HS2

August 2026

Construction noise and vibration Monthly Report – August 2026

Cherwell District Council

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Non-Technical Summary

This Noise and Vibration Monitoring Report fulfils HS2 Limited's commitment detailed in the Environmental Minimum Requirements (EMRs), Annex 1, Code of Construction Practice, to present the results of noise and vibration monitoring carried out within Cherwell District Council during the month of August 2026.

Within this period monitoring was undertaken at the following worksites:

- A421 North, Warren Farm worksite (ref: A421), where earthworks, hauls road operation, road tie-in works, utility works were underway.
- A4421 South, Shelswell Inn worksite (ref.: A4421), where haul road operation, A4421 road works, and earthwork activities were underway.

The HS2 threshold levels for significant noise impacts, which are defined in Information Paper E23 (https://www.gov.uk/government/publications/hs2-information-papersenvironment) were exceeded zero (0) times during the reporting period.

There were no exceedances of trigger levels as defined in section 61 consents during the reporting period at any monitoring position.

No complaints were received during the monitoring period

Abbreviations and Descriptions

The abbreviations, descriptions and project terminology used within this report can be found in Table 1.

Table 1: Table of Abbreviations

Acronym/Term	Definition
LAeq,T	See equivalent continuous sound pressure level.
Ambient Sound	A description of the all-encompassing sound at a given location and time which will include sound from many sources near and far. Ambient sound can be quantified in terms of the equivalent continuous sound pressure level, LpAeq,T
Decibel(s), or dB	Between the quietest audible sound and the loudest tolerable sound there is a million to one ratio in sound pressure (measured in Pascal (Pa)). Because of this wide range, a level scale called the decibel (dB) scale, based on a logarithmic ratio, is used in sound measurement. Audibility of sound covers a range of approximately 0-140dB.
Decibel(s) A-weighted, or dB(A)	The human ear system does not respond uniformly to sound across the detectable frequency range and consequently instrumentation used to measure sound is weighted to represent the performance of the ear. This is known as the 'A weighting' and is written as 'dB(A)'.
Equivalent continuous sound pressure level, or LAeq,T	An index used internationally for the assessment of environmental sound impacts. It is defined as the notional unchanging level that would, over a given period of time (T), deliver the same sound energy as the actual time-varying sound over the same period. Hence fluctuating sound levels can be described in terms of an equivalent single figure value, typically expressed as a decibel level.
Exclusion of data	Measurement of noise levels can be affected by weather conditions such as prolonged periods of rain, winds speeds higher than 5m/s and snow/ice ground cover. Noise levels measured during these periods are considered not representative of normal noise conditions at the site and, for the purposes of this report, are excluded from the assessment of exceedances and calculation of typical noise levels and are also greyed out in charts. Identifiable incongruous noise and vibration events not attributable to HS2 construction noise are also excluded.
Façade	A facade noise level is the noise level 1m in front of a large reflecting surface. The effect of reflection, is to produce a slightly higher (typically +2.5 to +3 dB) sound level than it would be if the reflecting surface was not there.
Free-field	A free-field noise level is the noise level measured at a location where no reflective surfaces, other than the ground, lies within 3.5 metres of the microphone position.
LOAEL	Lowest Observed Adverse Effect Level - the level above which adverse effects on health and quality of life can be detected.
Peak particle velocity, or PPV	Instantaneous maximum velocity reached by a vibrating element as it oscillates about its rest position. The PPV is a simple indicator of perceptibility and risk of damage to structures due to vibration. It is usually measured in mm/s.
SOAEL	Significant Observed Adverse Effect Level - the level above which significant adverse effects on health and quality of life occur.

Sound pressure level	The parameter by which sound levels are measured in air. It is measured in decibels. The threshold of hearing has been set at 0dB, while the threshold of pain is approximately 120dB. Normal speech is approximately 60dB at a distance of 1 metre and a change of 3dB in a time varying sound signal is commonly regarded as being just detectable. A change of 10dB is subjectively twice, or half, as loud.
Vibration dose value, or VDV	An index used to evaluate human exposure to vibration in buildings. While the PPV provides information regarding the magnitude of single vibration events, the VDV provides a measure of the total vibration experienced over a specified period of time (typically 16h daytime and 8h night-time). It takes into account the magnitude, the number and the duration of vibration events and can be used to quantify exposure to continuous, impulsive, occasional and intermittent vibration. The vibration dose value is measured in $m/s^{1.75}$.

1 Introduction

1.1.1 HS2 is required to undertake noise (and vibration) monitoring as necessary to comply with the requirements of the High Speed Rail (London-West Midlands) Environmental Minimum Requirements, including specifically Annex 1: Code of Construction Practice, in addition to any monitoring requirements arising from conditions imposed through consents under Section 61 of the Control of Pollution Act, 1974 or through Undertakings & Assurances given to third parties. Such monitoring may be undertaken for the following purposes:

- monitoring the impact of construction works;
- to investigate complaints, incidents and exceedance of trigger levels; or
- monitoring the effectiveness of noise and vibration control measures.

Monitoring data and interpretive reports are to be provided to each relevant local authority on a monthly basis and shall include a summary of the construction activities occurring, the data recorded over the monitoring period, any complaints received, any periods in exceedance of agreed trigger levels, the results of any investigations and any actions taken or mitigation measures implemented. This report provides noise data, and interpretation thereof, for monitoring carried out by HS2 within the Cherwell District Council (CDC) area for the period 1-31 August 2026.

1.1.2 Active construction sites in the local authority area during this period include:

- A4421, Newton Purcell ref.: A4421 South (See plan 2 in Appendix A), where work activities included:
  - Haul road operation
  - A4421 road works
  - Earthworks
  - Utilities works
- A421, Warren Farm ref.: A421 North (See plan 1 in Appendix A), where work activities included:
  - Haul road operation
  - Road tie in works
  - Earthworks
  - Utilities works

1.1.3 The applicable standards, guidance, and monitoring methodology is outlined in the construction noise and vibration monitoring methodology report which can be found at the following location https://www.gov.uk/government/collections/monitoring-the-environmental-effects-of-hs2. Noise and vibration monitoring reports for previous months can also be found at this location.

1.2 Measurement Locations

1.2.1 2 noise monitoring installations were active in August in the Cherwell District Council area. Table 2a summarises the position of noise monitoring installations within the Cherwell District Council area in August 2026.

1.2.2 Maps showing the position of noise monitoring installations are presented in Appendix B.

Table 2a: Noise Monitoring Locations

Worksite Reference	Measurement Reference	Address
A421 North	A421-N1	A421 North, Warren Farm
A4421 South	NPF-N1	A4421 South, Shelswell Inn

2 Summary of Results

2.1 Summary of Measured Noise Levels

2.1.1 Table 3 presents a summary of the measured noise levels at each monitoring location over the reporting period. The LAeq,T is presented for each of the relevant time periods averaged over the calendar month, along with the highest single period LAeq,T that was found to occur within the month.

Table 3: Summary of Measured dB LAeq Data over the Monitoring Period

Worksite Reference.	Measurement Reference	Site Address	Free-Field or Façade Measurement	Weekday Average LAeq,T (Highest Day LAeq,T)					Saturday Average LAeq,T (Highest Day LAeq,T)					Sunday / Public Holiday LAeq,T (Highest Day LAeq,T)	
				0700 - 0800	0800 - 1800	1800 - 1900	1900 - 2200	2200 - 0700	0700 - 0800	0800 - 1300	1300 - 1400	1400 - 2200	2200 - 0700	0700 - 2200	2200 - 0700
A421 North	A421-N1	A421 North, Warren Farm	Free field	54.0 (60.5)	61.9 (69.9)	47.3 (54.3)	44.9 (52.7)	44.7 (52.0)	52.7 (55.6)	55.8 (58.0)	55.9 (58.9)	52.2 (62.1)	44.4 (49.0)	46.3 (52.1)	44.4 (50.2)
A4421 South	NPF-N1	A4421 South, Shelswell Inn	Free field	56.5 (64.8)	60.4 (66.2)	47.0 (51.4)	45.8 (50.8)	45.8 (57.6)	51.9 (61.3)	56.2 (62.3)	58.8 (67.3)	52.7 (67.5)	44.4 (53.7)	49.1 (64.6)	43.7 (51.8)

2.1.2 Table 4: Summary of Measured PPV Data over the Monitoring Period presents a summary of the measured vibration levels at each monitoring location over the reporting period. The highest PPV measured during the monitoring along any axis is presented in the table.

Table 4: Summary of Measured PPV Data over the Monitoring Period

Worksite Reference	Measurement Reference	Monitor Address	Highest PPV measured in any axis, mm/s

2.1.3 Appendix C presents graphs of the noise monitoring data over the month for each of the measurement locations. Noise data presented consists of the hourly LAeq values and, where relevant, the LAeq,T values (where the time period T has been taken to be the averaging period as specified in Table 1 of HS2 Information Paper E23). The full data set for the monitoring equipment can be found at the following location: https://data.gov.uk/dataset/24542ae7-dd44-444f-b259-871c4cc43b5e/environmental-monitoring-data.

2.2 Exceedances of the LOAEL and SOAEL

2.2.1 The lowest observed adverse effect level (LOAEL) is defined in the Planning Practice Guidance – Noise (PPG) as the level above which "noise starts to cause small changes in behaviour and/or attitude, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a perceived change in the quality of life".

2.2.2 The significant observed adverse effect level (SOAEL) is defined in the 'Planning Practice Guidance – Noise' as the level above which "noise causes a material change in behaviour

and/or attitude, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area."

2.2.3 HS2 Phase One Information Paper E23: Control of Construction Noise and Vibration sets out the LOAEL and SOAELs for construction noise.

2.2.4 Where construction noise levels exceed the SOAEL, relevant periods will be identified, and summary statistics provided in order to evaluate ongoing qualification for noise insulation and temporary rehousing.

2.2.5 Table 5 presents a summary of recorded exceedances of the LOAEL and SOAEL at each measurement location over the reporting period, including the number of exceedances during each time period.

Table 5: Summary of Exceedances of LOAEL and SOAEL

Worksite Reference	Measurement Reference	Site Address	Day (Weekday, Saturday, Sunday, Night)	Time period	Number of exceedances of LOAEL	Number of exceedances of SOAEL
A421 North	A421-N1	Warren Farm, Finmere	Weekday	0700 - 0800	1	No exceedances
				0800 - 1800	6	No exceedances
			Saturday	1300 - 1400	1	No exceedances
				1400 - 2200	4	No exceedances
			Night	2200 - 0700	16	No exceedances
A4421 South	NPF-N1	Shelswell Inn, Newton Purcell	Weekday	0700 - 0800	5	No exceedances
				0800 - 1800	2	No exceedances
			Saturday	0700 - 0800	1	No exceedances
				1300 - 1400	2	No exceedances
				1400 - 2200	3	No exceedances
			Sunday	0700 - 2200	1	No exceedances
			Night	2200 - 0700	15	No exceedances

2.2.6 There were exceedances of the LOAEL, during August 2026, due to HS2 construction works.

2.2.7 For the purpose of assessing eligibility for noise insulation or temporary rehousing, multiple exceedances of the SOAEL in a 24-hour period would be counted as a single exceedance during that day. Over the reporting period, the overall number of SOAEL exceedances at each measurement location is shown in Table 6 and may be lower than the total sum of individual exceedances reported in Table 5 for each location.

Table 6: Summary of Total Exceedances of SOAEL

Worksite Reference	Measurement Reference	Monitor Address	Total of SOAEL exceedances in the month

-	-	-	-

2.3 Exceedances of Trigger Level

2.3.1 Table 7 provides a summary of exceedances of the S61 trigger noise levels determined to be due to HS2 related construction noise measured during the reporting period, along with the findings of any investigation.

Table 7: Summary of Exceedances of Trigger Levels

Complaint Reference Number (if applicable)	Worksite Reference	Date and Time Period	Identified Source	Results of Investigation (including noise monitoring results)	Actions Taken
-	-	-	-	-	-

2.4 Complaints

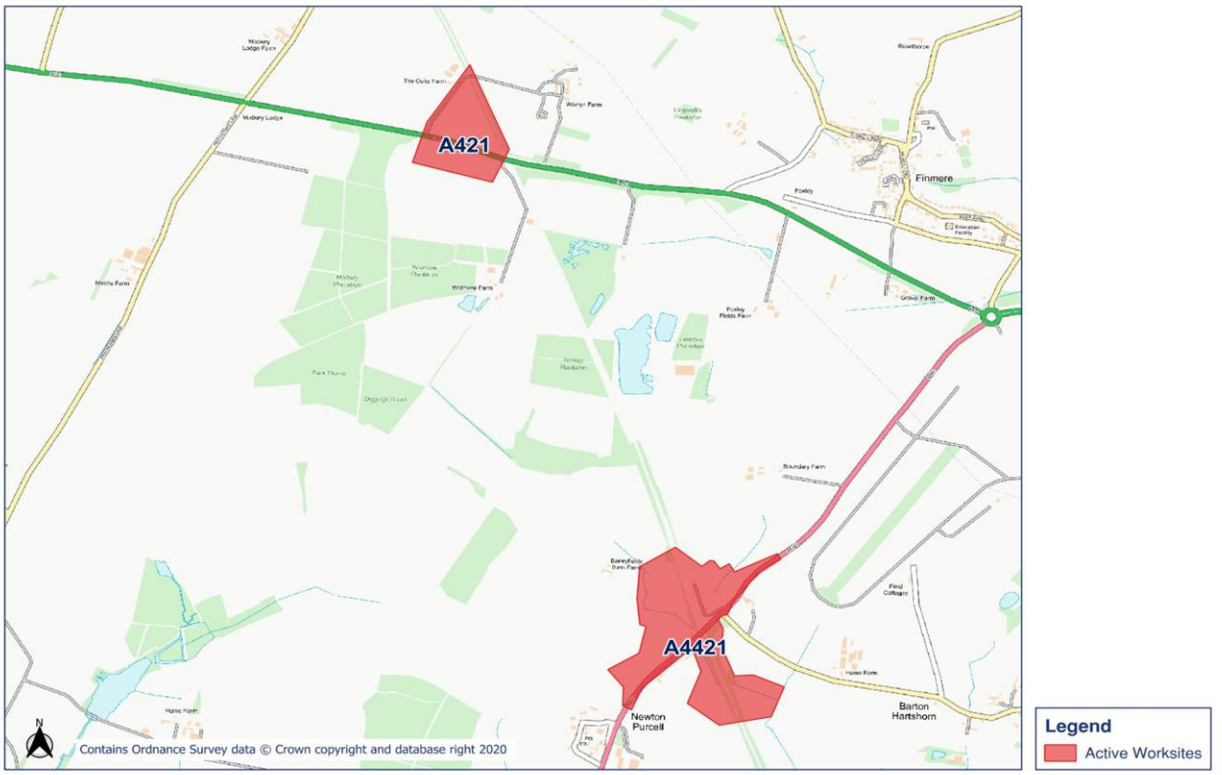
2.4.1 Table 8 provides a summary of complaint information related to noise and vibration received during the reporting period, monitor along with the findings of any investigation.

Table 8: Summary of Complaints

Complaint Reference Number	Worksite Reference	Description of Complaint	Results of Investigation	Actions Taken
-	-	-	-	-

Appendix A Site Locations

HS2 **Worksite Identification Plan - Overview**



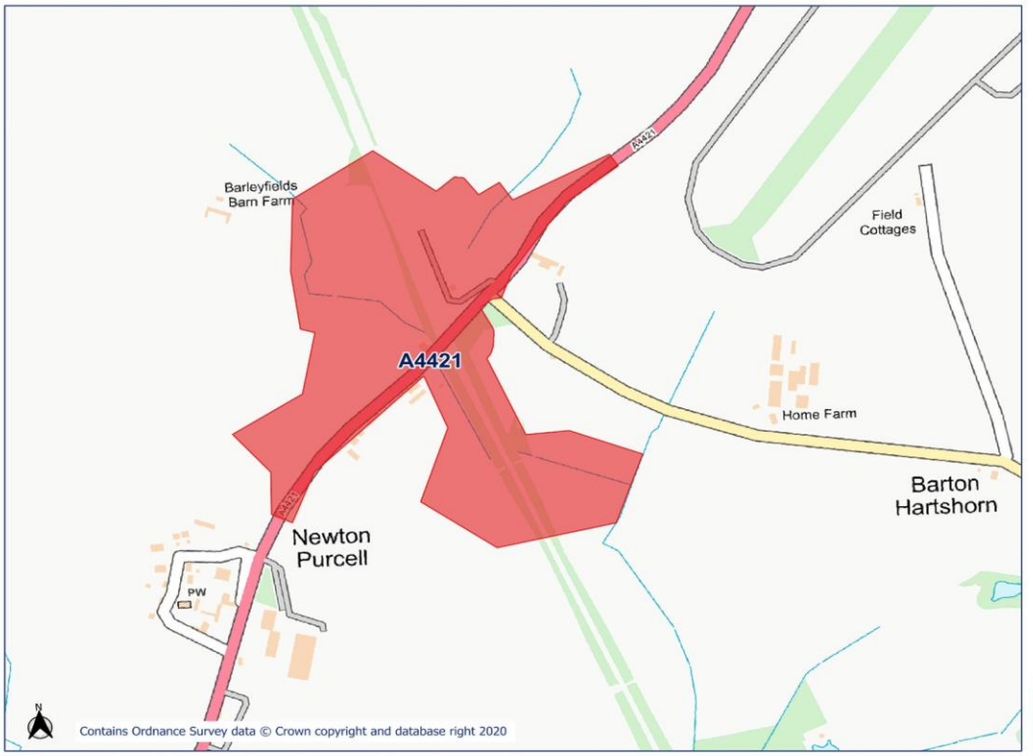
HS2

Worksite Identification Plan - 1



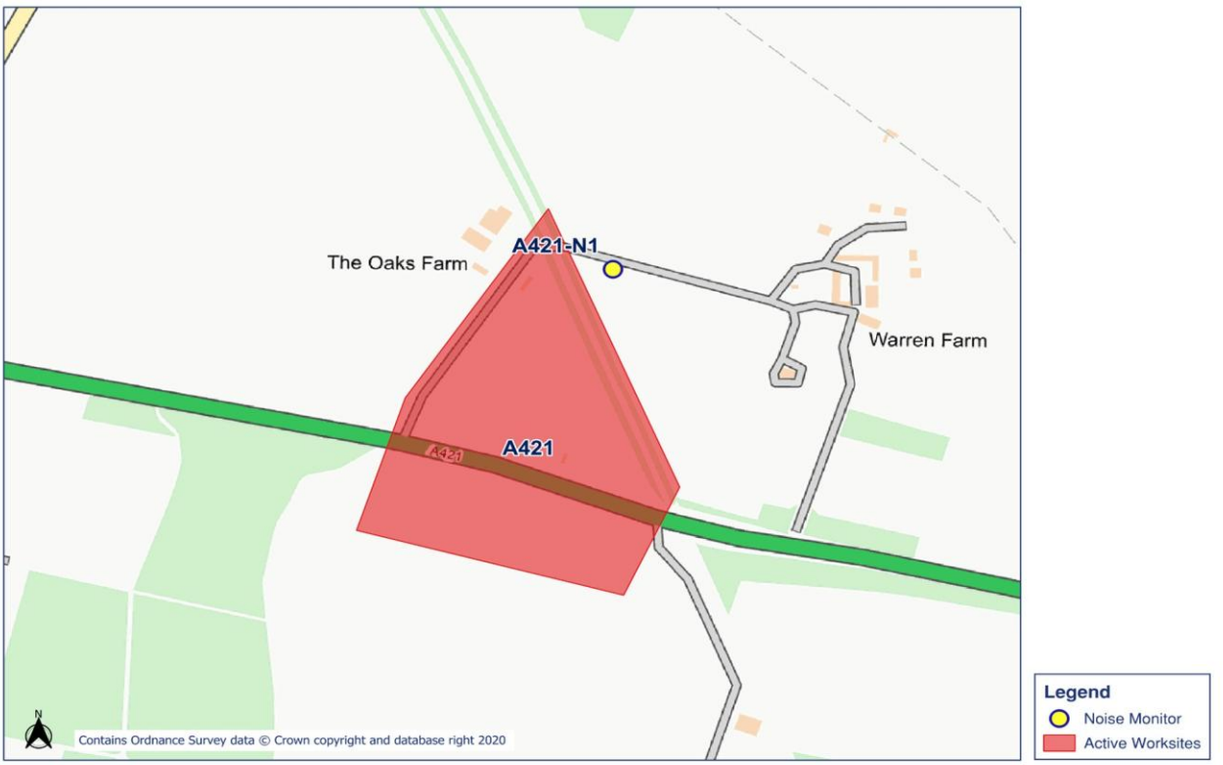
HS2

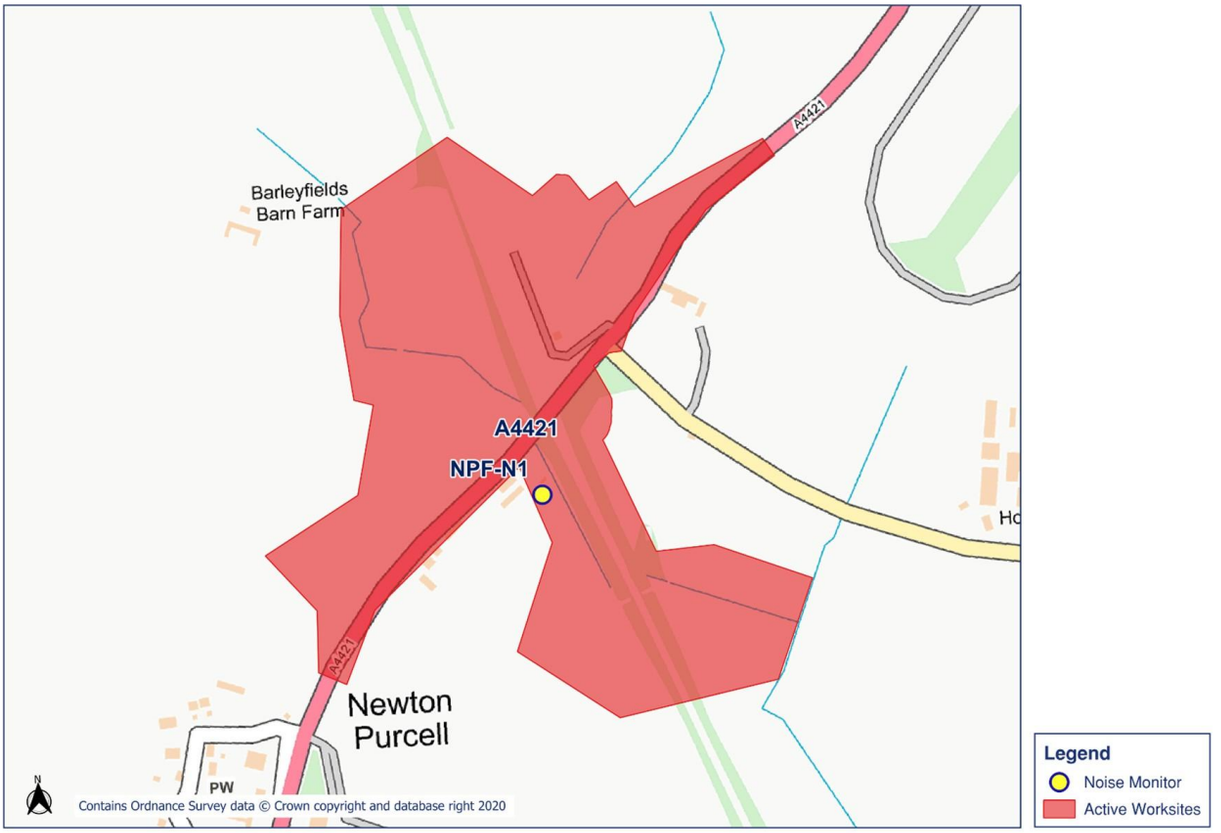
Worksite Identification Plan - 2



Appendix B Monitoring Locations

HS2 **Noise and Vibration Monitoring Plan - 1**



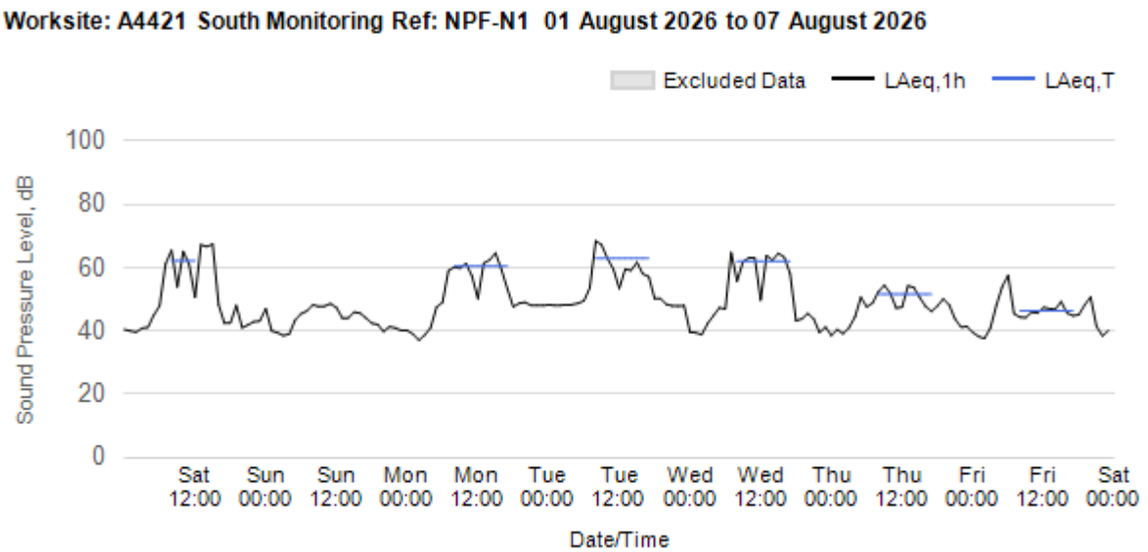

Barleyfields
Barn Farm
A4421
A4421
NPF-N1
A4421
Newton
Purcell
PW
N
Contains Ordnance Survey data © Crown copyright and database right 2020
Legend
Noise Monitor
Active Worksites

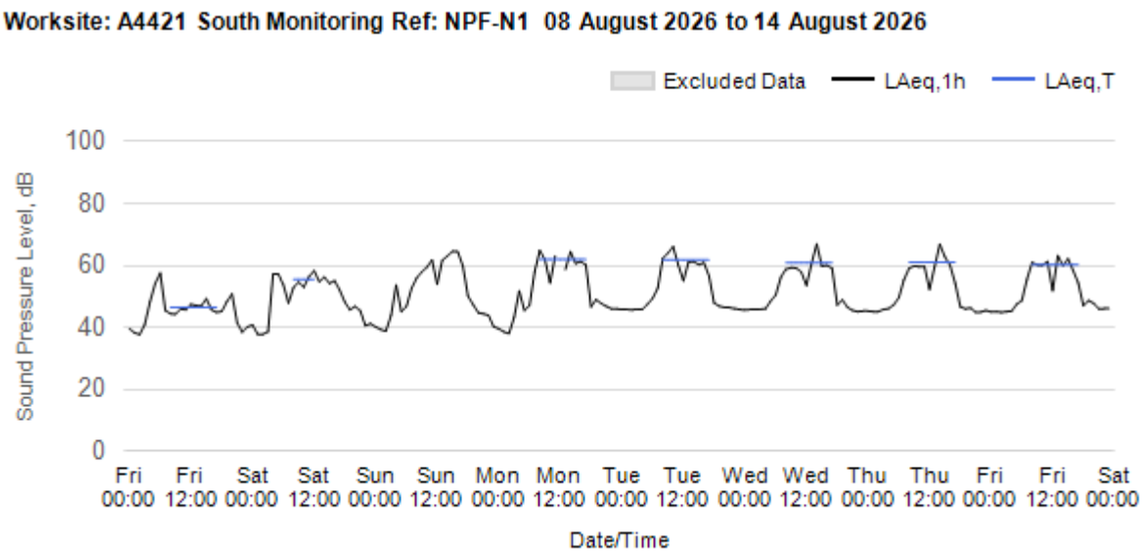
Appendix C Data

Noise

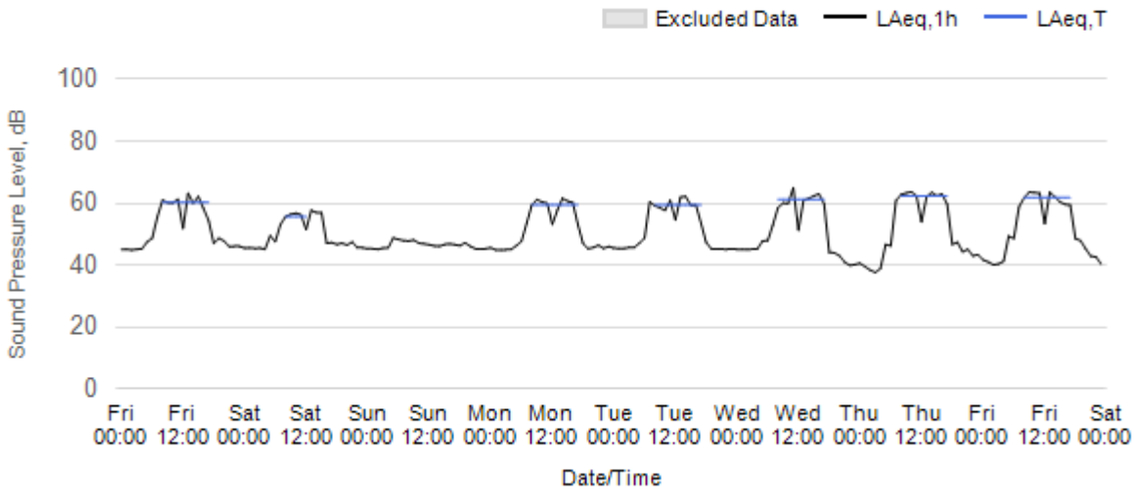
The following graphs show the hourly measured ambient noise level LAeq,1h and, where relevant, the averaged noise level LAeq,T values, where the time period T is as specified in Table 1 of HS2 Information Paper E23. Periods where noise levels are adversely affected by weather or only measured for part of the period, which are not representative of HS2 construction works, have been greyed out and excluded from the calculation of the LAeq,T values in in Table 3 of the main report.

Worksite: A4421 South - Monitoring Ref: NPF-N1

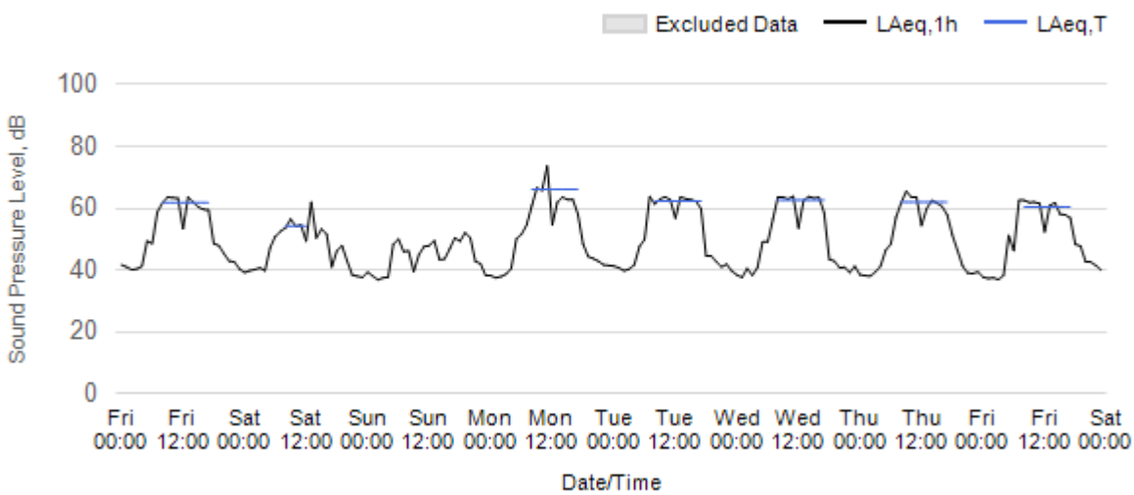




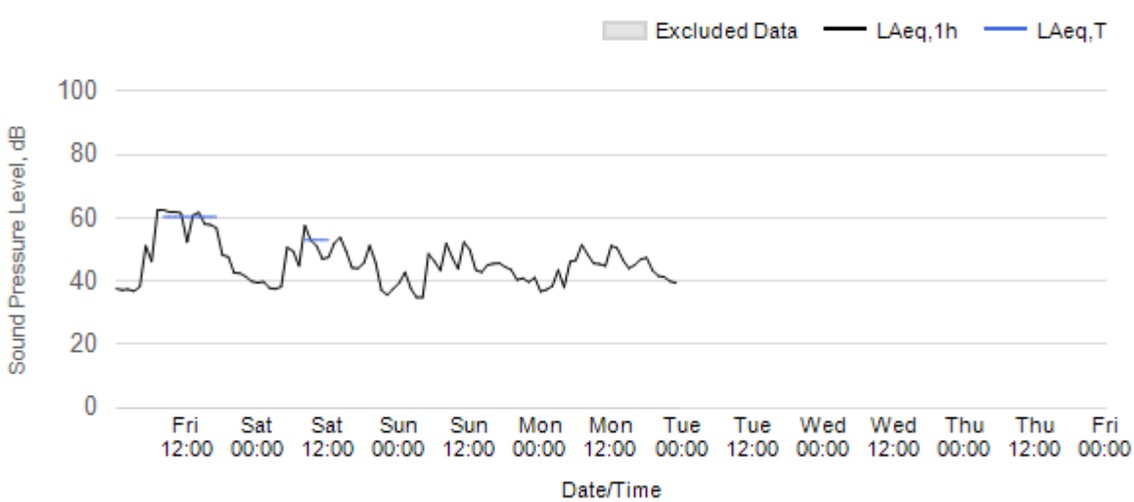
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Worksite: A4421 South Monitoring Ref: NPF-N1 22 August 2026 to 28 August 2026



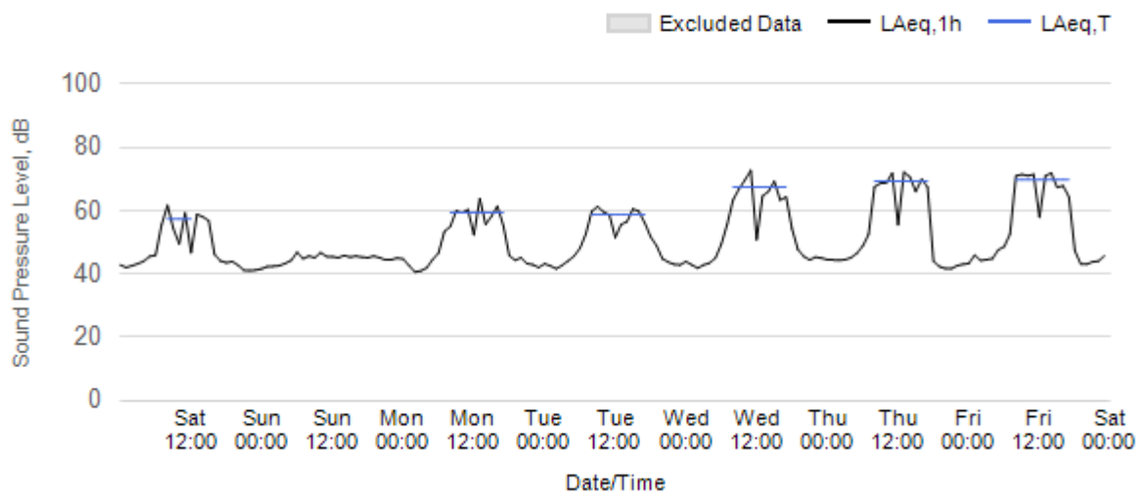
Worksite: A4421 South Monitoring Ref: NPF-N1 29 August 2026 to 4 September 2026



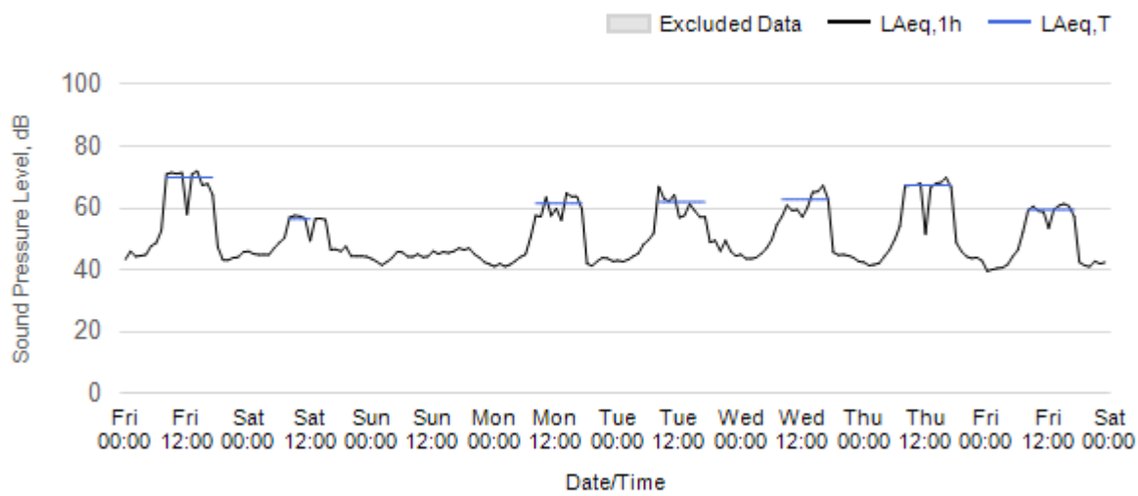
Missing data between 10-08-2026 12:00 and 10-08-2026 12:59 was due to Monitor Maintenance

Worksite: A421 North - Monitoring Ref: A421-N1

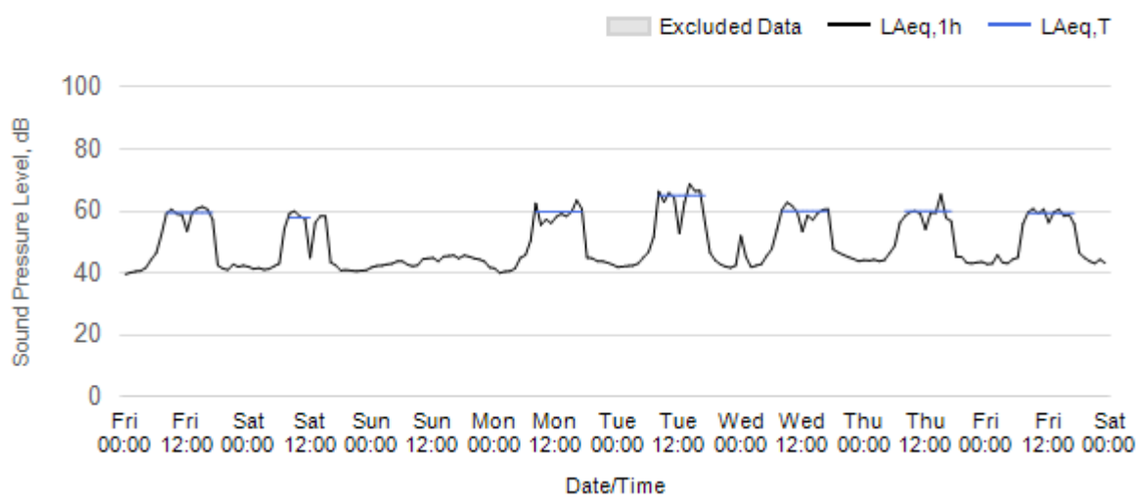
Worksite: A421 North Monitoring Ref: A421-N1 01 August 2026 to 07 August 2026



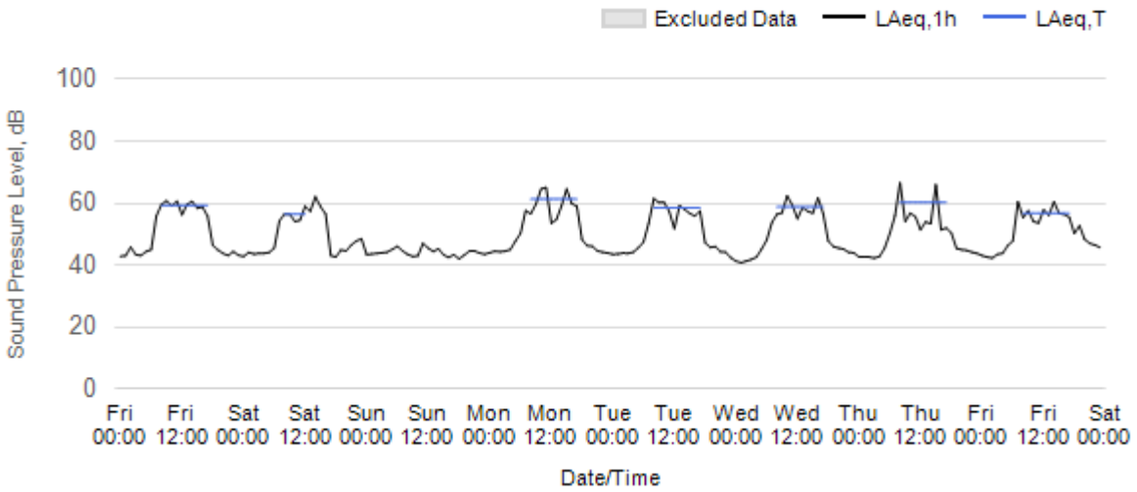
Worksite: A421 North Monitoring Ref: A421-N1 08 August 2026 to 14 August 2026



Worksite: A421 North Monitoring Ref: A421-N1 15 August 2026 to 21 August 2026



Worksite: A421 North Monitoring Ref: A421-N1 22 August 2026 to 28 August 2026



Worksite: A421 North Monitoring Ref: A421-N1 29 August 2026 to 4 September 2026

