

Appendix 11.1. Summary of background survey data used to characterise baseline sound climate.

Hoare Lea have conducted an environmental noise monitoring exercise at the Site to characterise the local sound climate and establish the background noise levels for the purposes of setting appropriate plant noise limits.

Hoare Lea noise survey 2023 and 2024.

The Site has been subject to a background noise survey by Hoare Lea, as detailed within report REP-1015447-AM-20241010-Acoustic planning report (Toton West) - Rev00.

At the time of survey, the noise climate local to the Site was road traffic on the nearby roads with localised noise along the western site boundary from train pass-bys, trains idling, and occasional train horns associated with the railway sidings to the west.

Survey Methodology

An unattended noise survey of the Site was conducted at multiple locations between Friday 01 December 2023 and Tuesday 05 December 2023 (Position 1) and between 07 October 2024 and 09 October 2024 (Position 2). The survey locations are shown on Figure 11.1.1 below.

Figure 11.1.1: Acoustic survey locations



The unattended survey consisted continuous measurement of 15-minute duration samples of ambient noise levels ($L_{Aeq,15 \text{ min}}$), fast time weighted maximum noise levels ($L_{Amax(fast),15 \text{ min}}$) and background sound levels ($L_{A90,15 \text{ min}}$). Measurements were conducted at a height of 1.4 metres above ground height and were conducted in free-field conditions.

The weather remained suitable for noise measurement throughout the survey period being generally fine and dry with low wind speeds.

The equipment was field calibrated prior to and at the conclusion of each set of measurements with no discernible drift in level observed.

The survey equipment is listed below:

Location 1:

- Rion NL-52 Sound Level Meter (serial number 00632046)
- Rion NH-25 Pre-amplifier (serial number 32074)
- Rion UC-59 Microphone (serial number 18987)

Location 2:

- Rion NL-52 Sound Level Meter (serial number 00710261)
- Rion NH-25 Pre-amplifier (serial number 10255)
- Rion UC-59 Microphone (serial number 18984)

Survey Results

The average ambient noise levels measured at the above location are summarised below:

Measurement Location	Average ambient noise level, $L_{Aeq,T}$ dB	
	Daytime (07:00 – 23:00)	Night time (23:00 – 07:00)
Location 1	65	58
Location 2	54	54

Table 11.1.1: Measured average ambient noise levels

The data has been processed using statistical analysis as guidance from British Standard 4142. The results are as presented in Figure 11.1.2-7 to establish lowest typical background noise.

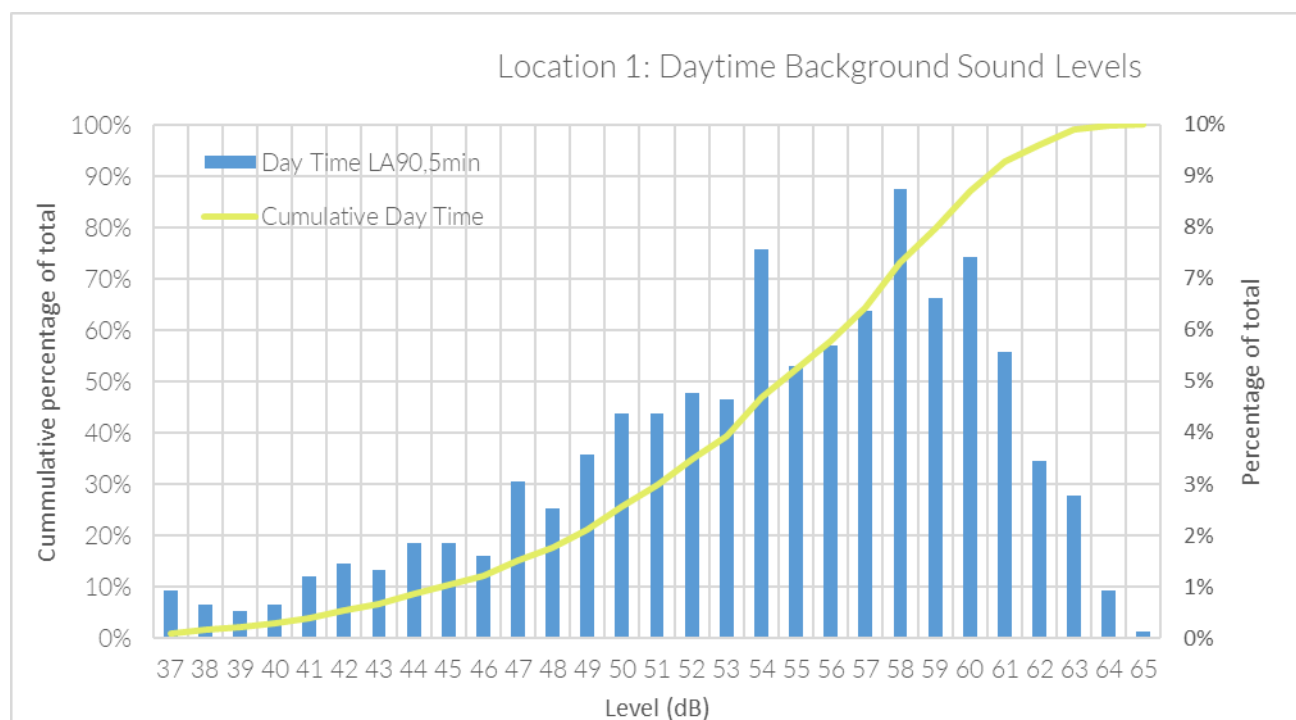


Figure 11.1.2: Daytime background sound level statistical analysis at Location 1

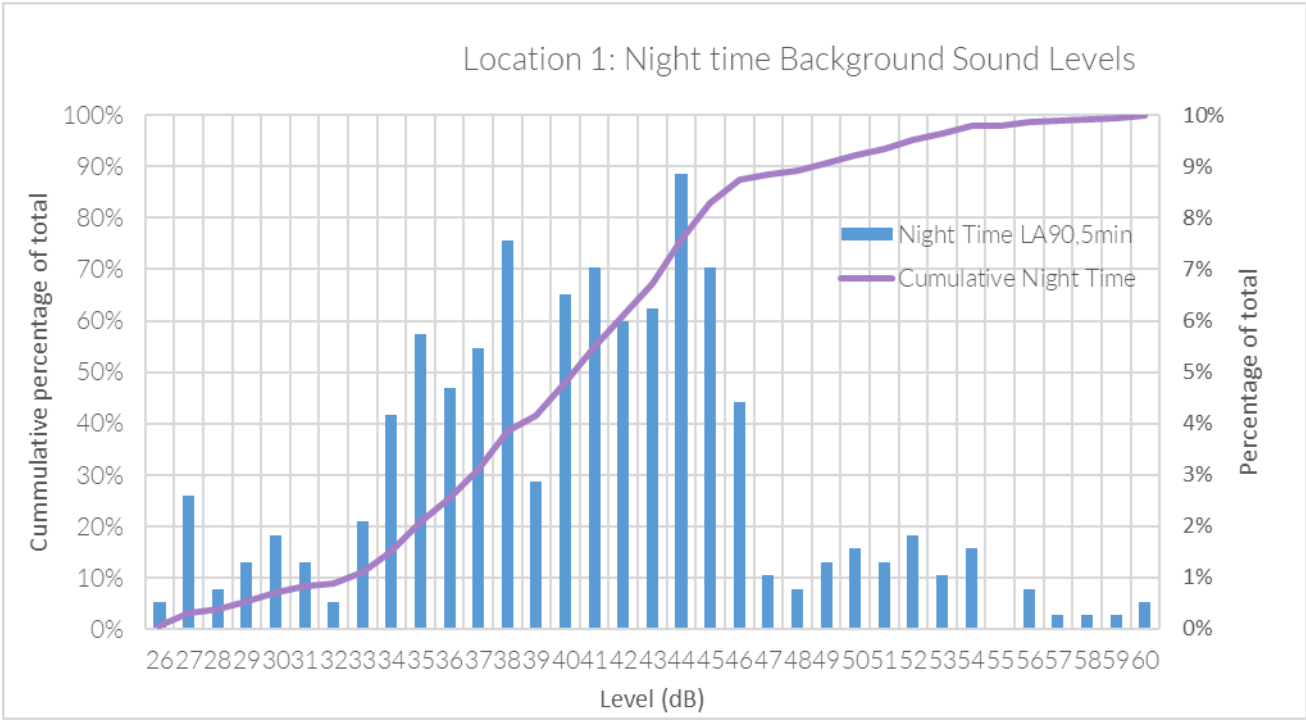


Figure 11.1.3: Night-time background sound level statistical analysis at Location 1

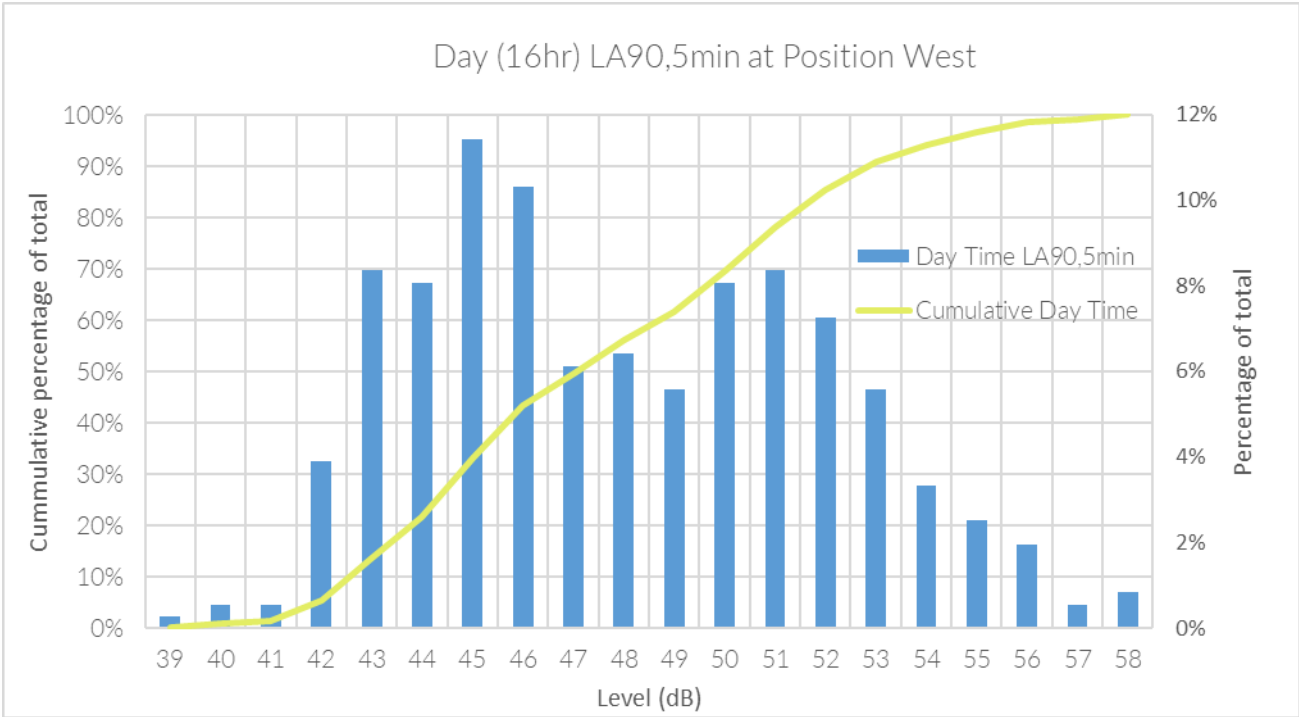


Figure 11.1.4: Daytime background sound level statistical analysis at Location 2

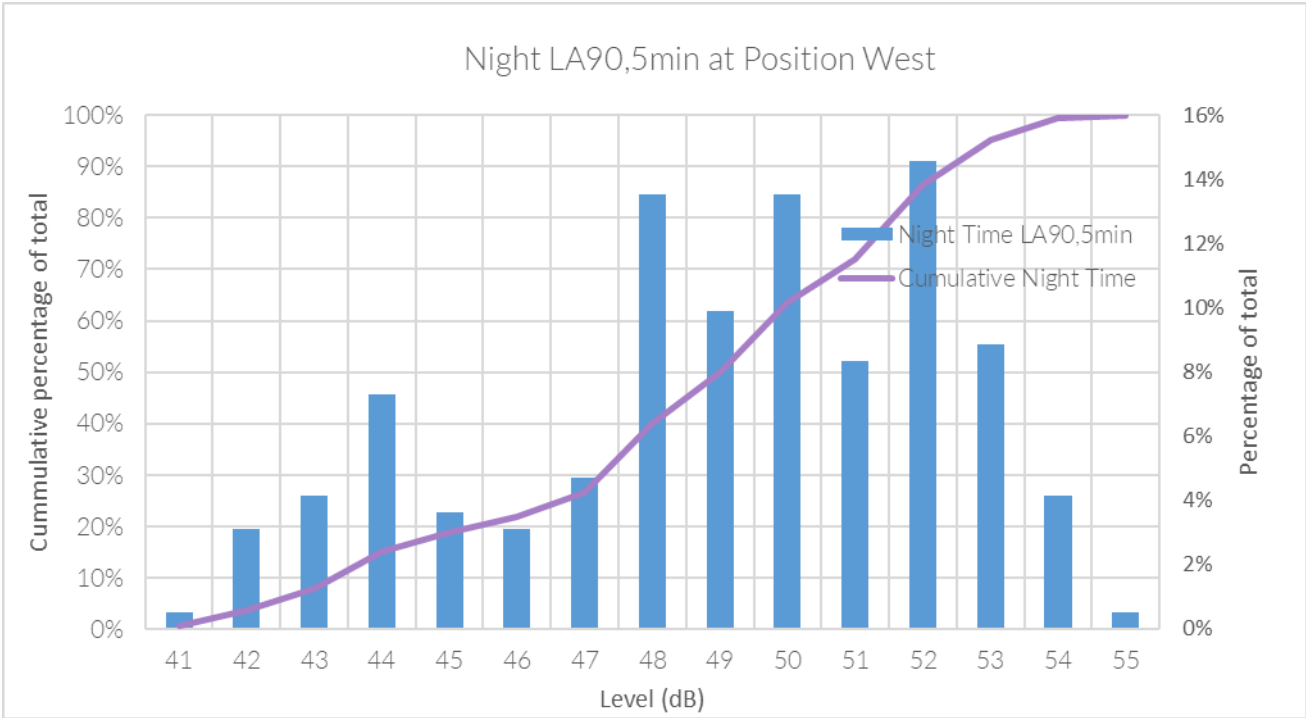


Figure 11.1.5: Night-time background sound level statistical analysis at Location 2

The following background sound levels are considered representative of the typical lowest background sound levels for the site.

Measurement Location	Typical lowest background noise level, LA90,T dB	
	Daytime (07:00 – 23:00)	Night time (23:00 – 07:00)
Location 1 (Road)	46	33
Location 2 (Rail)	43	43

Table 11.1.2: Measured typical lowest background noise levels

Measured time histories.
(see over)

