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# BSV Tyre Recycling Facility, 30 Daisy Street, Revesby

## Noise & Vibration Impact Assessment

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| | | | | | |

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# 1 INTRODUCTION

This report has been prepared to assess potential noise and vibration impacts associated with BSV Tyre Recycling Australia facility located at 30 Daisy Street, Revesby.

Impacts assessed include:

- Operational noise and vibration emissions
- Noise impacts from additional traffic on nearby public roads generated by the development.

The subject site and local context are indicated in Figure 1.

The report has been prepared for the sole purpose of a development application assessment and should not be used or relied on for any other purpose.

# 2 REFERENCED DOCUMENTS

### 2.1.1 Background Information Used

The assessment is based on the following drawings, reports and other information:

- The site drawings prepared by JEP Environment & Planning, dated 27th August 2024.
- The operational analysis spreadsheet prepared by JEP Environment & Planning

### 2.1.2 Guidelines

The following planning instruments and guidelines have been used in the assessment:

- NSW EPA – 'Noise Policy for Industry' ("**NPfI**") October 2017
- NSW EPA – 'Road Noise Policy" ("**RNP**") March 2011
- Canterbury Bankstown Council Development Consent (DA843/2013)
- NSW Environmental Protection Licence (EPL 20387).

# 3 ABBREVIATIONS AND DEFINITIONS

The following Abbreviations and definitions are used in this noise impact assessment.

| | |
|---|---|
| **dB** | Decibels - unit for the measurement of sound |
| **dB(A)** | A-weighted decibels. Unit of measurement for broadband sound with the A-frequency weighting applied to approximate human loudness perception to sounds of different pitch. |
| **$L_{eq}$** | Energy, time averaged sound level |
| **$L_{max}$** | Maximum sound pressure level, fast response |
| **$L_{90}$** | Sound level exceeded for 90% of the measurement period |
| **$R_w$** | Frequency weighted sound reduction index. |
| **NRC** | Average absorption co-efficient for the octave bands with centre frequencies of 250Hz to 2 kHz inclusive. |
| **Day*** | For noise emissions assessment - the period from 7 am to 6 pm (Monday to Saturday) and 8 am to 6 pm(Sundays and public holidays).<br>For transportation noise - the period from 7 am to 10 pm |
| **Evening*** | Refers to the period from 6 pm to 10 pm. |
| **Night*** | The period from 10 pm to 7 am (Monday to Saturday), and 10 pm to 8 am(Sundays and public holidays).<br>For transportation noise - the period from 10 pm to 7am |
| **Project Trigger Level** | Target receiver noise levels for a particular noise-generating facility. |
| **Assessment Background Level (ABL)** | A-weighted background noise level representative of a single period. (Calculated in accordance with NPfI unless noted otherwise) |
| **Rating Background Level (RBL)** | The overall, single-figure A-weighted background level representing each assessment period (day/evening/night) over the whole monitoring period. (Calculated in accordance with NPfI unless noted otherwise) |

* Unless nominated otherwise.

# 4 SITE DESCRIPTION AND THE PROPOSAL

BSV Tyre Recycling Australia Pty Ltd operates an EPA licenced resource recovery facility for used tyres at 30 Daisy Street, Revesby NSW (EPL 20387). The company is accredited by Tyre Stewardship Australia (TSA), the peak industry body established to ensure the sustainable management of used tyres in Australia.

The site contains a single storey industrial building with associated mezzanine office level. The factory environment within this building is used for tyre shredding and crumbing with mechanical plant and equipment. A weighbridge is located on the southern boundary of the site. A large outdoor covered area t the rear eastern side of the site is used for tyre storage, bailing and containerisation. The lot has a total area of approximately 4,000m$^2$.

The site currently operates under development consent DA843/2013 for the receipt, processing and production of various tyre derived products from used car and truck tyres received. The site has historically relied on the baling and export of used tyres. In 2019, the Council of Australian Governments (COAG) agreed to ban the export of a range of waste types including whole tyres (except truck, bus and aviation tyres being exported for re-treading), which commenced on 1 December 2021. Since this date, the facility has focused on crumb rubber production for use in asphalt making and sustainable children playground surfaces, and the production of a tyre chip which is exported as a coal replacement (referred to as a Tyre Derived Fuel or TDF).

## 4.1 DESCRIPTION OF THE PROPOSAL

BSV Tyre Recycling Australia Pty Ltd is seeking approval for alterations and additions to its development consent to increase the production of TDF. The Proposal will increase the receival limit of tyres from 14,600 tonnes per year to 29,900 tonnes per year, whilst retaining the ability to manufacture rubber crumb when demand is displayed by the domestic market. Crumb rubber production capability will remain as approved in the shed under DA843/2013.

The proposal includes the following components:

- Decommissioning of the tyre baling machines located under the rear awning of the site;
- Alternative positioning of existing shipping containers for storage of rubber products;
- Installation of two mobile diesel shredding units to increase the production of TDF on the rear hardstand of the site, to be located under the rear awning with local exhaust ventilation
- Establishment of a dedicated area for tyre unloading and temporary storage prior to processing;
- Installation of a pre-cast concrete panel wall along the southern boundary of the site to improve fire safety and noise attenuation
- Replace the single head fire hydrant with dual fire hydrants near the tyre storage area, including the provisions of fire extinguishers, fire hose reals and provision for at least 108m$^3$ of fire water containment bunding;
- Installation of a new firewater isolation valve to the north-eastern side of the site; and
- Inclusion of a dedicated bicycle space.

The alterations and additions to the existing tyre recycling facility will help improve operational efficiency, reduce the need for tyre stockpiling outside and will help the facility to better support the tyre recycling needs on the Sydney Metropolitan Area. The Proposal is compliant with the requirements of NSW Fire & Rescue (2014) Fire Safety Guideline – *Guideline for Bulk Storage of Rubber Tyres*

Additional tyre recycling infrastructure is identified as a need under the NSW Waste and Sustainable Materials Strategy – *A Guide to Future Infrastructure Needs*. By 2030, the shortfall in infrastructure capacity of tyre recycling is projected to increase to 100,000 tonnes of tyres per annum. Deployment of additional infrastructure such as that outlined in this Proposal is critical to ensure that tyres continue to be managed in a sustainable manner at the end of life in Sydney.

## 4.2 HOURS OF OPERATION

No change in operating hours is proposed, and will remain as 6am to 11pm on weekdays, 8 am to 5pm on Saturdays and 9am to 4pm on Sundays as per DA843/2013. Two additional jobs will be created bringing staff levels from 15 to 17 employees, as well as a maximum of 9 staff on site at any given time to meet parking demand.

Tyres will be transported to the facility in medium rigid vehicles (MRV's) and in forty cubic foot shipping containers transported by side loading semi-trailers. All vehicles will enter the site in a forward direction over the weighbridge on the southern side of the site, and will exit in the forward direction over the weighbridge and out of the site. All product hauled off-site will be containerised in forty cubic foot shipping containers for transport via semi-trailers to Port Botany for export.

## 4.3 SENSITIVE RECEIVERS

The following table lists the nearest/potentially most impacted sensitive receivers surrounding the site. An aerial photo of the site indicating nearby noise sensitive receivers and measurement locations is presented in Figure 1.

**Table 1 – Noise Sensitive Receivers**

| Noise Catchment Area (Refer Figure 1) | Receiver Type | Comment |
|---|---|---|
| NCA1 | Residential | Single and multi-level residential receivers from 55-75 Carrington Street, Revesby, 68-74 Queen Street, Revesby and 27-48 Greenway Parade, Revesby |
| NCA2 | Industrial | Single and multi-level industrial receivers from 27-39 Daisy Street, Revesby, and 33-81 Violet Street, Revesby |
| NCA3 | Industrial | Single and multi-level industrial receivers from 34-38 Daisy Street, Revesby and 32-38 Queen Street, Revesby. |
| NCA4 | Industrial | Single and multi-level industrial receivers from 22-26 Daisy Street, Revesby and 22-30 Queen Street, Revesby. |


**Figure 1 – Site Context and Nearest Sensitive Receivers**

# 5 SITE OPERATIONAL NOISE EMISSIONS ASSESSMENT

## 5.1 ENVIRONMENTAL NOISE AND VIBRATION SOURCES

The following significant noise sources have been identified as requiring assessment:

- Internal activities including use of crumb rubber plant, shredders, forklifts and bobcat.
- Truck movements on the site and on local roads from inbound deliveries and outbound exports.

## 5.2 NOISE ASSESSMENT CRITERIA FOR ON-SITE NOISE SOURCES

Criteria to assess noise emissions from the operation of the proposed development have been developed using the NPfI. This policy was primarily developed to assess noise impacts from industrial development, but can also be adapted to assess other types of development such as commercial buildings and air conditioning plant.

For each receiver type:

- Receivers have been grouped into "catchments". These are receivers that have been assessed as having similar characteristics (receiver type and ambient noise level). These are shown in Figure 1
- For each catchment, representative noise assessment trigger levels have been determined based on NPfI guidelines. The trigger levels have been adopted in this assessment as criteria. These will be used to indicate whether additional mitigation is needed to manage noise emissions.
- For each catchment, noise emissions have been assessed to the most impacted receiver. This means that impacts at all other receivers within that catchment will be less. Compliance at the most impacted receiver will therefore also result in compliance at all other receivers within the catchment.

For residential receivers, three criteria are assessed:

- Intrusive assessment– how audible loud is the emitted noise compared to ambient, background noise). Criteria are determined relative to the measured rating background.
- Amenity assessment – how loud is the absolute level of industrial noise, including noise from other industrial sources. The NPfI nominates appropriate amenity noise levels depending on the receiver type and prevailing noise environment.
- Maximum Noise assessment – will high level, short term noise events cause adversely impact sleep at night? Trigger levels are determined relative to the measured night rating background, and assessed outside sleeping areas.

For other receiver types, only an "amenity" assessment is required.

APPENDIX A and APPENDIX B summarise the derivation of trigger levels for each of the receivers, and these are summarised in the following table.

**Table 2 – Project Specific Noise Trigger Levels**

| Noise Catchment Area | Time | RBL dB(A) $L_{90}$ | Trigger Noise Level (dB(A) $L_{eq,15min}$) | | |
|---|---|---|---|---|---|
| | | | Intrusiveness | Amenity | Max Event |
| NCA1 - Residential | Day | 56 | 61 | **48** | n/a |
| | Evening | 55 | 60 | **45** | n/a |
| | Night | 44 | 49 | **43** | 49 $L_{eq}$<br>59 $L_{max}$ |
| NCA2 – 4 – Industrial | Day | n/a | n/a | 68 | n/a |

## 5.3 RECEIVER NOISE PREDICTIONS

Operational noise levels have been predicted at each of the identified most affected receivers by:

SoundPLAN noise modelling software (version 8.0) has been used to predict noise impacts from the subject site to the receivers. Modelling included:

- A geo-model of the site, noise sources on the subject site and surrounding land and built forms. Data indicating the surrounding land and built forms were obtained from Geoscape.
- Noise emission levels in APPENDIX D for the noise sources.
- The operational analysis spreadsheet prepared by JEP Environment & Planning.
- The modelling incorporates the effect of the complying mitigating treatment indicated in Section 8.
- ISO 9613-2:1996 "Acoustics – Attenuation of Sound During Propagation Outdoors – Part 2: General Method of Calculation" noise propagation standard. This model assumes the worst-case weather conditions ("downwind") for noise propagation from the source to the receiver, hence details of the direction are not required for predictions made using this model.

### 5.3.1 General Modelling Assumptions

- All residential receivers were modelled at 1.5m above ground level, and at 4.5m above ground level for two level dwellings. Multi-storey developments were also assessed at 1.5m above floor level.
- Source locations and heights are indicated in APPENDIX D.
- Ground absorption was conservatively calculated with a ground factor of 0 for all areas except localised lawns and greenery surrounding the site with a ground factor of 0.6 as recommended in *Engineering Noise Control* (Bies & Hanson).

### 5.3.2 Modelled Operational Scenarios

The following operational scenarios were modelled:

- Daytime/Evening Peak Operational Scenario 1: Medium rigid vehicle manoeuvres into the site and reverses into designated area, two tyre shredders are operating simultaneously and three forklifts/bobcats are in operation.
- Daytime/Evening Operational Scenario 2: Medium rigid vehicle exits the site from the designated area, two tyre shredders are operating simultaneously and three forklifts/bobcats are in operation.

- Night-time Peak Operational Scenario 1: Medium-rigid vehicle manoeuvres into the site and reverses into the designated area with 1 forklift in operation.
- Night-time Peak Operational Scenario 2: Medium-rigid vehicle exits the site from the designated area with 1 forklift in operation.

## 5.4 RESULTS

SoundPLAN™ modelling outputs are provided in the APPENDIX C. The results of the noise predictions and a comparison with the project trigger levels are summarised in the following table.

**Table 3 – Predicted Operational Noise Levels**

| Scenario | Receiver | Predicted Noise Level – dB(A)$L_{eq(q15\text{-}min)}$ | Project Noise Trigger Level – dB(A) | Comment |
|---|---|---|---|---|
| Daytime/Evening Operation Scenario 1 | NCA1 | 44 | 45 $L_{eq(15\text{-}min)}$ | Complies |
| | NCA2 | 56 | 68 $L_{eq(15\text{-}min)}$ | Complies |
| | NCA3 | 64 | | Complies |
| | NCA4 | 58 | | Complies |
| Daytime/Evening Operation Scenario 2 | NCA1 | 44 | 45 $L_{eq(15\text{-}min)}$ | Complies |
| | NCA2 | 56 | 68 $L_{eq(15\text{-}min)}$ | Complies |
| | NCA3 | 64 | | Complies |
| | NCA4 | 58 | | Complies |
| Night-time Operation Scenario 1 | NCA1 | <44 | 45 $L_{eq(15\text{-}min)}$ | Complies |
| | NCA2 | 52 | 68 $L_{eq(15\text{-}min)}$ | Complies |
| | NCA3 | <44 | | Complies |
| | NCA4 | 60 | | Complies |
| Night-time Operation Scenario 2 | NCA1 | <44 | 45 $L_{eq(15\text{-}min)}$ | Complies |
| | NCA2 | 50 | 68 $L_{eq(15\text{-}min)}$ | Complies |
| | NCA3 | <44 | | Complies |
| | NCA4 | 64 | | Complies |
| Night-time Intermittent Event (Truck Airbrake & Unloading/Loading Activity) | NCA1 | 52 | 59 $L_{max}$ | Complies |

SoundPLAN™ "grid noise map" contours include a 2.5dB façade reflection increase close to a façade. The NPfI adopts non-façade reflection affected noise levels, so that, when assessing noise levels close to a façade, 2.5 dB has been subtracted from the grid map noise levels.

## 5.5 VIBRATION IMPACTS

As observed on site, the facility currently does not generate vibration intensive activity that would cause significant vibration impacts to current residential receivers.

# 6 ROAD TRAFFIC NOISE GENERATED BY THE PROPOSED DEVELOPMENT

The impact of additional traffic generated by the proposed development has been assessed using the EPA RNP, which states the following:

- Section 2.3 of the RNP provides noise assessment criteria at residential (Table 3) and non-residential receivers (Table 4), and for different road classifications.
- Where existing traffic noise is already close to or exceeds the criteria in Tables 3 or 4, the RNP indicates the increase in noise should be assessed instead of the absolute level. For sensitive land uses affected by additional traffic on existing roads, any increase in the total traffic noise level should be limited to 2dB above that of the corresponding 'no build option'. The RNP indicates that an increase of up to 2dB(A) represents a minor impact that is considered barely perceptible to the average person.
- Where night time traffic movements are proposed, the impact on sleep from maximum noise events generated by these movements should also be considered for residential receivers.

The operational analysis prepared by JEP Environment & Planning stipulates a total of 44 inbound/outbound heavy vehicle movements (MRVs & Semi-trailers) per day. The total vehicle volume split is as follows:

**Table 4 – Operational Traffic Analysis**

| **Total Proposed Inbound Traffic Volume** | | **Total Proposed Outbound Traffic Volume** | |
|---|---|---|---|
| **Medium Rigid Vehicles** | **Semi-Trailers** | **Medium Rigid Vehicles** | **Semi-Trailers** |
| 14 | 8 | 14 | 8 |

Mapped truck route studies have also been undertaken and demonstrate that vehicles are unlikely to utilise local streets and will utilise major roadways such as M5 South-western Motorway and Milperra Road.

Based on the proposed total volumes and vehicle routes, it is expected that traffic noise will not increase on local roadways near residential receivers from this proposal.

# 7 CONSTRUCTION NOISE AND VIBRATION

The proposal does not include any demolition, excavation or major construction work for the site. The erection of the southern concrete panel wall will take place and may generate some noise emissions from the site. It is unlikely that such noise emissions will have adverse impact on the nearby receivers.

In the event that the proposal significant construction work, noise and vibration should be assessed prior to commencement. "Noisy" works on site shall be assessed using the quantitative method in accordance with the EPA Interim Construction Noise Guideline.

The assessment should:

- Establish the potentially impacted receivers for noise or vibration. In particular the residential dwellings in the adjacent sites.
- Establish the noise and vibration management levels in accordance with the ICNG.
- Predict noise and vibration impacts.
- Where noise or vibration levels would exceed the management levels recommend reasonable and feasible mitigation.
- Where noise or vibration would exceed highly affected management levels apply additional mitigation such as respite periods. This would typically apply to hammering using excavator mounted hammers and similar highly intrusive activities.
- Recommend appropriate noise and vibration monitoring to be undertaken during the more intensive phases of the project.

A project specific Construction Noise and Vibration Management Plan should be developed using the results of the assessment that will be used to manage construction noise and vibration impacts, which may include monitoring, community liaison and complaints handling, noise mitigation to be adopted, training and management, etc.

# 8 SUMMARY OF COMPLYING MITIGATION

Initial modelling indicated that additional mitigation is needed to achieve compliance with the trigger levels. This additional mitigation is described below, along with other measures to minimise impacts.

## 8.1 OPERATIONAL NOISE

### 8.1.1 Management Controls

- The hours of operation shall be as per Section 4.2.
- Vehicles are to limit idling as much as feasibly possible.

### 8.1.2 Physical Controls

- The concrete panel wall shall be constructed along the southern boundary at a total wall height of 5m. The wall shall be solid and imperforate. Proprietary products include Modular Wall Systems, Wallmark, etc.

## 8.2 CONSTRUCTION NOISE

### 8.2.1 Management Controls

- In the event that the proposal includes demolition, excavation or major construction work associated with the site, a project specific Construction Noise and Vibration Management Plan should be developed using the results of the assessment that will be used to manage construction noise and vibration impacts, which may include monitoring, community liaison and complaints handling, noise mitigation to be adopted, training and management, etc.

# 9 CONCLUSION

This report summarises the potential noise and vibration impact assessment undertaken for the proposed development. Operational impacts have been assessed, as well as construction noise and noise from traffic generated by the proposal.

- An assessment of operational noise emissions has been undertaken using Noise Policy for Industry. Site noise emissions from the development have been predicted and assessed against the trigger levels determined using the Policy.
- It is concluded that with the implementation of the mitigation in Section 8, operational noise emissions from the proposed development will comply with noise criteria established for the site.
- Additional road traffic noise generated by the proposed development has been reviewed using the EPA "Road Noise Policy" guideline and the operational analysis undertaken by JEP Environment & Planning.
- Noise and vibration emissions from construction are not expected as part of this proposal. In the event that construction work is proposed, this should be assessed and managed in accordance with the EPA "Interim Construction Noise Guideline", as indicated in Section 8 of this report.

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

Yours faithfully,

Acoustic Logic Pty Ltd
Adrian Zappia
MAAS

# APPENDIX A AMBIENT NOISE MONITORING

This appendix summarises the ambient noise data measured near the subject site, and the calculated noise level descriptors adopted to characterise the existing noise environment.

Monitoring has been undertaken to provide the following ambient data:

- Background noise levels at the surrounding residential properties.
- Traffic noise levels.
- Noise generated by adjacent land uses.

## A.1 NOISE DESCRIPTORS

Ambient noise constantly varies in level from moment to moment, so it is not possible to accurately determine prevailing noise conditions by measuring a single, instantaneous noise level.

To quantify ambient noise, a 15 minute measurement interval is typically utilised. Noise levels are monitored on a continuous basis over this period, and statistical and integrating techniques are used to characterise the noise being measured.

The principal measurement parameters are:

**$L_{eq}$** - represents the average noise energy during a measurement period. This parameter is derived by integrating the noise levels measured over the measurement period. $L_{eq}$ is important in the assessment of noise impact as it closely corresponds with how humans perceive the loudness of steady state and quasi-steady state noise sources (such as traffic noise).

**$L_{90}$** – This is commonly used as a measure of the background noise level as it represents the noise level heard in the quieter periods during the measurement interval. The $L_{90}$ parameter is used to set noise emission criteria for potentially intrusive noise sources since the disturbance caused by a noise source will depend on how audible it is above the pre-existing noise environment, particularly during quiet periods, as represented by the $L_{90}$ level.

**$L_{10}$** is used in some guidelines to measure noise produced by an intrusive noise source since it represents the average of the loudest noise levels produced at the source. Typically, this is used to assess noise from licenced venues.

**$L_{max}$** is the highest noise level produced during a noise event, and is typically used to assess sleep arousal impacts from short term noise events during the night. It is also used to assess internal noise levels resulting from aircraft noise and ground vibration induced noise from railways.

**$L_1$** is sometimes used in place of $L_{max}$ to represent a typical noise level from a number of high level, short term noise events.

## A.2 UNATTENDED LONG TERM NOISE MONITORING

### A.2.1 Equipment Used

Unattended noise monitoring was conducted using a Rion NL-42 (Type 2) noise monitor.

Monitoring was continuous, with statistical noise levels recorded at 15-minute intervals throughout the monitoring period. Measurements were taken on "A" frequency weighting and fast time response, unless noted otherwise.

All monitoring equipment used retains current calibration - either manufacturers' calibration or NATA certified calibration. The monitors were field calibrated at the beginning and the end of the measurement with no significant drift in calibration noted.

### A.2.2 Locations Monitored

The locations monitored are indicated Figure 2. A photograph of the monitoring location is provided in Figure 3.

### A.2.3 Weather Affected and Extraneous/Outlying Data

Periods affected by adverse weather conditions (as defined by Fact Sheet B) are indicated on the following data graphs, and have been excluded from the assessment. Weather data was obtained from records provided by the Bureau of Meteorology for the Bankstown Airport AWS.

As the Bureau of Meteorology wind data is typically obtained at an exposed location at 10m above ground level, and the monitoring locations were at approximately 1.5m above ground in more sheltered locations a wind multiplying factor of 0.5 has been applied to the BOM data to estimate the wind speed at the microphone location.

Monitoring periods excluded include:

- Tuesday, 13th August 2024 – Night-time period.
- Wednesday, 14th August 2024, Daytime period
- Friday 16th August 2024, Evening period.


**Figure 2 – Noise Monitoring Locations**

**Figure 3 – Noise Monitoring Location – Carrington Street, Revesby**

## A.3 CALCULATION OF REPRESENTATIVE AMBIENT NOISE LEVELS

The ambient, assessment and rating background levels have been determined from the unattended, long-term noise monitoring data based on the methodology in the Noise Policy for Industry Fact Sheet B.

## A.4 RATING BACKGROUND NOISE LEVELS

The following tables summarise the assessment background noise levels (ABL) for each location. Note that where no ABL is indicated, this is because that period was significantly affected by adverse weather or other extraneous noise.

The day, evening and night periods are as defined in the NPfI, as follows:

- Day - period from 7 am to 6 pm Monday to Saturday or 8 am to 6 pm on Sundays and public holidays
- Evening - the period from 6 pm to 10 pm
- Night - the remaining periods

In accordance with the NPfI:

- If the calculated evening rating background noise level is higher than the day level, the day rating background noise level has been adopted for the evening period.
- If the calculated night rating background noise level is higher than the evening level, the evening rating background noise level has been adopted for the evening period.
- If the calculated day rating background noise level was less than 35 dB(A), a "default" background of 35 dB(A) has been adopted.
- If the calculated evening or night rating background noise level was less than 30 dB(A), a "default" background of 30 dB(A) has been adopted.
- Where monitoring was conducted within 3m of a significant sound reflecting surface, 2.5 dB(A) has been subtracted from the calculated rating background to account for an increase in noise from reflections.

### Table 5 – Assessment Background Noise Levels

| Location | Date | ABL | | |
|---|---|---|---|---|
| | | Day | Evening | Night |
| Noise Monitoring Location 100 Carrington Street, Revesby | Tuesday, 13th August 2024 | 59 | 54 | - |
| | Wednesday, 14th August 2024 | - | 57 | 43 |
| | Thursday, 15th August 2024 | 56 | 56 | 44 |
| | Friday, 16th August 2024 | 55 | - | 45 |
| | Saturday, 17th August 2024 | 60 | 57 | 45 |
| | Sunday, 18th August 2024 | 57 | 54 | 41 |
| | Monday, 19th August 2024 | 55 | 53 | 43 |
| | Tuesday, 20th August 2024 | 56 | 54 | 45 |
| | Wednesday, 21st August 2024 | 57 | 55 | 42 |
| | Thursday, 22nd August 2024 | 55 | 55 | 46 |
| | Friday, 24th August 2024 | - | - | - |
| | **Calculated RBL** | **56** | **55** | **44** |
| | **Adopted RBL** | **56** | **55** | **44** |

## A.5 AMBIENT NOISE LEVELS

The NPfI ambient noise levels calculated for each location are summarised in the following table.

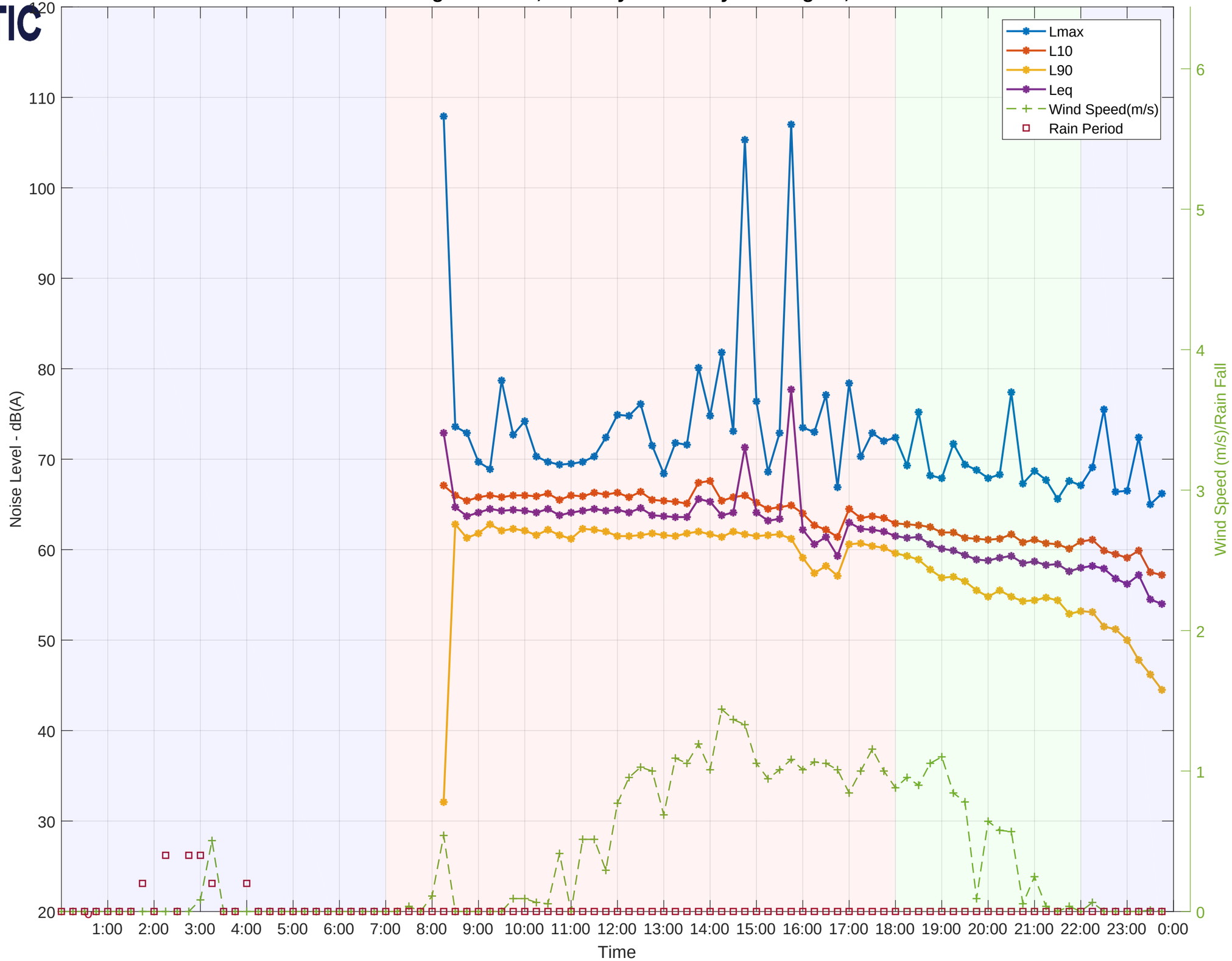
### Table 6 – Ambient Noise Levels

| Location | Ambient Noise Level (dB(A) $L_{eq,period}$) | | |
|---|---|---|---|
| | Day | Evening | Night |
| Noise Monitoring Location 100 Carrington Street, Revesby | 63 | 60 | 58 |

## A.6 UNATTENDED MONITORING DATA GRAPHS

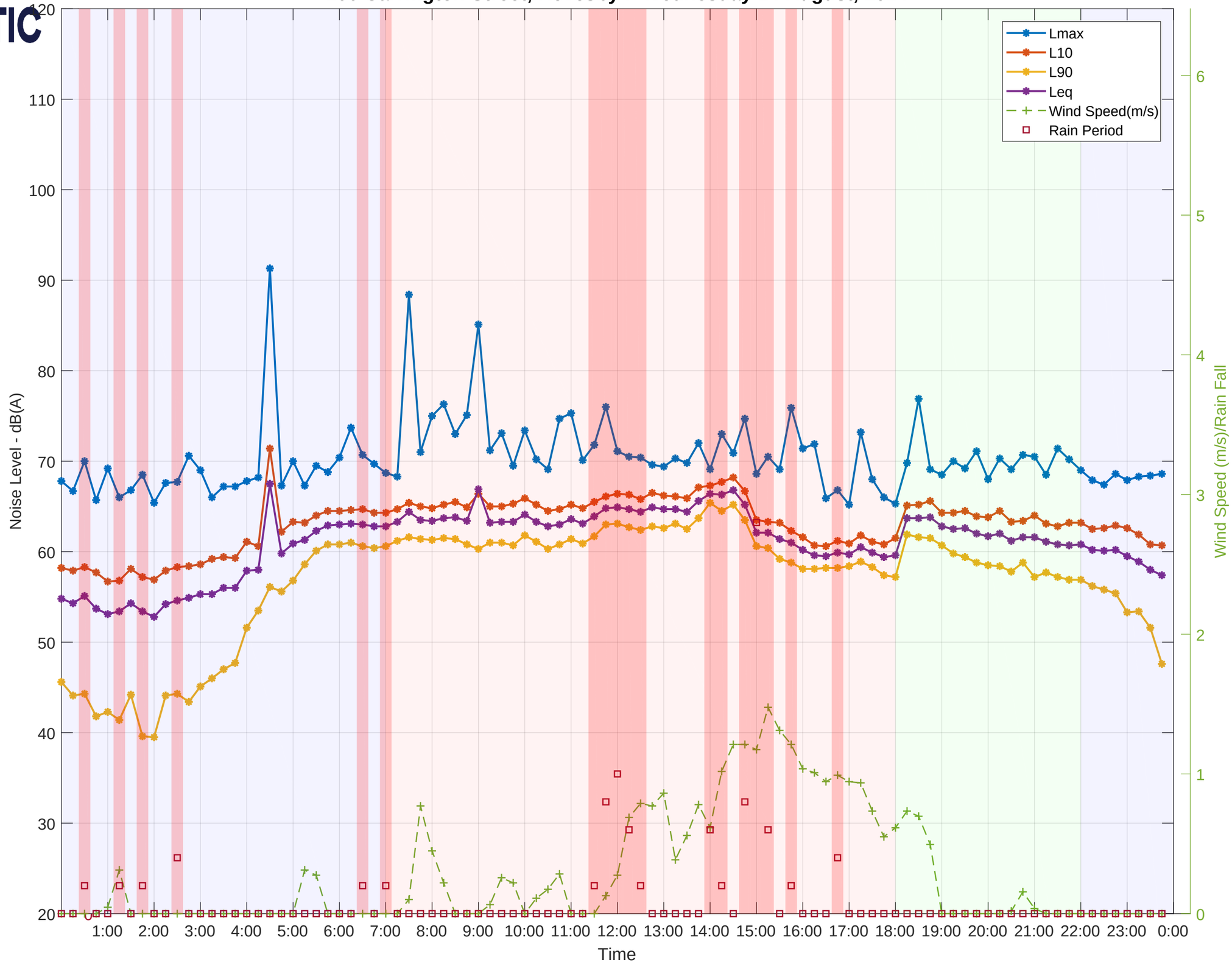
ACOUSTIC LOGIC

# 100 Carrington Street, Revesby : Tuesday 13 August, 2024



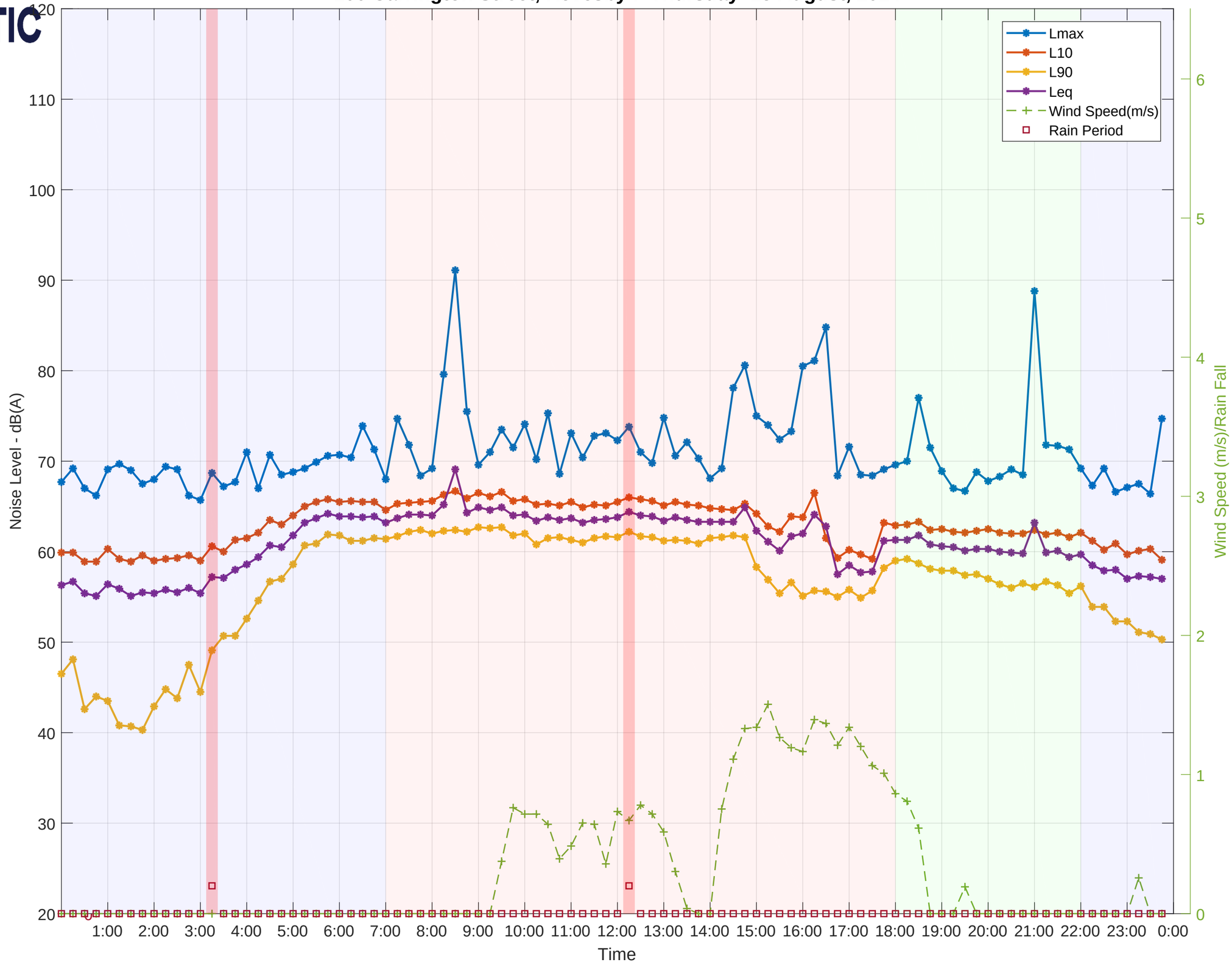
ACOUSTIC LOGIC

# 100 Carrington Street, Revesby : Wednesday 14 August, 2024



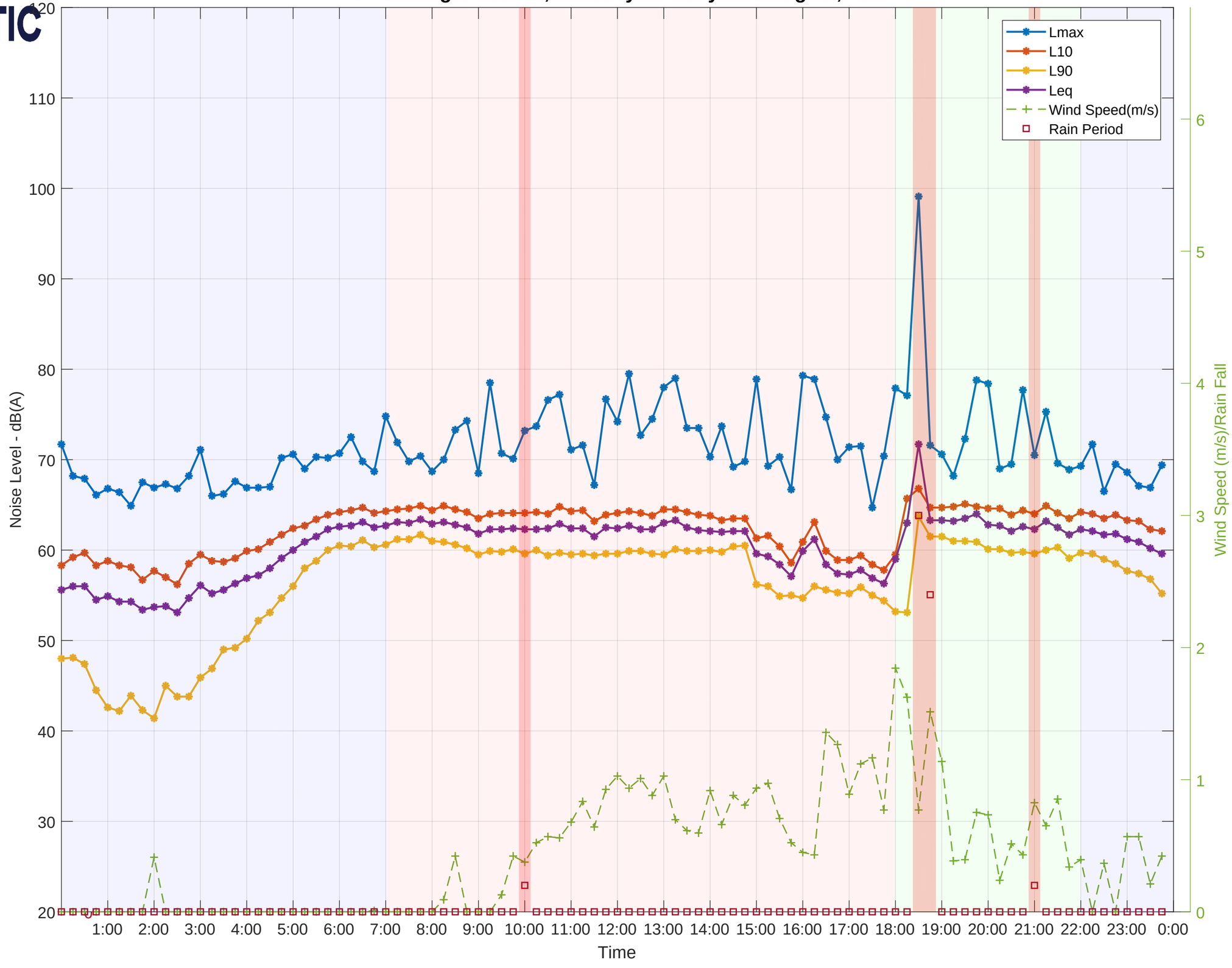
ACOUSTIC LOGIC

# 100 Carrington Street, Revesby : Thursday 15 August, 2024



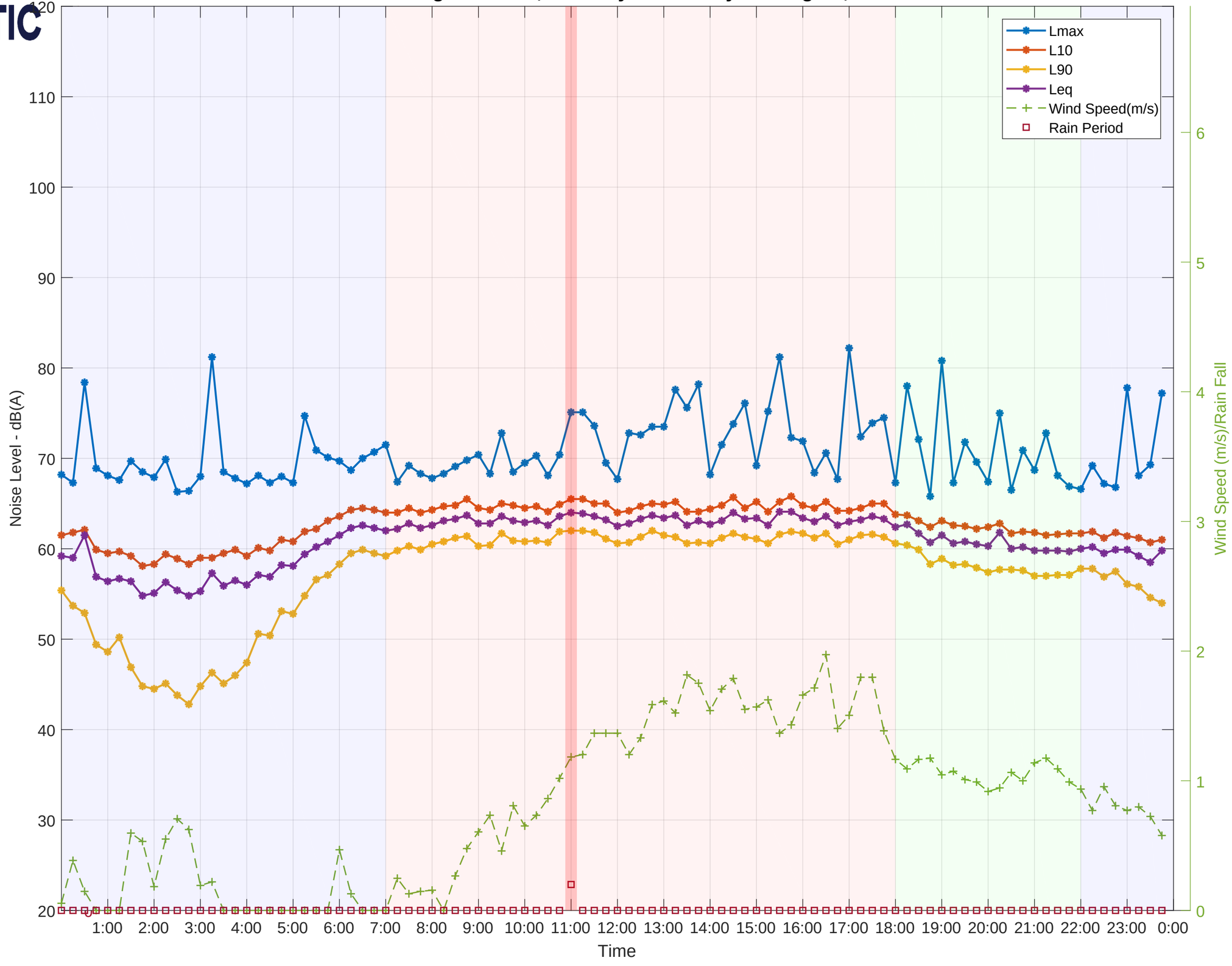
ACOUSTIC LOGIC

# 100 Carrington Street, Revesby : Friday 16 August, 2024



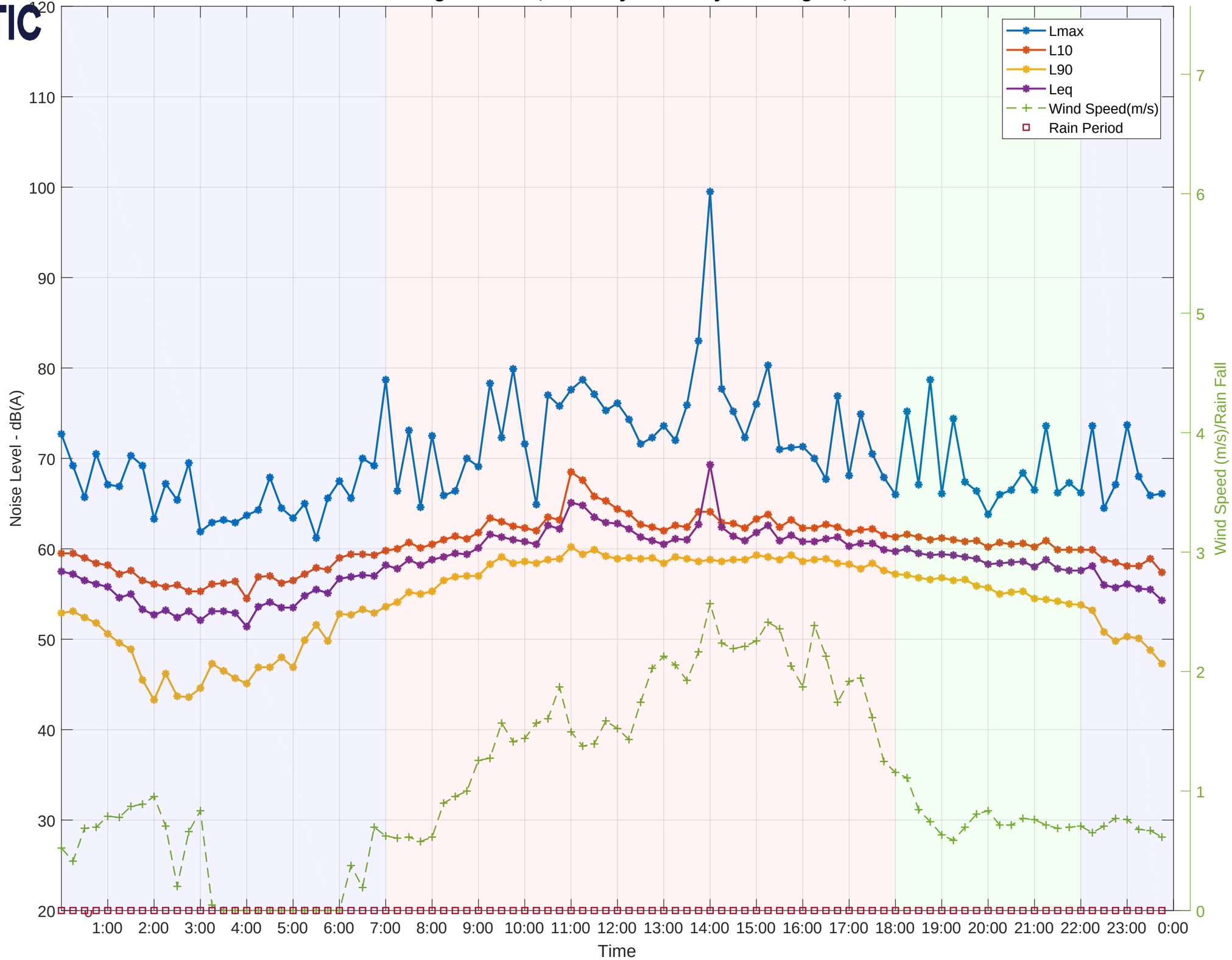
ACOUSTIC LOGIC

# 100 Carrington Street, Revesby : Saturday 17 August, 2024



ACOUSTIC LOGIC

# 100 Carrington Street, Revesby : Sunday 18 August, 2024



ACOUSTIC LOGIC

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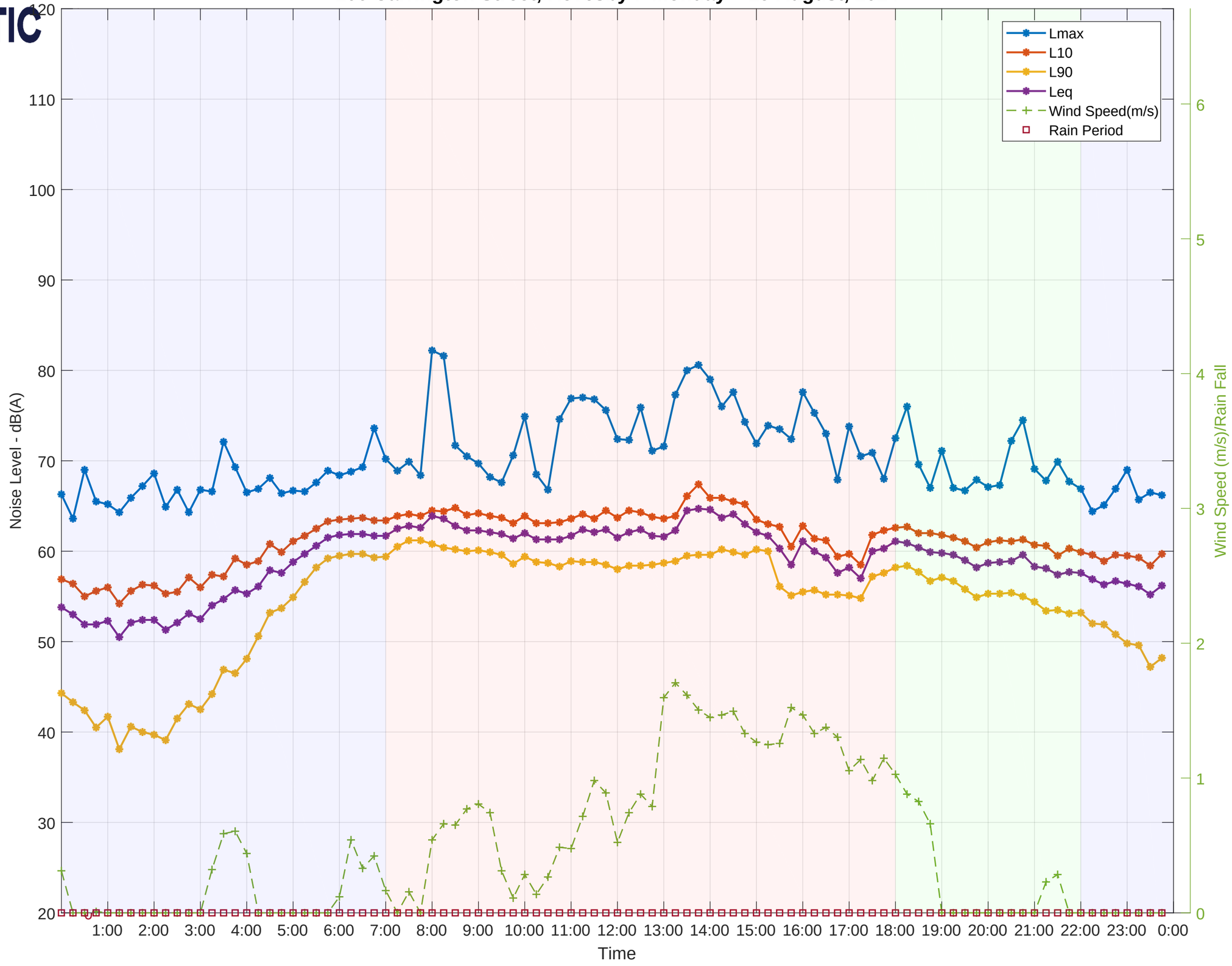

ACOUSTIC LOGIC

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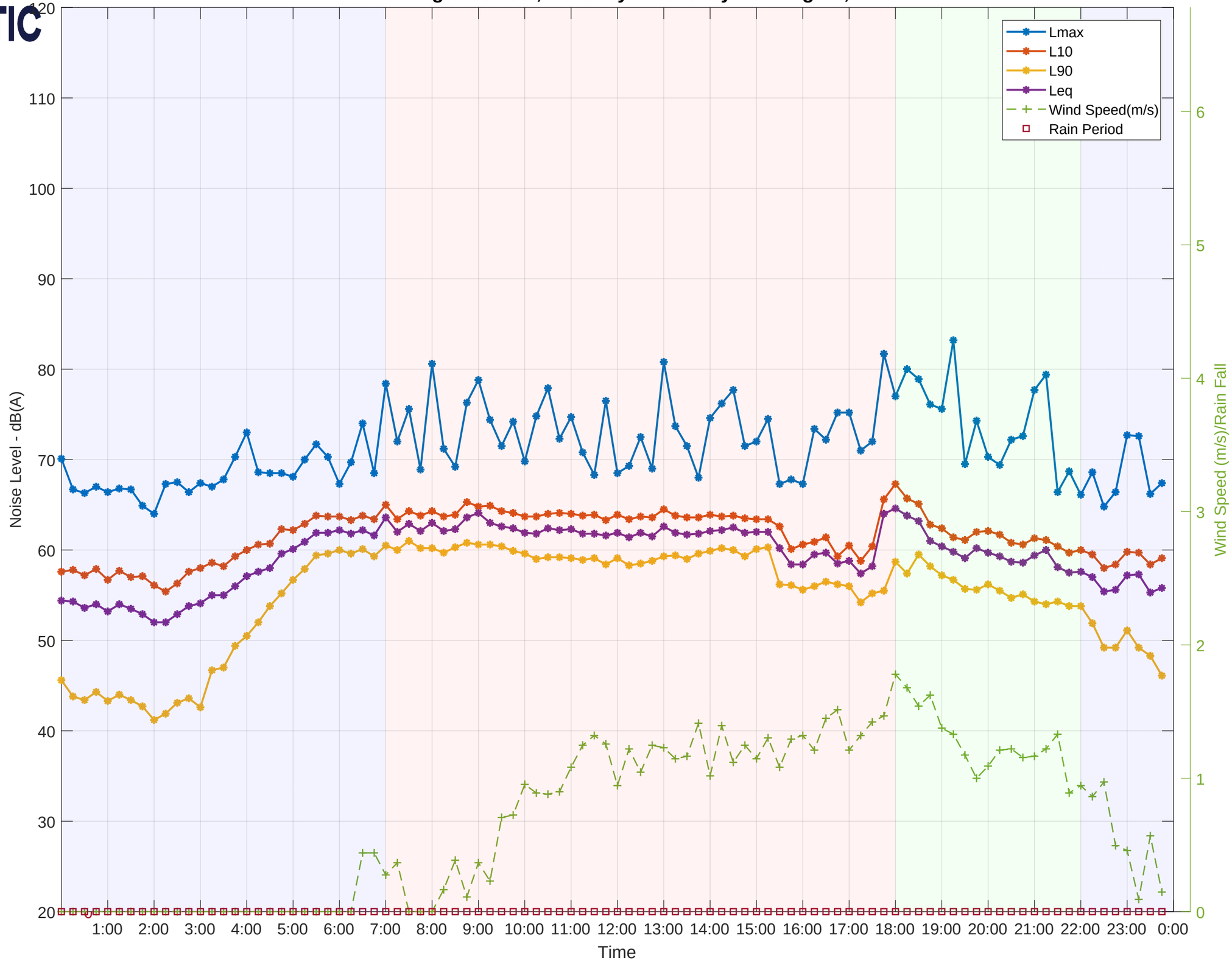

ACOUSTIC LOGIC

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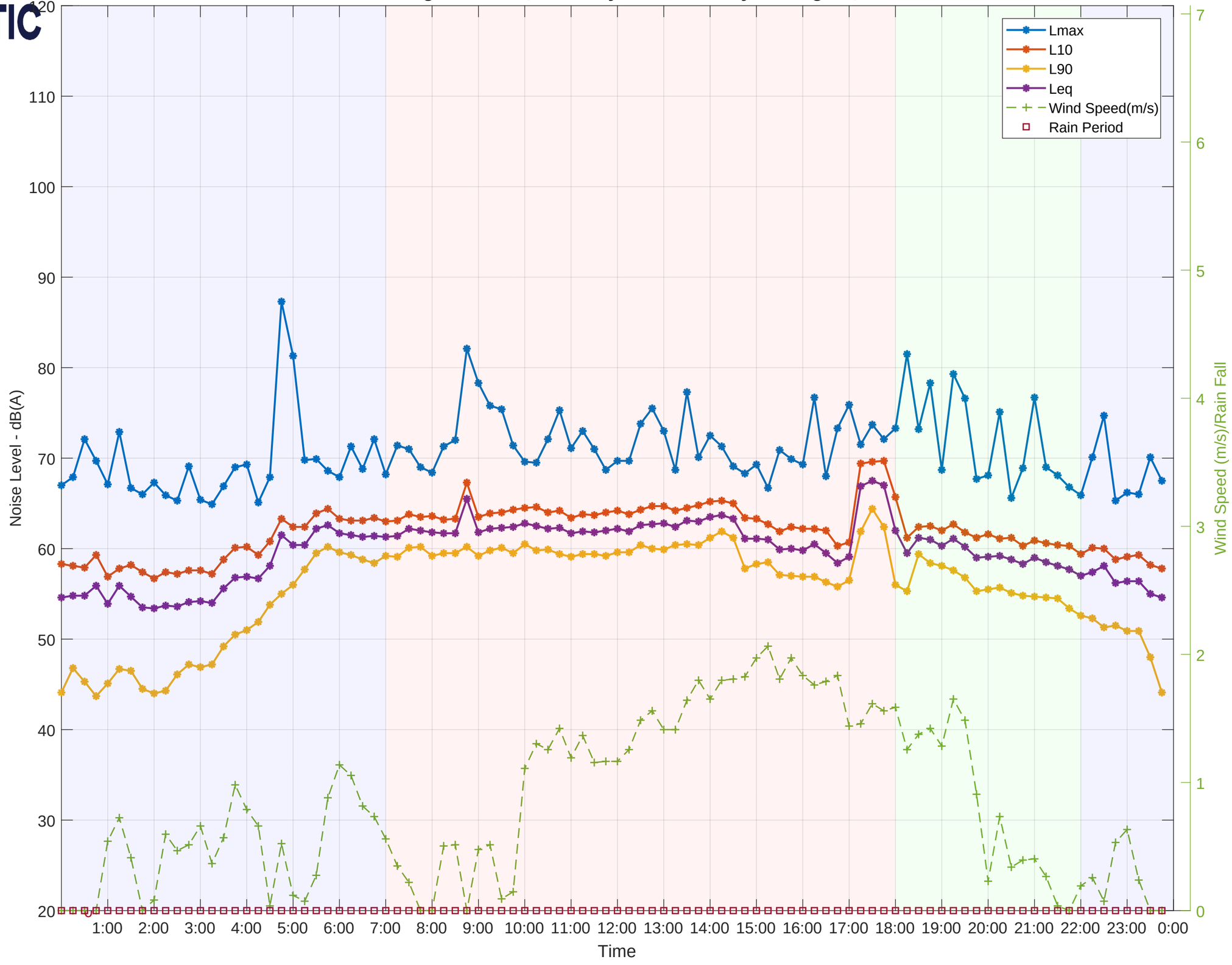
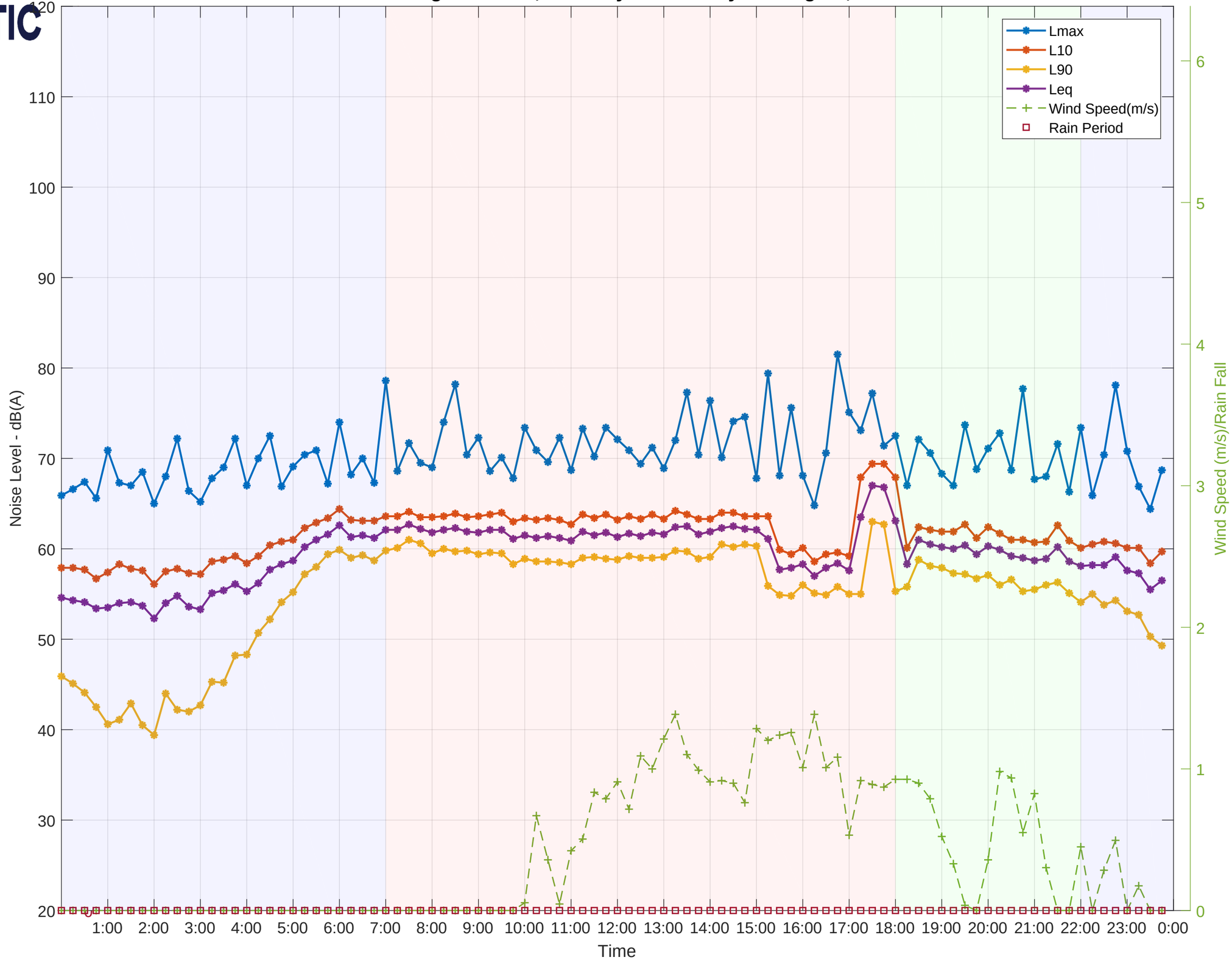
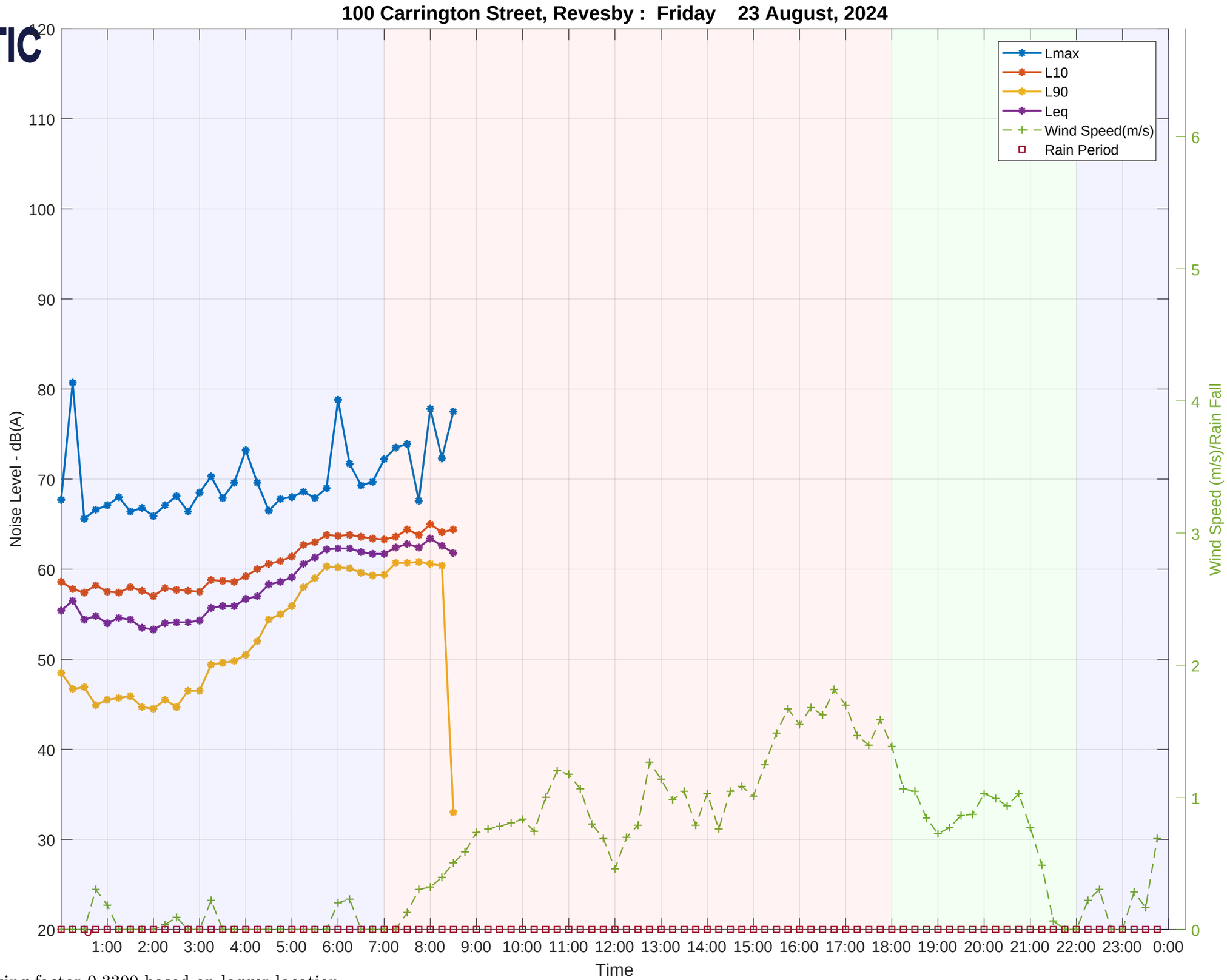


ACOUSTIC LOGIC

# 100 Carrington Street, Revesby : Thursday 22 August, 2024



ACOUSTIC LOGIC




Wind Speed is corrected using factor 0.3300 based on logger location

# APPENDIX B EPA NOISE POLICY FOR INDUSTRY TRIGGER LEVELS

Project specific assessment trigger levels have been determined for each noise source applying at the identified potentially most impacted receivers.

## B.1 NPFI TRIGGER LEVELS

The NPfI requires noise impacts at residential receivers to be assessed in 3 ways:

- Whether the emitted noise is unreasonably loud relative to ambient background noise. (which the EPA calls the "intrusiveness" trigger level).
- Whether the noise emitted is unreasonably loud in an absolute sense, and consistent with surrounding land use and environment. ("amenity" trigger level)
- For night noise emissions, whether discrete noise events are likely to adversely impact sleep ("maximum noise level" trigger levels).

For other receiver types only the amenity trigger level is relevant.

### B.1.1 Intrusiveness

The $L_{eq,15min}$ descriptor is used for the intrusiveness trigger level, and is set at a level that is 5dB(A) above the rating background noise level.

### B.1.2 High Traffic Project Amenity Noise Level

Table 2.2 of the NPfI (repeated below) sets out acceptable noise levels for various receiver types. The NfPI permits the project specific amenity level to be increased in areas where ambient noise levels already significantly exceed the levels in Table 2.2 of the NPfI. Section 2.4.1 discusses amenity noise levels in areas of high traffic noise, of which the nearest sensitive receivers are comparable to. The high traffic project amenity noise level may be only applied if all the following apply:

- Traffic noise is identified as the dominant noise source at the site.
- The existing traffic noise level (determined using the procedure outlined in A2, Fact Sheet A, that is measuring traffic instead of industrial is 10 dB or more above the recommended amenity noise level for the area.
- It is highly unlikely that traffic noise levels will decrease in the future.,

In the context of this project, the nearest residential receivers (NCA1) along Carrington Road, Revesby are directly adjacent to the M5 South-western Motorway and on-site investigations have determined traffic noise to be the dominant noise source at these sites. The existing traffic noise levels (ambient noise levels) are approximately 10 dB(A) above the recommended amenity noise level for the area (Suburban). This is demonstrated in Table 6. Additionally, given the adjacent busy roadway is considered a 'Motorway', it is unlikely that the traffic noise levels will decrease in the future given the roadway acts a major road corridor linking Sydney to Campbelltown and Canberra.

The project amenity noise level is derived from the $L_{Aeq,\ period(traffic)}$ minus 15 dB(A).

### B.1.3 Noise Characteristic Modifying Factors

Where applicable, the emitted intrusive noise level should be modified (increased or decreased) to account for characteristics such as tonality, low frequency, duration, etc according to NPfI Fact Sheet C.

### B.1.4 Maximum Noise Level Assessment

The purpose of this assessment is to identify whether discrete, night time noise events have the potential to produce adverse sleep impacts.

Section 2.5 of NPfI recommends the following procedure to assess the potential for adverse sleep disturbance.

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

- *$L_{eq(15min)}$ 40 dB(A) or the prevailing RBL ($L_{90}$) plus 5 dB, whichever is the greater, and/or*
- *$L_{max}$ 52 dB(A) or the prevailing RBL ($L_{90}$) 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.*

*Other factors that may be important in assessing the extent of impacts on sleep include:*

- *how often high noise events will occur*
- *the distribution of likely events across the night-time period and the existing ambient maximum events in the absence of the subject development*
- *whether there are times of day when there is a clear change in the noise environment (such as during early-morning shoulder periods)*
- *current scientific literature available at the time of the assessment regarding the impact of maximum noise level events at night.*

*Maximum noise level event assessments should be based on the $L_{AFmax}$ descriptor on an event basis under 'fast' time response. The detailed assessment should consider all feasible and reasonable noise mitigation measures with a goal of achieving the above trigger levels.*

## B.2 PROJECT SPECIFIC TRIGGER LEVELS

The following table summarises the trigger levels applying at each of the identified "most impacted" receivers. These have been determined based on the NPfI methodology described above and the measured rating background noise levels.

The trigger levels in bold indicate the most stringent trigger level at each location.

### Table 7 – Project Specific Noise Trigger Levels

| Noise Catchment Area | Time | RBL dB(A) $L_{90}$ | Trigger Noise Level (dB(A) $L_{eq,15min}$) | | |
|---|---|---|---|---|---|
| | | | Intrusiveness | Amenity | Max Event |
| NCA1 - Residential | Day | 56 | 61 | **48** | n/a |
| | Evening | 55 | 60 | **45** | n/a |
| | Night | 44 | 49 | **43** | 49 $L_{eq}$<br>59 $L_{max}$ |
| NCA2 – 4 – Industrial | Day | n/a | n/a | 68 | n/a |

As the proposed development does not operate during the night a maximum noise level assessment is not required.

## APPENDIX C SOUNDPLAN™ MODELLING OUTPUTS

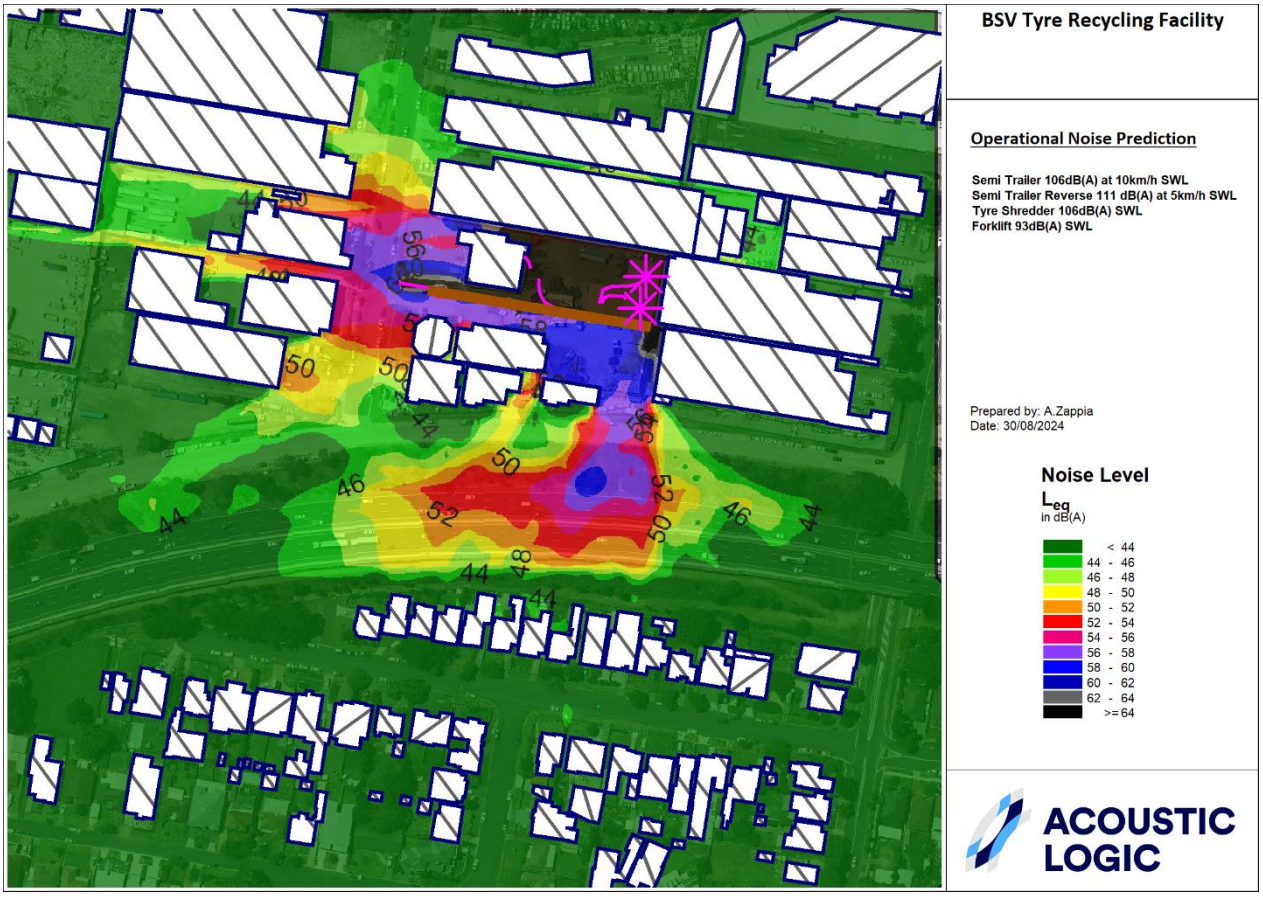



**Figure 4 – Day/Eve Operation Scenario 1 Operational Noise Contour (1.5m NPfl Assessment Height)**

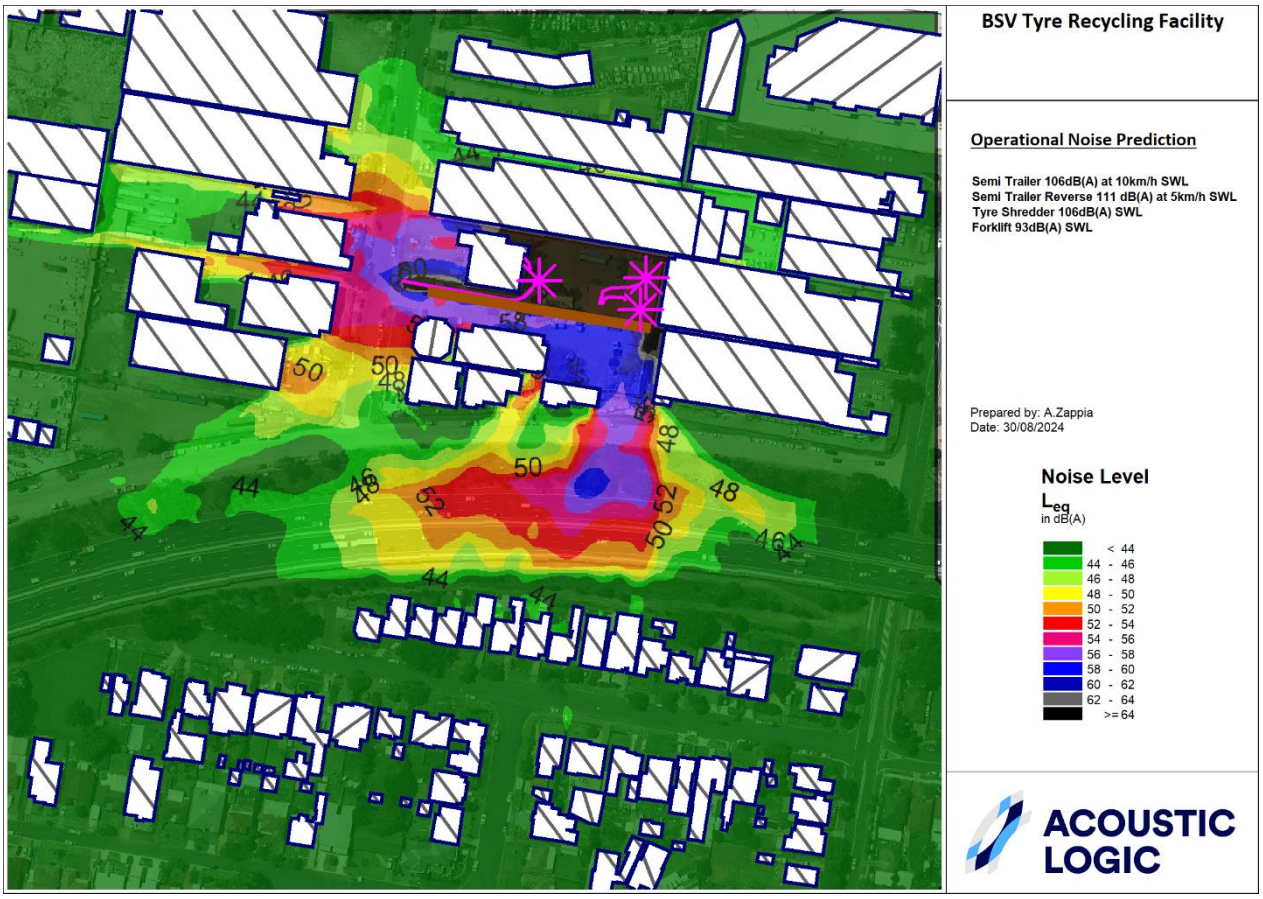



**Figure 5 - Day/Eve Operation Scenario 2 Operational Noise Contour (1.5m NPfl Assessment Height)**

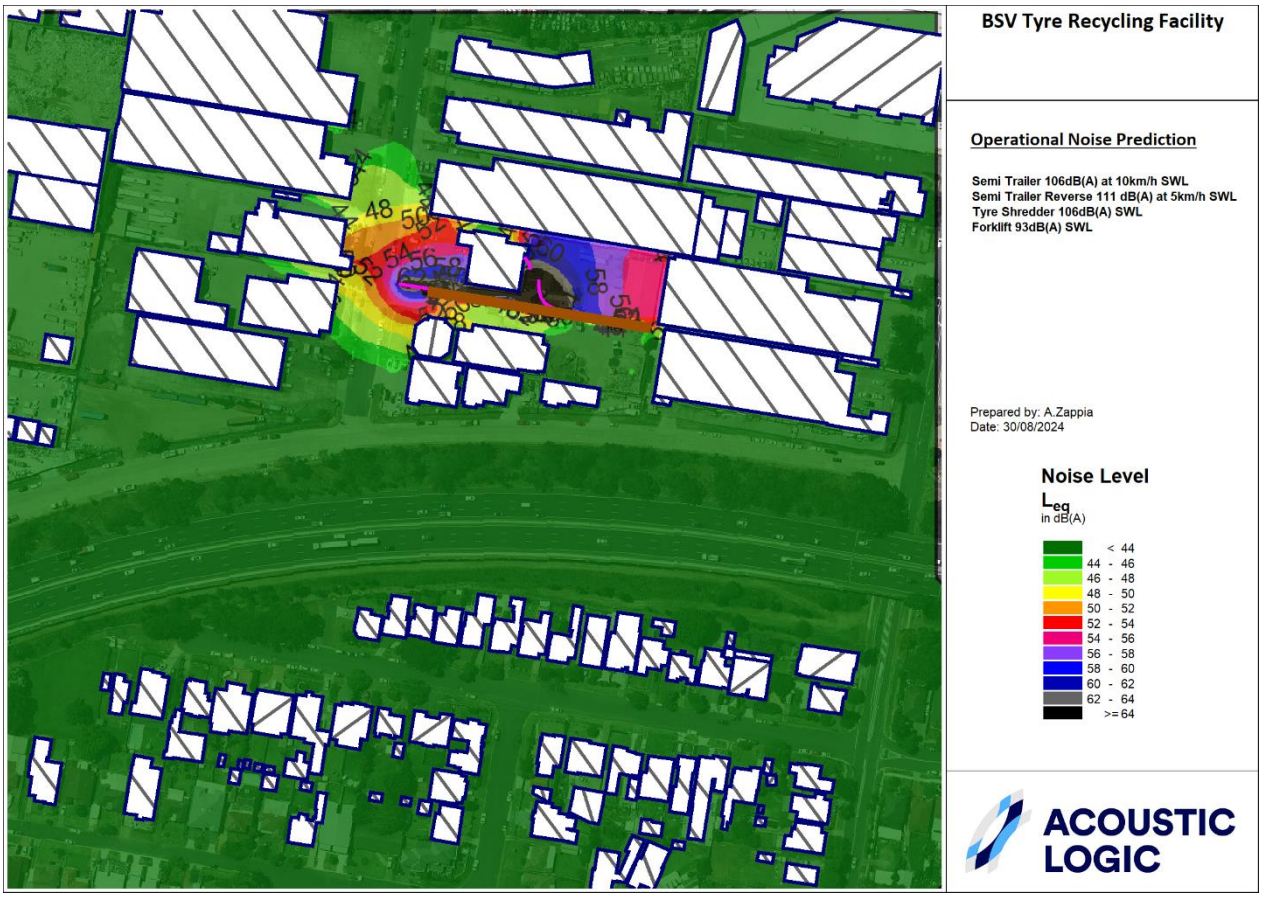



**Figure 6 – Night Operation Scenario 1 Operational Noise Contour (1.5m NPfl Assessment Height)**

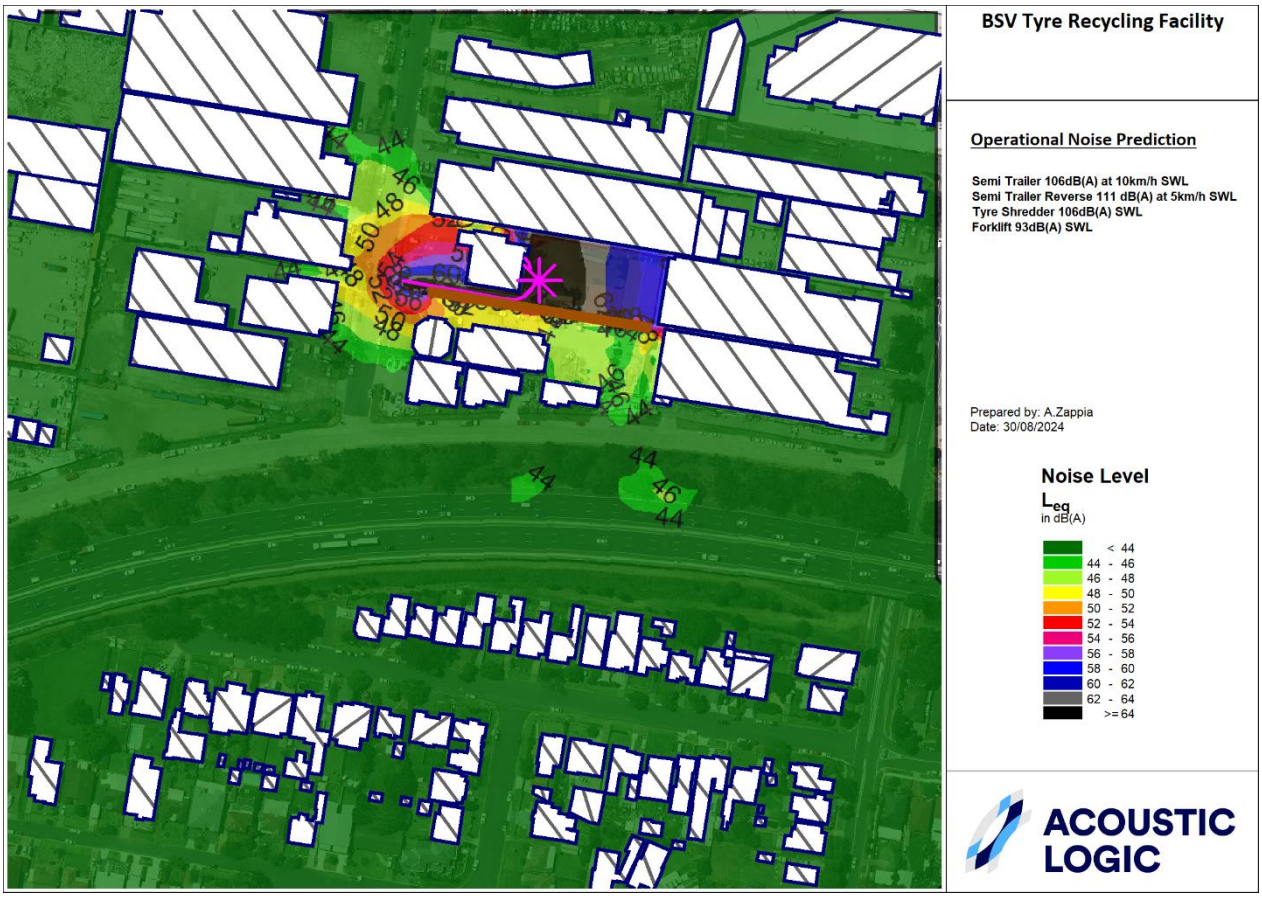



**Figure 7 – Night Operation Scenario 2 Operational Noise Contour (1.5m NPfl Assessment Height)**

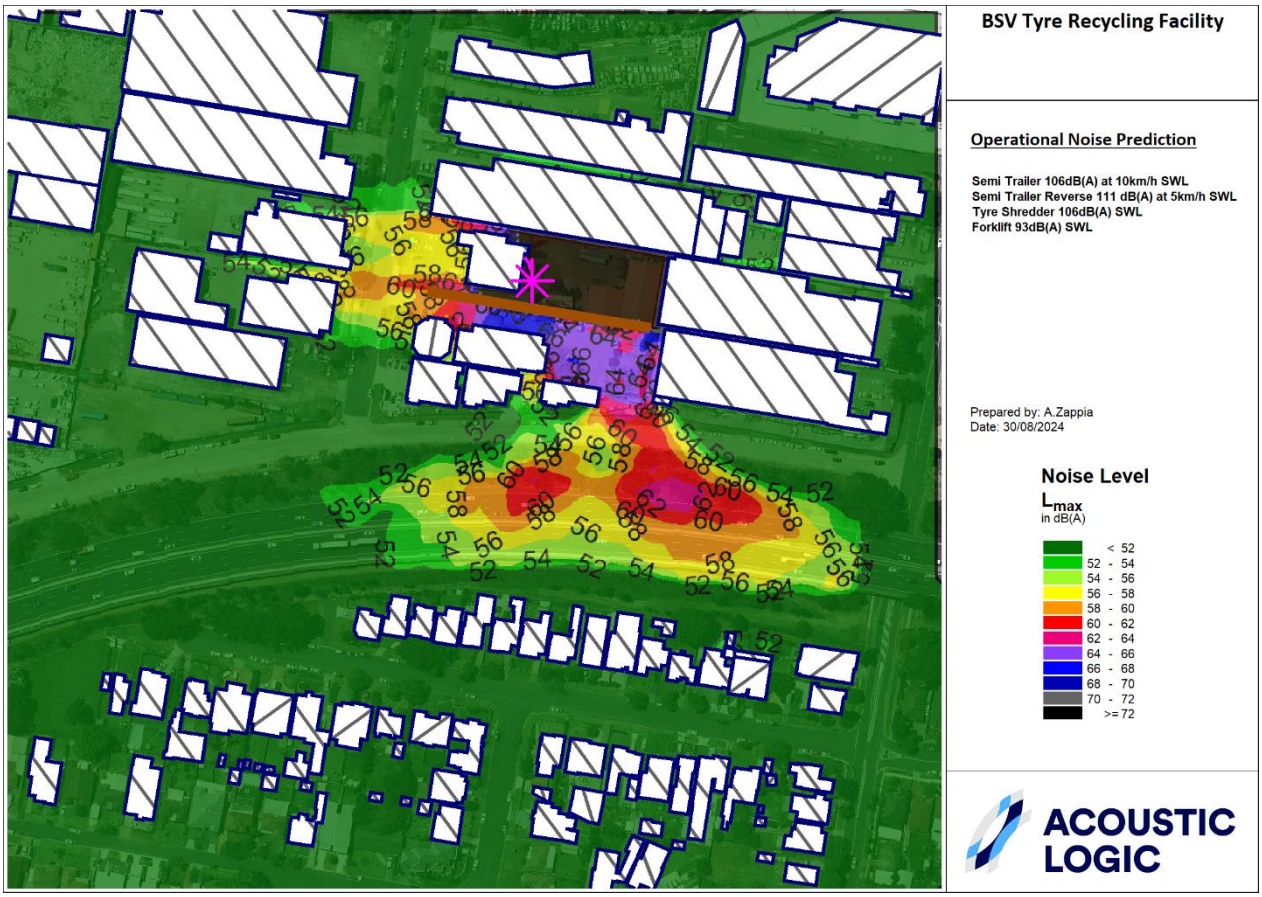



**Figure 8 – Peak Noise Event Scenario Operational Noise Contour (1.5m NPfI Assessment Height)**

## APPENDIX D NOISE SOURCE ASSUMPTIONS

Noise source (point/stationary and/or line/moving) levels used in this assessment are as follows:

### Table 8 – Assumed Noise Sources

| Noise generating operation/activity | Plant/Equipment item | Individual source/activity $L_{eq, t}$ | | | |
|---|---|---|---|---|---|
| | | SWL dB(A) | Duration | Speed (km/h) | Modelled Source Height |
| Heavy Vehicle moving forward on site | Medium-rigid Vehicle | 106 | 15 min | 10 | 1.5 |
| Heavy Vehicle reversing on site | Medium-rigid Vehicle | 111 | 15 min | 5 | 1.5 |
| Peak noise events | Truck airbrake, intermittent events from dropping of tyres into truck trailer, etc. | 115 | 1 sec | - | 1.5 |
| Tyre shredding | Tyre Shredder | 106 | 15 min | - | 1.5 |
| Typical facility operations | Forklift movements | 93 | 15 min | - | 1.5 |