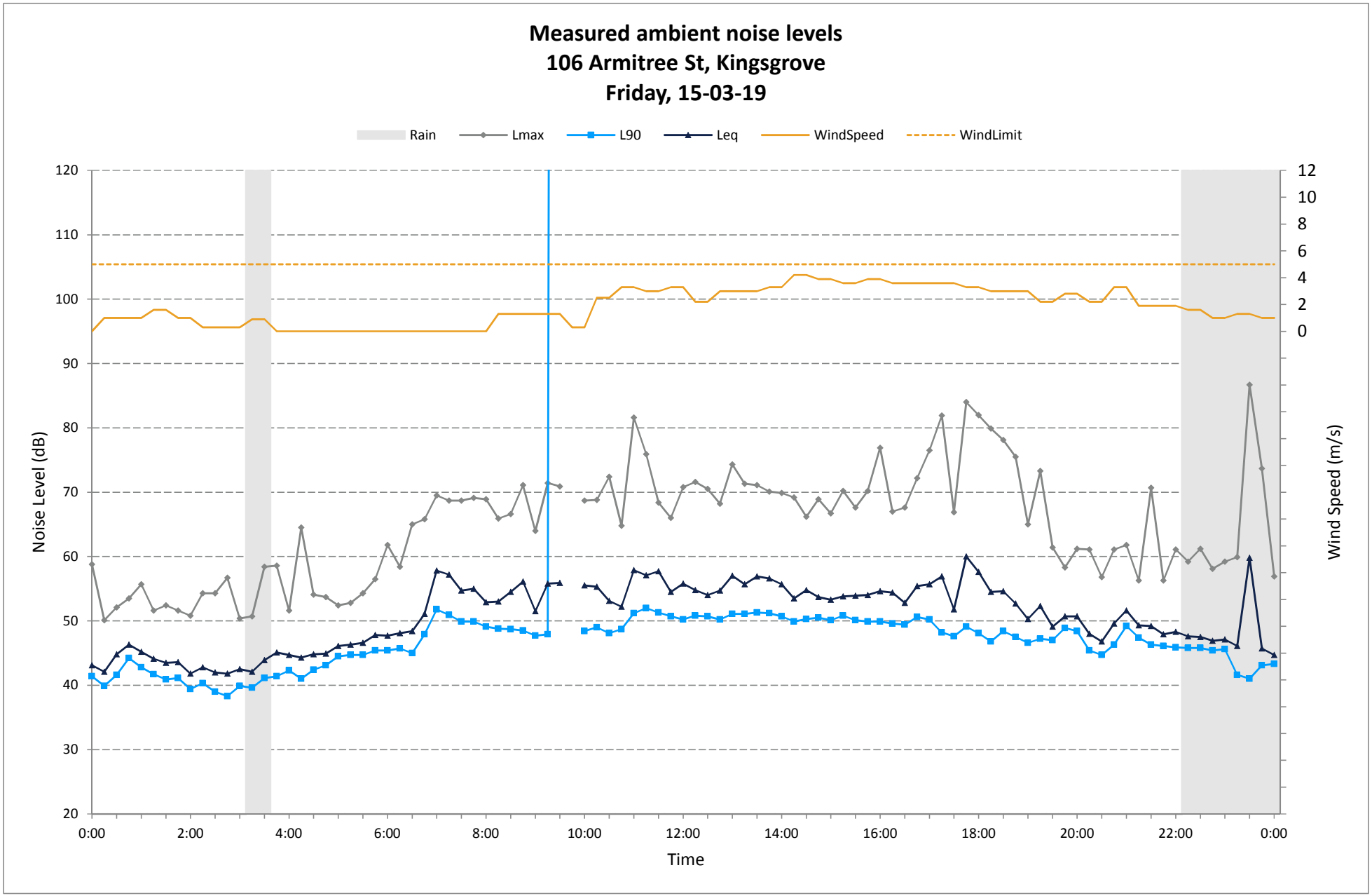
14:00
16:00
18:00
20:00
22:00
0:00

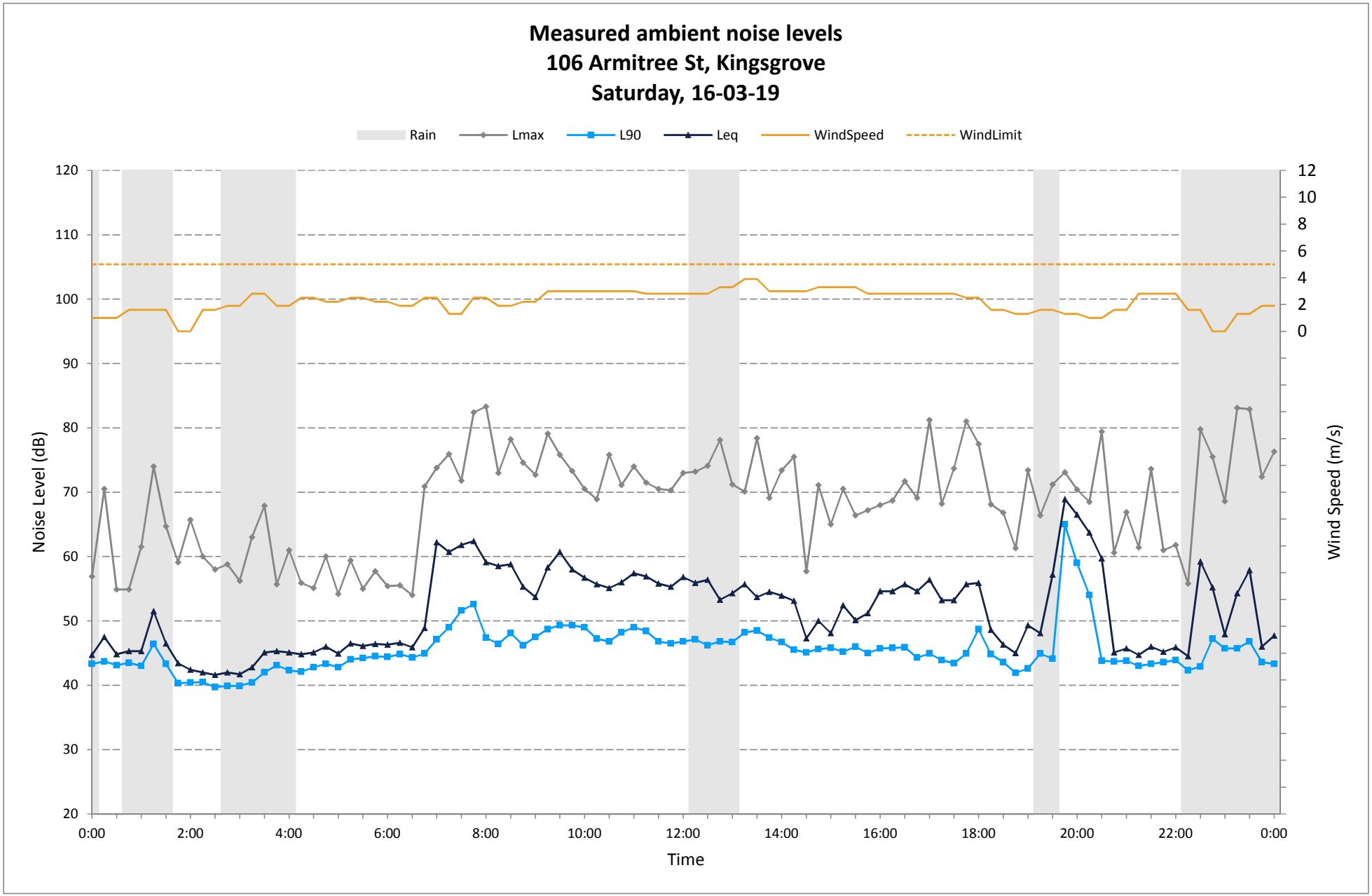
Measured ambient noise levels
106 Armitree St, Kingsgrove
Thursday, 14-03-19



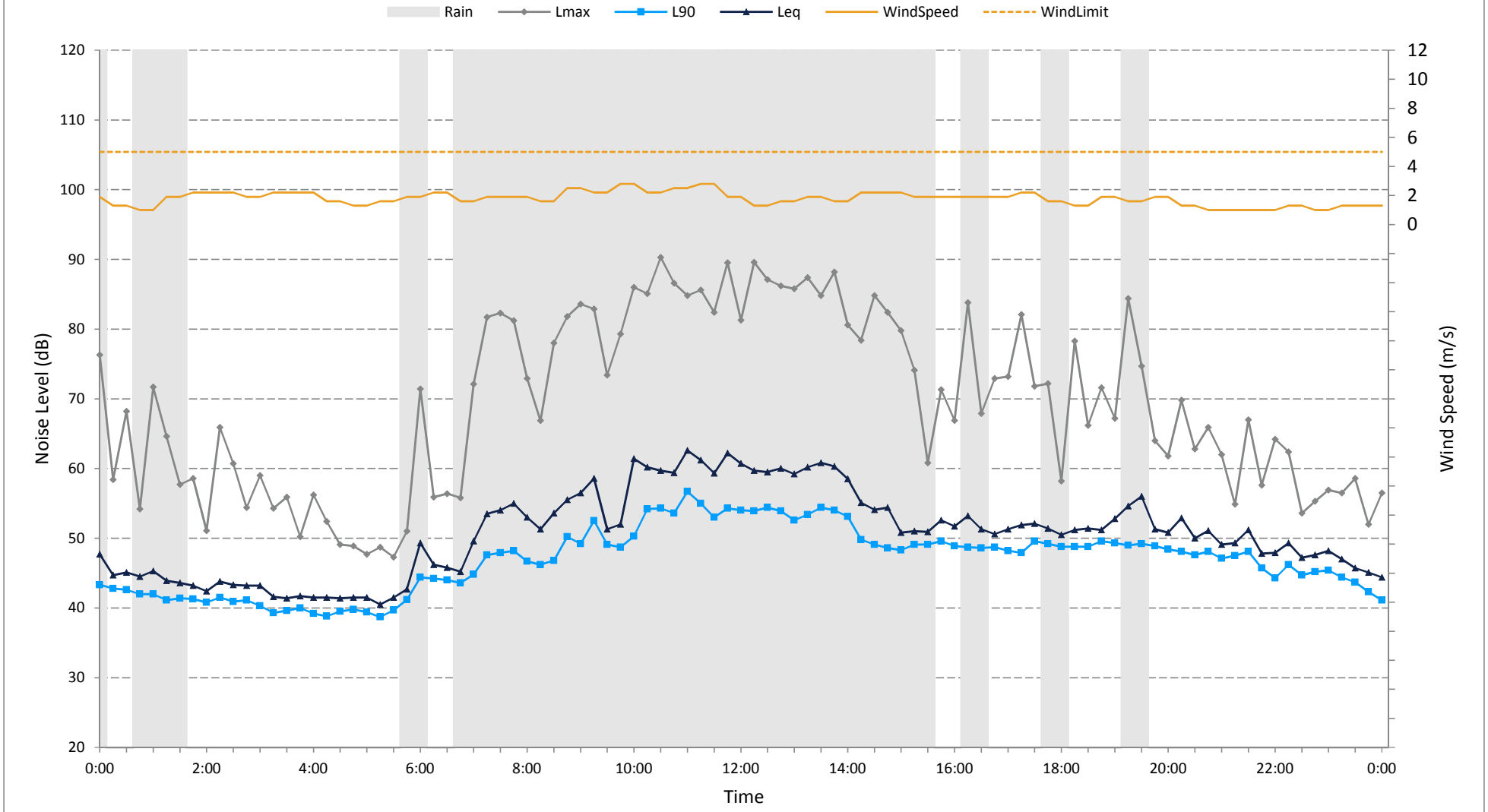
Measured ambient noise levels
106 Armitree St, Kingsgrove
Friday, 15-03-19



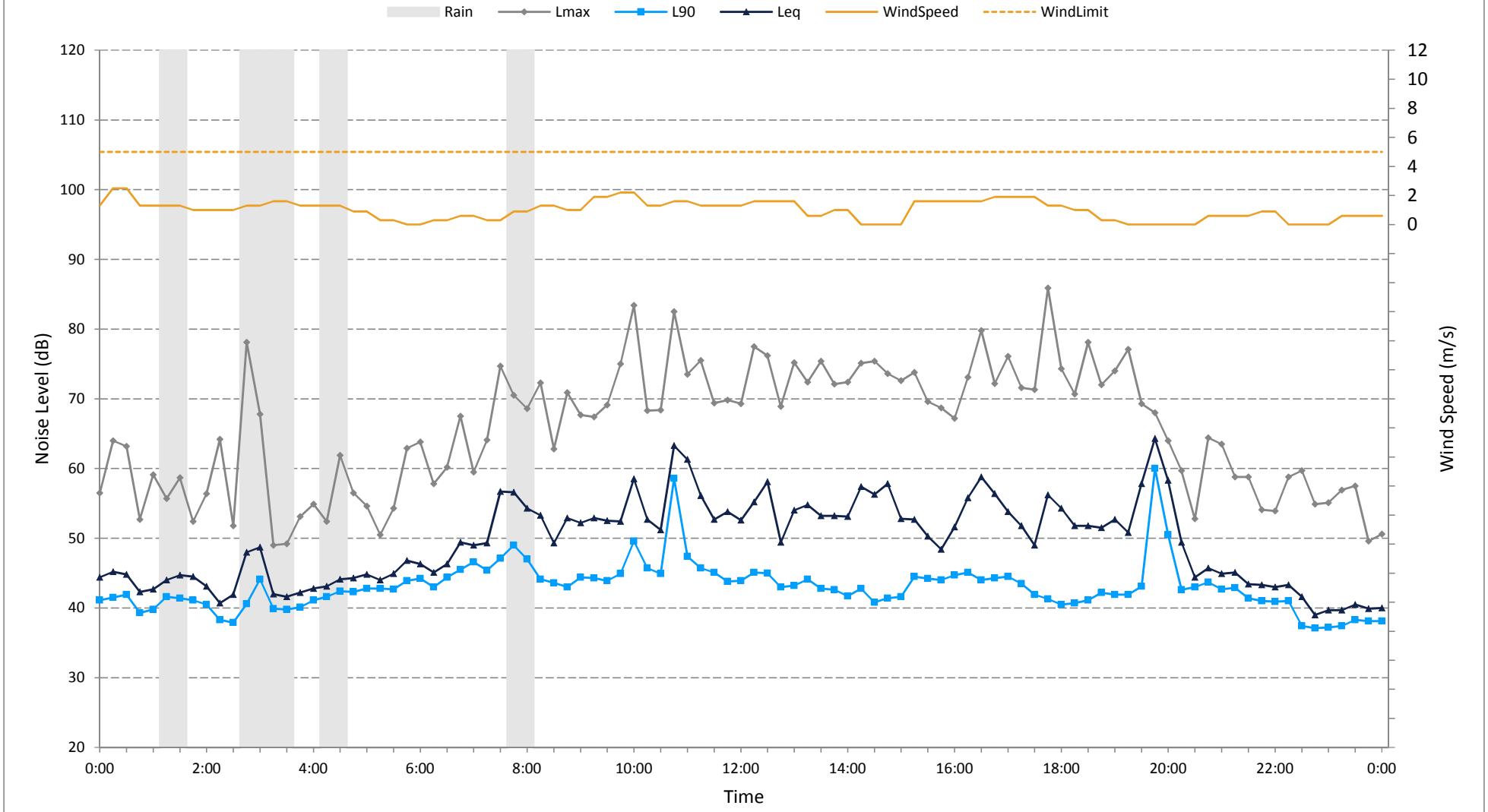
Measured ambient noise levels
106 Armitree St, Kingsgrove
Saturday, 16-03-19



Measured ambient noise levels
106 Armitree St, Kingsgrove
Sunday, 17-03-19



Measured ambient noise levels
106 Armitree St, Kingsgrove
Monday, 18-03-19



Measured ambient noise levels
106 Armitree St, Kingsgrove
Tuesday, 19-03-19