

A46 Coventry Junctions (Walsgrave)

Scheme number: TR010066

6.3 Environmental Statement

Appendices

Appendix 11.3 Baseline Noise Survey

APFP Regulations 5(2)(a)

Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and
Procedure) Regulations 2009

Volume 6

November 2024

Infrastructure Planning

Planning Act 2008

**The Infrastructure Planning
(Applications: Prescribed
Forms and Procedure)
Regulations 2009**

A46 Coventry Junctions (Walsgrave)
Development Consent Order 202[x]

ENVIRONMENTAL STATEMENT APPENDICES
Appendix 11.3 Baseline Noise Survey

Regulation Number	Regulation 5(2)(a)
Planning Inspectorate Scheme Reference	TR010066
Application Document Reference	TR010066/APP/6.3
Author	A46 Coventry Junctions (Walsgrave), Project Team & National Highways

Version	Date	Status of Version
Rev 0	November 2024	Application Issue

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1. Introduction

1.1. Scope of document

- 1.1.1. This appendix describes the baseline noise surveys that have been undertaken to inform the noise assessment presented in Environmental Statement (ES) Chapter 11 (Noise and Vibration) (**TR010066/APP/6.1**).
- 1.1.2. The objective of the baseline noise measurements detailed in this appendix is to characterise the existing noise environment near the Scheme and collect baseline data to inform the various assessments described in ES Chapter 11 (Noise and Vibration) (**TR010066/APP/6.1**).

1.2. Deviation from Scoping Report methodology

- 1.2.1. An Environmental Impact Assessment (EIA) Scoping Report setting out the methodology of the noise survey, was submitted to the Planning Inspectorate in June 2023. The scope of the survey was to undertake noise measurements over a 7-day period at locations representative of residential properties considered to have the potential to be adversely affected by the Scheme.
- 1.2.2. However, this was not able to be completed to align with the Scheme programme due to a series of circumstances ranging from:
- Poor weather conditions
 - School or Public holidays
 - Roadworks within or within the vicinity of the proposed development area
 - Delays in gaining landowner access to survey locations.
- 1.2.3. A baseline noise survey is not considered a mandatory requirement within the methodology set out in the Design Manual for Roads and Bridges (DMRB) LA 111 Noise and vibration. However, in DMRB LA 111 paragraph 3.45.1 and the accompanying note it is considered beneficial to have the information.

“3.45.1 Noise monitoring should be used to inform baseline noise modelling results and to provide data for public consultation purposes.

Note: Validation of baseline can be undertaken by comparing modelled noise levels to measured noise levels, using corrections to take account of expected changes in traffic levels between the date of monitoring and the date of the baseline.”

- 1.2.4. To enable the collection of measurement data, a revised survey methodology was proposed that encompassed a series of shortened measurements as per the methodology set out in the Calculation of Road Traffic Noise (CRTN).
- 1.2.5. These measurements were made between February 2024 and March 2024.

Further engagement undertaken

- 1.2.6. This revised methodology, and the justifications for it was discussed with Mr Michael Warren, an Environmental Health Officer from Rugby Borough Council during an online Teams meeting on 19 January 2024. During the meeting the noise survey methodology and justifications for the changes were discussed and agreed. Post discussion, an email¹ was received setting out his opinion regarding the noise assessment methodology, modelling and the revised proposals to obtain data to validate the modelling, this is set out below:

“The difficulties with data gathering due to meteorological conditions and road works etc are understood and will influence the margins of error associated with the data, however it will still be useful to have”

- 1.2.7. Engagement with Coventry City Council regarding this change was also attempted at the same time, no response was ever received.

1.3. Additional measurement within Coombe Poole

- 1.3.1. In addition to the changes to the verification noise measurements, an additional measurement was proposed to support the EIA biodiversity assessment. The proposed measurement, including location and duration was discussed with both the biodiversity lead and Natural England.
- 1.3.2. No objections were raised by Natural England in principle to the additional measurement.
- 1.3.3. This measurement was undertaken in May 2024.

¹ Email dated 19 January 2024, Subject: A46 Walsgrave (National Highways) – materials and noise – details agreed.

2. Methodology

2.1. Study area

Shortened Calculation of Road Traffic Noise measurements

- 2.1.1. As the purpose of these measurements was to enable the verification of the noise model, the revised methodology prioritised measurement locations adjacent to roads within the Scheme area. The locations were selected to ensure that the noise levels measured would be focused on the roads.
- 2.1.2. The locations were identified as Calculation of Road Traffic Noise (CRTN) 1 to 3:
- A46 North of existing Walsgrave Junction (Hungerley Hall Farm overbridge – CRTN 1)
 - A46 South of existing Walsgrave Junction (Brinklow Road compound access road – CRTN 2)
 - B4082 (entrance to Hungerley Hall Farm – CRTN 3)
- 2.1.3. Four three-hour measurements were made at each location, two during the AM time-period (between 9am and 12pm), and two during the PM time period (between 12pm and 5pm). In accordance with, and in addition to standard accepted measurement procedure, periods of stationary traffic were avoided wherever possible.
- 2.1.4. The measurement location is indicated in ES Figure 11.1 (Noise Location Plan) (TR010066/APP/6.2).

Coombe Pool measurement

- 2.1.5. This additional measurement was located on the highway boundary between the A46 and Coombe Pool and measured over a single 24-hour period (BIO 1).
- 2.1.6. The measurement location is indicated in ES Figure 11.1 (Noise Location Plan) (TR010066/APP/6.2).

2.2. General measurement procedure

- 2.2.1. Table 2-1 presents details of the noise measurement equipment used. The sound level meters were designed to conform to Class 1 standard as defined within International Electro-technical Commission (2002) IEC 61672-1:2002. Electroacoustics-Sound level meters: Specifications.

- 2.2.2. All sound level meters were calibrated by an UKAS accredited laboratory, traceable to national and international standards and no more than two years before the period of all measurements.
- 2.2.3. The field calibrator used was designed to be in compliance with International Electro-technical Commission (2003) IEC 60942:2003 Electroacoustics-Sound calibrators. The field calibrator was calibrated by an UKAS accredited laboratory, traceable to national and international standards and no more than one year before the period of all measurements.
- 2.2.4. Before and after each measurement session, the reference calibration of all sound level meters was checked using the field calibrator. Variations of no greater than 0.3dB were noted over all the measurement periods.

Table 2-1 Inventory of Acoustic Measurement Equipment

Position Ref.	Item	Manufacturer/Model Type	Serial Number
CRTN 1	Sound Level Meter	Rion NL-52	00620900
CRTN 2	Preamplifier	Rion NH-25	31972
CRTN 3	Microphone	Rion UC-59	03797
BIO 1			
All CRTN Positions	Calibrator	01dB CAL31	87808
BIO 1	Calibrator	RION NC-74	34662223

- 2.2.5. The microphone was supported using a tripod at a height of 1.5 to 2m above the ground and fitted with a windshield suitable for outdoor use. Unless stated otherwise, measurements were conducted in the acoustic free field i.e. more than 3.5m away from any walls or vertical reflecting surfaces. Where measurements were undertaken in close proximity to buildings (a façade measurement), the horizontal distance between the microphone and the façade was 1m, where possible or otherwise stated.
- 2.2.6. Photographs, to allow repeatability of the measurement locations (Plate 2 to 17 in section 3.3 of this document) and descriptions of the site, noise climate and weather conditions were noted at each measurement position. Where possible, measurements were conducted under dry conditions. Wind speeds were checked using a hand-held anemometer to be within the guideline limit of 5m/s for noise monitoring.
- 2.2.7. Significant extraneous noise events were excluded from the short-term measurements unless they were regular features of the noise climate in that area.
- 2.2.8. All measurements were undertaken by a consultant competent in environmental noise monitoring and completed in accordance with the principles of British

Standard 7445-1: 2003 Description and measurement of environmental noise.
Guide to quantities and procedures.

2.2.9. The weather conditions during the surveys (both CRTN measurement and Coombe Pool measurement) were considered suitable to undertake noise measurements. A summary of these is presented in Table 2-2 below.

Table 2-2 Meteorological Conditions during the Survey

Survey Location	Date and Time	Temperature	Wind Speed	Wind Direction (twds)	Dominant Noise Source
CRTN 1	01/02/2024 10:26 – 13:26	3°C - 7°C	1 – 2 m/s	East	A46 – North of existing Walsgrave Junction
CRTN 2	01/02/2024 13:55 – 16:55	7°C - 8°C	2 m/s	East	A46 – South of existing Walsgrave Junction
CRTN 2	07/02/2024 09:27 – 12:27	4°C - 6°C	3 – 4 m/s	West	A46 – South of existing Walsgrave Junction
CRTN 3	07/02/2024 13:08 – 16:08	8°C - 9°C	3 – 4 m/s	West	B4082
CRTN 1	23/02/2024 09:07 – 12:07	4°C - 6°C	4 m/s	East	A46 – North of existing Walsgrave Junction
CRTN 3*	28/02/2024 09:22 – 12:24	5°C - 7°C	1 – 3 m/s	North	B4082
CRTN 1	05/03/2024 13:04 – 16:04	8°C - 9°C	0 – 1 m/s	East – south-east	A46 – North of existing Walsgrave Junction
CRTN 2	06/03/2024 09:40 – 12:40	3°C - 7°C	2 m/s	West - north-west	A46 – South of existing Walsgrave Junction
CRTN 3*	06/03/2024 13:29 – 16:39	8°C - 9°C	2 m/s	North-west	B4082
CRTN 3	07/03/2024 09:23 – 12:23	4°C - 6°C	4 – 5 m/s	West	B4082
CRTN 1**	07/03/2024 13:30 – 16:33	7°C - 8°C	4 – 5 m/s	West	A46 – North of existing Walsgrave Junction
CRTN 2	22/03/2024 13:11 – 16:11	10°C - 11°C	4 m/s	East – south-east	A46 – South of existing Walsgrave Junction
BIO 1	09/05/2024 10:34 – 10/05/2024 14:51	20°C - 23°C	1 – 3 m/s	South	A46
*Measurement was paused due to stationary traffic					
**Measurement paused due to extraneous source					

3. Results

- 3.1.1. A summary of all the results of the baseline noise measurements is provided in Table 3-1. In addition, the results of the 24h noise measurement is presented graphically within Plate 1 of this document.
- 3.1.2. The values reported include L_{Aeq} , L_{Amax} , L_{A10} and L_{A90} . These have been defined in ES Appendix 11.1 (Glossary of Terms) (**TR010066/APP/6.3**).

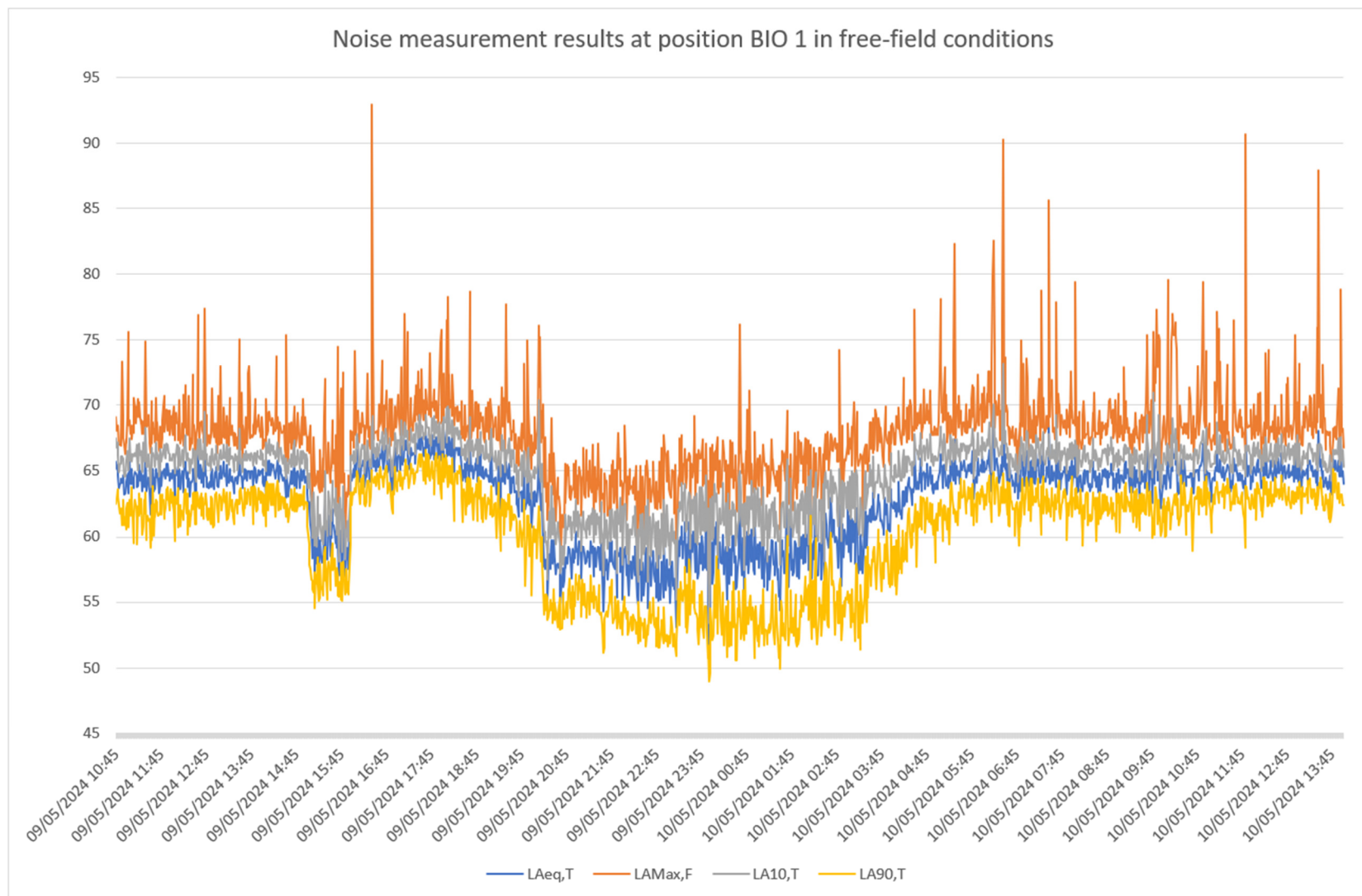
3.2. Summary results

- 3.2.1. Table 3-1 summarises the short-term data collected for each of the measurement positions. All levels have been rounded to the nearest whole number.

Table 3-1 Summary of measured short-term noise levels

Position	Survey Date	Equivalent continuous SPL $L_{Aeq,T}$ (dB)	Typical (90 th percentile SPL $L_{Amax,f}$ (dB)*	Tenth percentile SPL $L_{A10,T}$ (dB)	Background Level $L_{A90,T}$ (dB)
CRTN 1	01/02/2024 10:26 – 13:26	79	86	81	76
CRTN 2	01/02/2024 13:55 – 16:55	72	79	74	69
CRTN 2	07/02/2024 09:27 – 12:27	70	79	73	66
CRTN 3	07/02/2024 13:08 – 16:08	71	81	74	57
CRTN 1	23/02/2024 09:07 – 12:07	79	86	82	76
CRTN 3	28/02/2024 09:22 – 12:24	72	83	76	58
CRTN 1	05/03/2024 13:04 – 16:04	79	87	81	75
CRTN 2	06/03/2024 09:40 – 12:40	71	79	74	67
CRTN 3	06/03/2024 13:29 – 16:39	72	83	76	60
CRTN 3	07/03/2024 09:23 – 12:23	72	83	76	59
CRTN 1	07/03/2024 13:30 – 16:33	80	86	82	75
CRTN 2	22/03/2024 13:11 – 16:11	71	79	74	68
BIO 1	Daytime	64	72	66	58
	Night-time	62	69	65	57
*90 th percentile value as identified through statistical analysis					

Plate 1 Graphical representation of the results of the 24 hour noise measurements taken within Coombe Pool



3.3. Measurement locations

Plate 2 Position CRTN 1 - HHF Overbridge (looking south)



Plate 3 Position CRTN 1 - HHF Overbridge (looking east)



Plate 4 Position CRTN 1 - HHF Overbridge (looking north)



Plate 5 Position CRTN 1 - HHF Overbridge (looking west)



Plate 6 Position CRTN 2 - Brinklow Road compound access road (adjacent to A46) (looking north)



Plate 7 Position CRTN 2 - Brinklow Road compound access road (adjacent to A46) (looking east)



Plate 8 Position CRTN 2 - Brinklow Road compound access road (adjacent to A46) (looking south)



Plate 9 Position CRTN 2 - Brinklow Road compound access road (adjacent to A46) (looking west)



Plate 10 Position CRTN 3 - B4082 (looking north)



Plate 11 Position CRTN 3 - B4082 (looking east)



Plate 12 Position CRTN 3 - B4082 (looking south)



Plate 13 Position CRTN 3 - B4082 (looking west)



Plate 14 Position BIO 1 (looking north)



Plate 15 Position BIO 1 (looking east)



Plate 16 Position BIO 1 (looking south)



Plate 17 Position BIO 1 (looking west)

