



# High Speed Rail (West Midlands - Crewe)

## Environmental Statement

### Volume 5: Technical appendices

CA4: Whitmore Heath to Madeley

Sound, noise and vibration report (SV-002-004)



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## Department for Transport

High Speed Two (HS2) Limited has been tasked by the Department for Transport (DfT) with managing the delivery of a new national high speed rail network. It is a non-departmental public body wholly owned by the DfT.

High Speed Two (HS2) Limited,  
Two Snowhill  
Snow Hill Queensway  
Birmingham B4 6GA

Telephone: 08081 434 434

General email enquiries: [HS2enquiries@hs2.org.uk](mailto:HS2enquiries@hs2.org.uk)

Website: [www.gov.uk/hs2](http://www.gov.uk/hs2)

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# 1 Introduction

- 1.1.1 This document is part of the sound, noise and vibration Appendix to the sound, noise and vibration assessment.
- 1.1.2 The appendices are split into two sections:
- the first of these is a single document containing an introduction to the relevant route-wide methodology, assumptions and assessment (Volume 5: Appendix SV-001-000) and relates to the sound, noise and vibration assessment for all community areas (CA); and
  - the second is split across five documents, one per CA, and contains the detailed sound, noise and vibration levels for that CA.
- 1.1.3 This document relates to the Whitmore Heath to Madeley community area (CA4), and contains the detailed baseline, construction and operational sound noise and vibration levels.
- 1.1.4 The outcomes of the sound, noise and vibration assessment are summarised in Volume 2: Community area reports.
- 1.1.5 Maps referred to throughout the sound, noise and vibration appendices are contained in the Volume 5: Sound, Noise and Vibration Map Book.

## 2 Scope, assumptions and limitations

### 2.1 Regional and local policy guidance

- 2.1.1 The policy framework for sound, noise and vibration is set out in Volume 1<sup>1</sup> and in Volume 5: Appendix SV-001-000. As part of the engagement with local authorities, where the Proposed Scheme would operate, information regarding any specific local planning guidance in respect of noise and vibration were requested. For the Whitmore Heath to Madeley area the guidance within the Stoke-on-Trent and Newcastle-under-Lyme Joint Local Plan Issues Consultation Document<sup>2</sup> has been considered as part of formulating the detailed application of the impact and significance criteria set out in Volume 5: Appendix SV-001-000, the Scope and Methodology Report (SMR) and the SMR Addendum<sup>3</sup>.

### 2.2 Engagement

- 2.2.1 Details of engagement on a route-wide basis with the local and county authorities' Environmental Health Practitioners is set out in Volume 1.
- 2.2.2 Meetings<sup>4</sup> have been held with representatives of Newcastle-Under-Lyme Borough Council (NBC) and Staffordshire County Council regarding the approach which has been taken to baseline monitoring within this area, the identification of noise and vibration sensitive receptors, the selection of assessment locations and to discuss the development of the mitigation to be included in the Proposed Scheme.
- 2.2.3 Changes suggested during these meetings have influenced the assessment locations used and the monitoring undertaken and reported in this appendix. NBC officers were invited to attend baseline sound measurements in this area and witness the measurement procedures used.
- 2.2.4 Local engagement through the working draft Environmental Impact Assessment (EIA) Report consultation provided the opportunity for local stakeholders to suggest appropriate baseline sound monitoring locations, building uses and review of the draft list of non-residential properties to be considered in the assessment.

### 2.3 Methodology

- 2.3.1 The methodology used for the assessment of airborne sound, ground-borne sound and vibration impacts and the determination of significant effects is defined in the SMR and the SMR. Further information is contained in Volume 5: Appendix SV-001-000.

### 2.4 Assumptions

- 2.4.1 Route-wide assumptions are outlined in Volume 1 and are further detailed in Volume 5: Appendix SV-001-000. Local assumptions that apply to the assessment of

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<sup>1</sup> See Environmental Statement Volume 1, Introduction to the Environmental Statement

<sup>2</sup> Stoke-on-Trent and Newcastle-under-Lyme (2016), *Joint Local Plan Issues Consultation Document*, [https://www.newcastle-staffs.gov.uk/sites/default/files/IMCE/Planning/Planning\\_Policy/Joint%20Local%20Plan%20Issues%20Consultation%20Document\\_o.pdf](https://www.newcastle-staffs.gov.uk/sites/default/files/IMCE/Planning/Planning_Policy/Joint%20Local%20Plan%20Issues%20Consultation%20Document_o.pdf).

<sup>3</sup> Environmental Impact Assessment Scope and Methodology Report, Volume 5: Appendix CT-001-001 and Environmental Impact Assessment Scope and Methodology Report Addendum, Volume 5: Appendix CT-001-002

<sup>4</sup> Meetings held on 22 April 2016, 5 July 2016 and 13 October 2016

construction sound noise and vibration within this area are set out Volume 2, Whitmore Heath to Madeley (CA Report 4), Section 13.

## **2.5**      **Limitations**

- 2.5.1      The route-wide limitations and the approach adopted to ensure that they will not impact the robust assessment of sound, noise and vibration are presented in Volume 5: Appendix SV-001-000 and Volume 2.

## 3 Baseline

### 3.1 Existing acoustic environment

- 3.1.1 The area is characterised by a mix of small towns, villages, hamlets and isolated residential properties in a predominantly rural setting. The sound environment is generally dominated by local and distant road traffic, with trains (on the West Coast Main Line (WCML)), overflying aircraft, local neighbourhood sources and natural sounds also contributing.
- 3.1.2 There are several busy main roads within this community area including the A53 Newcastle Road which runs through Baldwin's Gate and Whitmore and the A525 Bar Hill Road which runs through Madeley. The Stafford to Crewe section of the WCML runs through Baldwin's Gate and Madeley.
- 3.1.3 The community of Whitmore is characterised by sound from the A53 Whitmore Road / Newcastle Road which runs through the town, where daytime sound levels are typically around 60dB daytime and 55dB night-time for those dwellings facing the A53 Whitmore Road / Newcastle Road. Further from the A53 Whitmore Road / Newcastle Road sound from local roads and from the A53 Whitmore Road / Newcastle Road produce levels between 40dB and 50dB daytime and 35dB to 45dB night-time.
- 3.1.4 The community of Baldwin's Gate is characterised by sound from the A53 Newcastle Road and WCML which run through the town. Closest to these existing noise sources daytime sound levels are typically around 60dB daytime and 55dB night-time. Further from the A53 Newcastle Road and the railway, sound from local roads. The railway and from the A53 Newcastle Road produce levels between 40dB and 50dB daytime and 30dB to 40dB night-time.
- 3.1.5 The community of Whitmore Heath has low existing sound levels as it is removed major roads. Trains from the WCML are audible on the west of the Heath. Existing sound levels are between 35dB and 45dB during the daytime and between 35dB and 40dB during the night-time.
- 3.1.6 The community of Madeley Park Wood is located approximately 200m west of the WCML which runs north to south past the community. Daytime sound levels at properties closest to the WCML are typically around 55dB daytime and 50dB night-time for those dwellings facing the railway. Within Madeley Park Wood, sound from local roads and from the WCML produce levels between 40dB and 50dB daytime and 40dB to 45dB night-time.
- 3.1.7 The properties along the A525 Bar Hill Road are characterised by sound from the A525 Bar Hill Road which runs through the community, where daytime sound levels are typically around 55dB to 60dB daytime and 45dB to 50dB night-time for those dwellings facing the road.
- 3.1.8 The community of Madeley is characterised by sound from the WCML which runs north to south past the community. Daytime sound levels at properties closest to the WCML are typically around 65dB daytime and 60dB night-time for those dwellings facing the railway. Within the town, sound from local roads, the A525 Bar Hill Road and the WCML produce levels between 40dB and 50dB daytime and 35dB to 45dB night-time.

## 3.2 Existing baseline sound monitoring locations

- 3.2.1 Baseline monitoring locations have been defined in order to provide representative sound levels at each assessment location within the study area. Baseline information has been gathered incrementally through successive rounds of field surveys focused on locations where likely significant effects are forecast.
- 3.2.2 Areas within the study area where baseline data is required have been divided into a series of smaller sub-areas. Each of these sub-areas is representative of clusters of receptors where the noise climate is influenced by the same sound sources. Within each of the sub-areas, a programme of unattended monitoring has been undertaken, supplemented by attended observations to ensure identification of the contributing sources to the sound climate at the measurement locations. All attended observations have been undertaken simultaneously with the unattended measurements to allow a direct comparison between assessment locations to be established.
- 3.2.3 Maps showing the baseline sound monitoring locations and assessment locations with this area are included in Map Series SV-03 and SV-04 (Volume 5: Sound, Noise and Vibration Map Book).

## 3.3 Existing baseline data collection methodology

- 3.3.1 The overall approach to baseline data collection for sound noise and vibration is described in Volume 5, Appendix SV-001-000. In summary, the approach to defining baseline levels includes a mixture of sound monitoring and – for major transport noise sources – sound modelling verified using results from sound monitoring.
- 3.3.2 Within the Whitmore Heath to Madeley area, 20 locations have been defined to represent all sound and vibration sensitive receptors within the spatial scope of the assessment. The assessment locations are shown on the detailed maps in Map Series SV-03 and SV-04 (Volume 5: Sound, Noise and Vibration Map Book). These measurement locations have been classified as follows:
- five long-term measurements – unattended measurements of several days duration; and
  - fifteen medium-term measurements – attended measurements typically of 24 hours duration.

## 3.4 Existing baseline sound levels

- 3.4.1 From the measurements described in Section 3.1, baseline sound levels have been ascertained for each assessment location within this area. These levels are presented in terms of the following key sound indicators:
- baseline levels used for the operational sound assessment:
    - $L_{pAeq,16hr}$  weekday daytime (07:00-23:00) sound pressure level;
    - $L_{pAeq,8hr}$  weekday night-time (23:00-07:00) sound pressure level;
    - arithmetic average of  $L_{pAFmax,5min}$  night-time sound pressure level; and
    - highest  $L_{pAFmax,5min}$  night-time sound pressure level.

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- baseline levels used for the construction sound assessment:
  - daytime  $L_{pAeq}$  sound pressure level (Monday to Friday 07:00-19:00; Saturday 07:00-13:00);
  - evening/weekend  $L_{pAeq}$  sound pressure level (Monday to Friday 19:00-23:00, Saturday 13:00-23:00 and Sunday 07:00-23:00); and
  - night-time  $L_{pAeq}$  sound pressure level (Monday to Sunday 23:00-07:00).

3.4.2 These values are presented in Table 1. The data source coding included within this table details how the baseline sound levels allocated to each assessment location have been derived. This coding is summarised in Table 2 and explained in detail in Volume 5: Appendix SV-001-000. Codes contained within parentheses relate to the derivation of night-time baseline noise levels where they are different to the daytime levels.

Table 1: Existing baseline sound levels

Assessment location		Measurement location	Existing baseline sound levels (dB)						Data source coding	
Ref	Area represented		For operational sound assessment				For construction sound assessment			
			Daytime L <sub>pAeq,16hr</sub>	Night-time L <sub>pAeq,8hr</sub>	Arithmetic average L <sub>pAFmax,5min</sub>	Highest night-time L <sub>pAFmax,5min</sub>	Daytime, L <sub>pAeq</sub>	Evening / weekend, L <sub>pAeq</sub>		Night-time, L <sub>pAeq</sub>
8378	Snape Hall Farm, Snape Hall Road, Whitmore Heath	ML138	44	40	52	83	43	41	40	1, A, ii, b
8388	Bar Hill House Farm, Bar Hill	ML167	48	37	54	58	49	40	37	3, A, i, c
8427	Hey House & Edland Kennels/Cattery, Madeley	-	46	42	58	77	46	45	42	4, C, -, b
8482	Stableford Caravan Park #1	-	60	57	63	84	60	59	57	4, C, -, b
8483	Stableford Caravan Park #2	-	53	50	63	84	53	52	50	4, C, -, b
8486	Offley Almshouses, Madeley	-	73	68	70	88	73	72	68	4, A, -, b
14002	New House Farmhouse, Acton	ML118	56	42	55	84	57	53	42	2, A, iii, c
14006	Stableford Caravan Park	ML715	57	47	63	84	60	57	47	5(2), C(A), ii, b
14007	Stableford Court, Stableford	ML715	63	57	63	84	64	58	57	5, C, ii, c
14008	Chorlton Brook Cottage, Hill Chorlton	-	60	56	59	81	60	59	56	4, C, -, b
14009	Chorlton Mill Farm, Stableford	-	55	51	59	81	55	54	51	4, C, -, b
14011	Holmcroft, Stableford	-	49	45	59	81	49	48	45	4, C, -, b
14012	Cloud End, Hill Chorlton	-	60	56	59	81	60	59	56	4, C, -, b

Assessment location		Measurement location	Existing baseline sound levels (dB)							Data source coding
Ref	Area represented		For operational sound assessment				For construction sound assessment			
			Daytime L <sub>pAeq,16hr</sub>	Night-time L <sub>pAeq,8hr</sub>	Arithmetic average L <sub>pAFmax,5min</sub>	Highest night-time L <sub>pAFmax,5min</sub>	Daytime, L <sub>pAeq</sub>	Evening / weekend, L <sub>pAeq</sub>	Night-time, L <sub>pAeq</sub>	
14013	Weston Lodge, Stableford	-	49	43	53	71	51	45	43	5, A, -, c
14014	Oaklands, Whitmore	-	49	43	62	72	50	42	43	3, A, -, b
14015	Whitmore Hall: Dwellings And Committed Development 13/00403/FUL	-	47	43	62	72	48	42	43	3, C, -, b
14017	Smithfield Cottages, Whitmore	-	58	53	62	72	59	52	53	3, A, -, b
14018	St Mary's & All Saints' Church, Whitmore	-	54	51	62	72	55	49	51	3, C, -, b
14019	Church Farm, Whitmore	-	49	46	62	72	50	44	46	3, C, -, b
14020	The Mainwaring Arms, Whitmore	-	65	61	62	72	66	60	61	3, A, -, b
14021	North Staffordshire Hunts' Kennels, Hill Chorlton	-	37	33	53	71	39	35	33	5, A, -, c
14022	The Delves, Hill Chorlton	-	44	40	53	71	44	43	40	4, C, -, b
14023	Harfield, Hill Chorlton	-	49	45	53	71	49	48	45	4, C, -, b
14024	Smithy Lane, Whitmore	-	57	53	62	72	58	52	53	3, A, -, b
14025	Whitmore Cricket Ground, Whitmore	-	46	45	62	72	47	41	45	3, C, -, b
14026	Whitmore Lea, Whitmore	-	53	49	62	72	54	48	49	3, C, -, b

Assessment location		Measurement location	Existing baseline sound levels (dB)							Data source coding
Ref	Area represented		For operational sound assessment				For construction sound assessment			
			Daytime L <sub>pAeq,16hr</sub>	Night-time L <sub>pAeq,8hr</sub>	Arithmetic average L <sub>pAFmax,5min</sub>	Highest night-time L <sub>pAFmax,5min</sub>	Daytime, L <sub>pAeq</sub>	Evening / weekend, L <sub>pAeq</sub>	Night-time, L <sub>pAeq</sub>	
14027	The Old Parsonage, Whitmore	-	41	38	62	72	42	36	38	3, C, -, b
14028	The Grooms House, Hill Chorlton	ML121	42	35	45	56	43	39	35	2, BD, ii, c
14030	Hawthorne Hill, Whitmore	-	45	41	62	72	46	40	41	3, C, -, b
14032	Jennings Farm, Hill Chorlton	ML121	42	35	45	56	43	39	35	2, B, ii, b
14033	The Old Rectory, Whitmore	-	48	44	62	72	49	43	44	3, C, -, b
14035	The Hill, Whitmore	-	50	46	62	72	51	45	46	3, C, -, b
14036	Chapel House, Hill Chorlton	ML121	49	42	45	56	50	46	42	2, A, i, b
14037	Stone Road, Hill Chorlton	-	39	35	45	56	41	37	35	5, A, -, c
14038	Coneygreave Farmhouse, Whitmore	ML171	48	38	50	64	50	46	38	5(2), C(A), i, b
14039	Appleton Drive, Whitmore	-	57	54	58	77	57	56	54	4, C, -, b
14041	Heath Road, Whitmore	ML138	44	40	52	83	43	41	40	1, A, ii, a
14043	Heath Road, Whitmore	ML138	44	40	52	83	43	41	40	1, A, i,
14044	Coneygreave Lane, Whitmore	ML171	43	38	50	64	46	42	38	5(2), C(A), ii, b

Assessment location		Measurement location	Existing baseline sound levels (dB)							Data source coding
Ref	Area represented		For operational sound assessment				For construction sound assessment			
			Daytime L <sub>pAeq,16hr</sub>	Night-time L <sub>pAeq,8hr</sub>	Arithmetic average L <sub>pAFmax,5min</sub>	Highest night-time L <sub>pAFmax,5min</sub>	Daytime, L <sub>pAeq</sub>	Evening / weekend, L <sub>pAeq</sub>	Night-time, L <sub>pAeq</sub>	
14045	Dab Green, Whitmore	ML68	43	43	60	90	43	43	43	2, A, i, a
14046	Heath Road, Whitmore	ML172	44	38	51	76	44	43	38	1, A, i, a
14047	Heath Rise, Whitmore Heath	ML138	44	40	52	83	43	41	40	1, A, i, a
14048	Whitmore Village Hall, Whitmore	ML171	45	38	50	64	47	43	38	5(2), C(A), ii, b
14050	Common Lane, Whitmore	-	61	58	62	72	62	56	58	3, A, -, b
14051	Heath Road, Whitmore	ML138	44	40	52	83	43	41	40	1, A, ii, a
14052	Stratharran, Whitmore Heath	ML138	44	40	52	83	43	41	40	1, A, i,
14053	Coneygreave Lane, Whitmore	ML173	56	48	62	72	57	53	48	2, B, iii, c
14054	Heath Road, Whitmore	ML138	44	40	52	83	43	41	40	1, A, ii, a
14055	Heath Road, Whitmore	ML59	44	40	53	88	44	42	40	1, A, i, a
14056	Wyndways, Whitmore Heath	ML138	44	40	52	83	43	41	40	1, A, i, a
14057	Heath Road, Whitmore	ML59	44	40	53	88	44	42	40	1, A, ii, b
14058	Sandy Ridge, Whitmore Heath	ML138	44	40	52	83	43	41	40	1, A, i, a

Assessment location		Measurement location	Existing baseline sound levels (dB)							Data source coding
Ref	Area represented		For operational sound assessment				For construction sound assessment			
			Daytime L <sub>pAeq,16hr</sub>	Night-time L <sub>pAeq,8hr</sub>	Arithmetic average L <sub>pAFmax,5min</sub>	Highest night-time L <sub>pAFmax,5min</sub>	Daytime, L <sub>pAeq</sub>	Evening / weekend, L <sub>pAeq</sub>	Night-time, L <sub>pAeq</sub>	
14059	Common Farm, Whitmore Heath	ML138	44	40	52	83	43	41	40	1, A, i,
14060	Fair-Green Road, Baldwin's Gate	-	61	58	63	84	61	60	58	4, A, -, b
14061	Appleton Drive, Whitmore	ML171	54	38	50	64	56	51	38	5(2), C(A), ii, b
14062	Hunters Way, Whitmore Heath	ML138	44	40	52	83	43	41	40	1, A, i, a
14063	Fair-Green Road, Baldwin's Gate	-	47	44	50	64	47	46	44	4, C, -, b
14065	Appleton Drive, Whitmore	ML171	56	38	50	64	58	53	38	5(2), C(A), ii, b
14066	The Willows, Whitmore Heath	ML138	44	40	52	83	43	41	40	1, A, i, a
14067	The Willows, Whitmore Heath	ML138	44	40	52	83	43	41	40	1, A, i, a
14068	Kepplestone, Whitmore Heath	ML138	44	40	52	83	43	41	40	1, A, i, a
14069	Kepplestone, Whitmore Heath	ML138	44	40	52	83	43	41	40	1, A, i, a
14070	Snape Hall Close, Whitmore	ML171	46	38	50	64	49	46	38	5(2), C(A), iii, b
14071	The Nook, Whitmore Heath	ML138	44	40	52	83	43	41	40	1, A, i, a
14072	Chorlton Moss Cottage	ML114	36	32	45	56	38	33	32	5, C, -, c

Assessment location		Measurement location	Existing baseline sound levels (dB)							Data source coding
Ref	Area represented		For operational sound assessment				For construction sound assessment			
			Daytime L <sub>pAeq,16hr</sub>	Night-time L <sub>pAeq,8hr</sub>	Arithmetic average L <sub>pAFmax,5min</sub>	Highest night-time L <sub>pAFmax,5min</sub>	Daytime, L <sub>pAeq</sub>	Evening / weekend, L <sub>pAeq</sub>	Night-time, L <sub>pAeq</sub>	
14073	The Chimes, Baldwin's Gate	-	65	62	63	84	68	65	62	5(4), A, -, b
14074	West Ridge, Birch Tree Lane, Whitmore	ML138	44	40	52	83	43	41	40	1, A, ii, a
14075	Birch Tree Lane, Whitmore	ML138	44	40	52	83	43	41	40	1, A, ii, a
14076	Baldwin's Gate Church Of England Primary School	ML171	51	38	50	64	54	50	38	5(2), C(A), iii, b
14077	Birch Tree Lane, Whitmore	-	40	36	52	83	40	39	36	4, C, -, b
14078	Snape Hall Road, Whitmore	-	47	44	53	88	47	46	44	4, C, -, b
14079	Birch Tree Lane, Whitmore	ML138	44	40	52	83	43	41	40	1, A, ii, a
14080	Station Cottages, Baldwin's Gate	-	65	62	63	84	65	64	62	4, A, -, b
14081	Lea Close, Baldwin's Gate	ML171	46	38	50	64	49	45	38	5(2), C(A), iii, b
14082	Birch Tree Lane, Whitmore	ML138	44	40	52	83	43	41	40	1, A, ii, a
14083	Tollgate House, Baldwin's Gate	-	60	56	62	72	61	56	56	3, C, -, c
14084	Hillview Crescent, Baldwin's Gate	-	65	61	63	84	65	64	61	4, A, -, b
14085	Hillview Crescent, Baldwin's Gate	-	54	51	58	77	54	53	51	4, C, -, b

Assessment location		Measurement location	Existing baseline sound levels (dB)							Data source coding
Ref	Area represented		For operational sound assessment				For construction sound assessment			
			Daytime L <sub>pAeq,16hr</sub>	Night-time L <sub>pAeq,8hr</sub>	Arithmetic average L <sub>pAFmax,5min</sub>	Highest night-time L <sub>pAFmax,5min</sub>	Daytime, L <sub>pAeq</sub>	Evening / weekend, L <sub>pAeq</sub>	Night-time, L <sub>pAeq</sub>	
14086	Snape Hall Road, Whitmore	-	46	43	52	83	46	45	43	4, C, -, b
14087	Snape Hall Cottage, Snape Hall Road, Whitmore	ML138	44	40	52	83	43	41	40	1, A, ii, b
14088	Woodberry/Foxdene, Snape Hall Road, Whitmore	-	42	38	52	83	42	41	38	4, C, -, b
14090	Snape Hall Road, Whitmore	ML138	44	40	52	83	43	41	40	1, A, ii, b
14091	Sandyfields, Baldwin's Gate	ML171	48	38	50	64	50	46	38	5(2), C(A), iii, b
14094	Snape Hall Farm, Snape Hall Road, Whitmore	-	37	34	52	83	37	36	34	4, C, -, b
14098	Walls Wood, Baldwin's Gate	-	55	52	58	77	55	54	52	4, C, -, b
14099	Walls Wood, Baldwin's Gate	-	54	50	53	72	54	53	50	4, C, -, b
14100	Netherset Lane, Madeley	ML89	45	40	51	82	46	43	40	2, A, i, a
14101	Park Wood Drive, Baldwin's Gate	-	54	50	53	72	54	53	50	4, C, -, b
14102	Park Wood Drive, Baldwin's Gate	-	51	47	53	72	51	50	47	4, C, -, b
14103	Eastwood Rise, Baldwin's Gate	-	50	47	53	72	50	49	47	4, C, -, b
14104	Park Wood Drive, Baldwin's Gate	-	47	43	53	72	47	46	43	4, C, -, b

Assessment location		Measurement location	Existing baseline sound levels (dB)							Data source coding
Ref	Area represented		For operational sound assessment				For construction sound assessment			
			Daytime L <sub>pAeq,16hr</sub>	Night-time L <sub>pAeq,8hr</sub>	Arithmetic average L <sub>pAFmax,5min</sub>	Highest night-time L <sub>pAFmax,5min</sub>	Daytime, L <sub>pAeq</sub>	Evening / weekend, L <sub>pAeq</sub>	Night-time, L <sub>pAeq</sub>	
14105	Manor Glade, Baldwin's Gate	-	46	42	53	72	46	45	42	6, A, ii, c
14106	Eastwood Rise, Baldwin's Gate	-	50	46	53	72	50	49	46	4, C, -, b
14108	Netherset Lane, Madeley	ML8g	45	40	51	82	46	43	40	2, A, ii, a
14110	Park Wood Drive, Baldwin's Gate	-	46	42	53	72	46	45	42	4, C, -, b
14111	Eastwood Rise, Baldwin's Gate	-	46	43	53	72	46	45	43	4, C, -, b
14112	Manor Road, Madeley	-	47	43	53	72	47	46	43	4, C, -, b
14113	Manor Road, Baldwin's Gate	-	46	42	53	72	46	45	42	6, A, ii, c
14114	Manor Road, Baldwin's Gate	ML152	43	36	53	72	44	35	36	3(6), C(A), iii, c
14115	Manor Road, Madeley	-	46	42	53	72	46	45	42	6, A, ii, c
14116	Manor Road, Madeley	ML170	44	42	53	72	45	40	42	2, A, ii, b
14118	Knightley, Madeley	-	46	40	50	67	48	45	40	6, A, iii, c
14119	Castle Lane, Madeley	-	46	40	50	67	48	45	40	6, A, ii, c
14120	Manor Road, Madeley	ML170	44	42	53	72	45	40	42	2, A, i, a

Assessment location		Measurement location	Existing baseline sound levels (dB)							Data source coding
Ref	Area represented		For operational sound assessment				For construction sound assessment			
			Daytime L <sub>pAeq,16hr</sub>	Night-time L <sub>pAeq,8hr</sub>	Arithmetic average L <sub>pAFmax,5min</sub>	Highest night-time L <sub>pAFmax,5min</sub>	Daytime, L <sub>pAeq</sub>	Evening / weekend, L <sub>pAeq</sub>	Night-time, L <sub>pAeq</sub>	
14121	Dwelling At Hey House, Madeley	-	40	35	58	77	43	39	35	5(4), C, -, c
14122	Birches Farm Mews, Madeley	-	46	40	50	67	48	45	40	6, A, ii, c
14123	Pastoral Close, Madeley	-	46	40	50	67	48	45	40	6, A, ii, c
14125	Pastoral Close, Madeley	-	46	40	50	67	48	45	40	6, A, ii, c
14127	Castle Lane, Madeley	-	46	40	50	67	48	45	40	6, A, ii, c
14128	Vicarage Lane, Madeley	-	48	44	50	67	51	47	44	5, C, -, c
14129	The Holborn, Madeley	-	53	45	59	81	54	49	45	3(5), A(C), -, c
14130	Madeley Cemetery, Madeley	-	55	50	58	77	58	54	50	5(4), C, -, c
14131	Manor Road, Madeley	ML49	53	42	51	79	54	46	42	3(5), A(C), i, c
14132	Vicarage Lane, Madeley	-	49	42	50	67	51	46	42	5, C, -, c
14137	Poolside, Madeley	ML169	63	39	51	69	64	58	39	3(2), C, iii, c
14138	All Saints' Church, Madeley	-	57	48	50	67	58	53	48	5, C, -, c
14140	Willow Brook, Madeley	-	46	40	50	67	48	45	40	5, C, -, c

Assessment location		Measurement location	Existing baseline sound levels (dB)							Data source coding
Ref	Area represented		For operational sound assessment				For construction sound assessment			
			Daytime L <sub>pAeq,16hr</sub>	Night-time L <sub>pAeq,8hr</sub>	Arithmetic average L <sub>pAFmax,5min</sub>	Highest night-time L <sub>pAFmax,5min</sub>	Daytime, L <sub>pAeq</sub>	Evening / weekend, L <sub>pAeq</sub>	Night-time, L <sub>pAeq</sub>	
14141	Woore Road, Madeley	-	50	47	50	67	50	49	47	4, C, -, b
14142	Station Road, Madeley	-	60	57	63	84	60	59	57	4, C, -, b
14144	Smithy Corner, Madeley	-	58	52	63	84	60	55	52	5, C, -, c
14145	Madeley Allotment, Madeley	-	61	58	59	81	61	60	58	4, C, -, b
14146	Haywood Court, Madeley	-	58	53	63	84	61	57	53	5(4), C, -, c
14147	Unreal Paintball Site, Manor Farm, Manor Road, Madeley	ML49	46	39	51	79	47	42	39	1, A, i, a
14148	Haywood Court, Madeley	-	70	66	69	87	70	69	66	4, A, -, b
14149	Cherry Hill, Madeley	-	41	36	50	67	44	41	36	5(4), C, -, c
14150	Moss Lane, Madeley	-	68	64	66	84	68	67	64	4, A, -, b
14151	Morningside, Madeley	-	46	43	50	67	46	45	43	4, C, -, b
14152	Sir John Offley Church Of England Primary School, Madeley	-	57	53	63	84	57	56	53	4, C, -, b
14153	Moss Lane, Madeley	-	42	34	50	67	43	41	34	5, A, -, c
14155	John Offley Road, Madeley	-	52	49	50	67	52	51	49	4, C, -, b

Assessment location		Measurement location	Existing baseline sound levels (dB)							Data source coding
Ref	Area represented		For operational sound assessment				For construction sound assessment			
			Daytime L <sub>pAeq,16hr</sub>	Night-time L <sub>pAeq,8hr</sub>	Arithmetic average L <sub>pAFmax,5min</sub>	Highest night-time L <sub>pAFmax,5min</sub>	Daytime, L <sub>pAeq</sub>	Evening / weekend, L <sub>pAeq</sub>	Night-time, L <sub>pAeq</sub>	
14156	River Lea Mews, Madeley	-	37	31	50	67	38	35	31	5, C, -, c
14157	Morningside, Madeley	-	42	37	50	67	45	42	37	5(4), C, -, c
14158	Mallard Close, Madeley	-	53	43	59	81	54	50	45	7, C, , c
14160	John Offley Road, Madeley	-	47	44	50	67	47	46	44	4, C, -, b
14161	Bar Hill, Madeley	-	52	49	59	81	52	51	49	4, C, -, b
14162	Moss Lane, Madeley	-	65	61	63	84	65	64	61	4, A, -, b
14163	Bar Hill, Madeley	ML169	59	51	59	81	60	53	51	3(5), A, i, c
14164	Morningside, Madeley	-	45	39	50	67	47	45	39	5, C, -, c
14165	Bar Hill, Madeley	ML168	51	43	59	81	52	46	43	5, A, i, c
14166	Charles Cotton Drive, Madeley	-	39	35	50	67	42	39	35	5, C, -, c
14167	Moss Lane GP Surgery	-	48	43	50	67	50	49	43	5, C, -, c
14168	Moss Lane, Madeley	-	60	57	63	84	60	59	57	4, C, -, b
14169	Moss Lane, Madeley	-	49	44	50	67	52	50	44	5(4), C, -, c

Assessment location		Measurement location	Existing baseline sound levels (dB)							Data source coding
Ref	Area represented		For operational sound assessment				For construction sound assessment			
			Daytime L <sub>pAeq,16hr</sub>	Night-time L <sub>pAeq,8hr</sub>	Arithmetic average L <sub>pAFmax,5min</sub>	Highest night-time L <sub>pAFmax,5min</sub>	Daytime, L <sub>pAeq</sub>	Evening / weekend, L <sub>pAeq</sub>	Night-time, L <sub>pAeq</sub>	
14170	Moss Lane, Madeley	-	66	62	63	84	66	65	62	4, A, -, b
14171	Bar Hill, Madeley	ML168	56	45	59	81	57	48	45	3(1), C(B), ii, b
14172	Heather Glade, Madeley	-	37	32	50	67	39	37	32	5, C, -, c
14173	Pear Tree Drive, Madeley	-	41	36	50	67	44	41	36	5(4), C, -, c
14174	The Bridle Path, Madeley	-	43	40	50	67	43	42	40	4, C, -, b
14176	The Bridle Path, Madeley	-	42	38	50	67	42	41	38	4, C, -, b
14177	The Bridle Path, Madeley	-	46	43	50	67	46	45	43	4, C, -, b
14178	Bower End Lane, Madeley	-	65	62	63	84	65	64	62	4, A, -, b
14179	The Bridle Path, Madeley	-	40	36	50	67	43	40	36	5(4), C, -, c
14180	Bar Hill, Madeley	ML168	55	44	59	81	56	47	44	3, C(B), ii, c
14182	Furnace Lane, Madeley	ML113	47	45	55	65	48	43	45	2, B, iii, c
14183	86 Bar Hill, Madeley	ML168	52	39	59	81	53	44	39	3(1), C(B), i, a
14184	Moss House Farm, Madeley	-	51	47	54	90	51	50	47	4, C, -, b

Assessment location		Measurement location	Existing baseline sound levels (dB)							Data source coding
Ref	Area represented		For operational sound assessment				For construction sound assessment			
			Daytime L <sub>pAeq,16hr</sub>	Night-time L <sub>pAeq,8hr</sub>	Arithmetic average L <sub>pAFmax,5min</sub>	Highest night-time L <sub>pAFmax,5min</sub>	Daytime, L <sub>pAeq</sub>	Evening / weekend, L <sub>pAeq</sub>	Night-time, L <sub>pAeq</sub>	
14185	Bower End Lane, Madeley	ML166	48	35	48	61	45	51	35	2, A, i, a
14187	Bar Hill, Madeley	ML167	43	41	54	58	44	41	41	2, A, i, a
14189	Bower End Lane, Madeley	ML113	48	46	55	65	49	44	46	2, A, i, a
14190	Bar Hill, Madeley	ML66	43	33	48	72	44	38	33	2, A, i, a
14192	Bower End Lane, Madeley	ML40	39	33	44	71	38	39	33	2, A, ii, b
14195	Mill Lane, Wrinehill	-	47	44	45	56	47	46	44	4, C, -, b
14199	School Lane, Onneley	ML40	39	33	44	71	38	39	33	2, A, i, a
14200	Wrinehill Hall Farm, Mill Lane, Wrinehill	-	36	33	56	77	36	35	33	4, C, -, b
14203	Wrinehill Gardens, Wrinehill Hall, Wrinehill	-	35	31	56	77	35	34	31	4, C, -, b
14204	Wrinehill Mill Farm, Wrinehill	-	44	40	56	77	44	43	40	4, C, -, b
14205	Wrinehill Mill, Wrinehill	-	48	45	56	77	48	47	45	4, C, -, b
14206	Sheet Anchor Pub, Baldwin's Gate	ML171	58	38	50	64	60	55	38	5(2), C(A), ii, b
14207	Whitmore Post Office, Baldwin's Gate	ML171	66	38	50	64	69	65	38	5(2), C(A), ii, b

Assessment location		Measurement location	Existing baseline sound levels (dB)							Data source coding
Ref	Area represented		For operational sound assessment				For construction sound assessment			
			Daytime L <sub>pAeq,16hr</sub>	Night-time L <sub>pAeq,8hr</sub>	Arithmetic average L <sub>pAFmax,5min</sub>	Highest night-time L <sub>pAFmax,5min</sub>	Daytime, L <sub>pAeq</sub>	Evening / weekend, L <sub>pAeq</sub>	Night-time, L <sub>pAeq</sub>	
14208	Snape Hall Farmhouse, Snape Hall Road, Whitmore Heath	-	48	45	52	83	48	47	45	4, C, -, b
14209	Old Madeley Manor (Off Manor Road), Madeley	ML170	44	42	53	72	45	40	42	2, A, ii, b
14210	Manor Farmhouse, Madeley / CD Ref: 10/00108/FUL	ML49	46	39	51	79	47	42	39	1, A, i, a
14211	Offley Well Head, Madeley	-	58	55	59	81	58	57	55	4, C, -, b
14212	Madeley White Star Football Club, Madeley	-	52	48	59	81	52	51	48	4, C, -, b
14213	Hillview Crescent, Baldwin's Gate (CD Ref.: 13/00426/OUT)	-	61	58	63	84	61	60	58	4, C, -, b
14214	Appleton Drive, Whitmore (CD Ref.: 13/00145/OUT)	ML171	59	38	50	64	61	56	38	5(2), C(A), ii, b
14215	Birch Tree Lane, Whitmore (CD Ref.: 15/00281/FUL)	-	46	43	52	83	46	45	43	4, C, -, b
14216	Haywood Court, Madeley (CD Ref.: 15/00277/FUL)	-	71	66	69	87	71	70	66	4, A, -, b
14217	Moss Lane, Madeley (CD Ref.: 14/00691/FUL)	-	71	67	70	89	71	70	67	4, A, -, b
14218	Moss Lane, Madeley (CD Ref.: 12/00028/FUL)	-	71	67	70	88	71	70	67	4, A, -, b
14219	The Bridle Path, Madeley (CD Ref.: 13/00990/OUT)	-	50	47	54	90	50	49	47	4, C, -, b
14220	Whitmore Arms	-	42	38	62	72	43	37	38	3, C, -, b

Assessment location		Measurement location	Existing baseline sound levels (dB)							Data source coding
Ref	Area represented		For operational sound assessment				For construction sound assessment			
			Daytime L <sub>pAeq,16hr</sub>	Night-time L <sub>pAeq,8hr</sub>	Arithmetic average L <sub>pAFmax,5min</sub>	Highest night-time L <sub>pAFmax,5min</sub>	Daytime, L <sub>pAeq</sub>	Evening / weekend, L <sub>pAeq</sub>	Night-time, L <sub>pAeq</sub>	
14222	Snape Hall Road, Whitmore	-	56	53	58	77	56	55	53	4, C, -, b
14223	Walls Wood, Baldwins Gate	-	56	53	58	77	56	55	53	4, C, -, b
14224	The Old Rectory, Whitmore	-	44	40	62	72	45	39	40	3, C, -, b
14225	Netherset Lane, Madeley	ML89	45	40	51	82	46	43	40	2, A, ii, b
14226	Baldwin's Gate Sandstone Hills And Heaths #1	-	43	39	53	71	46	43	39	5, C, -, b
14227	Manor Road, Madeley	-	46	42	53	72	46	45	42	6, A, ii, c
14228	Netherset Lane, Madeley	ML89	44	40	51	82	45	42	40	2, A, iii, c
14229	Bar Hill, Madeley	ML167	35	33	54	58	36	33	33	2, B, iii, c
14230	Bar Hill, Madeley	ML167	34	32	54	58	35	32	32	2, B, iii, c
14231	Mill Lane, Wrinehill	ML40	39	33	44	71	38	39	33	2, A, iii, c
14232	School Lane, Onneley	ML40	39	33	44	71	38	39	33	2, A, iii, c
14233	Woodcroft, Red Lane, Madeley	-	52	48	59	81	52	51	48	4, C, -, b
14234	Monument Lodge, Manor Road, Madeley	-	61	58	59	81	61	60	58	4, C, -, b

Assessment location		Measurement location	Existing baseline sound levels (dB)							Data source coding
Ref	Area represented		For operational sound assessment				For construction sound assessment			
			Daytime L <sub>pAeq,16hr</sub>	Night-time L <sub>pAeq,8hr</sub>	Arithmetic average L <sub>pAFmax,5min</sub>	Highest night-time L <sub>pAFmax,5min</sub>	Daytime, L <sub>pAeq</sub>	Evening / weekend, L <sub>pAeq</sub>	Night-time, L <sub>pAeq</sub>	
14235	Station Road, Madeley	-	73	68	70	88	73	72	68	4, A, -, b
14237	Rowley House, Moss Lane, Madeley (CD Ref: 14/00009/FUL)	-	49	44	50	67	52	50	44	5(4), C, -, c
14238	Moss Farm, Bower End Lane, Madeley (CD Ref: 14/00132/FUL)	-	51	47	54	90	51	50	47	4, C, -, b
14239	The Moss, Moss Lane, Madeley (CD Ref: 14/00299/OUT)	-	66	62	63	84	66	65	62	4, A, -, b
14240	Manor Road, Madeley	ML49	46	39	51	79	47	42	39	1, A, i, a
14241	The Brackens, Heath Road, Whitmore Heath	ML172	44	38	51	76	44	43	38	1, A, i, a

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Table 2: Data source coding key

Code	Data source type
1	Long-term measurement location (c. 7 days)
2	Short-term (c. 24 hours)
3	Specific road traffic validated prediction
4	Specific rail traffic validated prediction
5	Specific combined road and rail traffic validated prediction
6	Levels adopted from nearby assessment location
Code	Corrections applied
A	Data from above source applied directly
B	Correction applied for distance from source
C	Correction applied for downwind conditions
D	Minimum level cut-off applied
Code	Distance from measurement
i	Data applied from a measurement at or very close to the assessment location.
ii	Data applied from a local measurement location at a greater distance but noted to have equivalent acoustic climate.
iii	Data applied from a distant measurement location where sound levels would be expected to be similar.
Code	Uncertainty
a	Data are considered highly representative of the prevailing sound climate.
b	Data are considered representative of the prevailing sound climate, but uncertainties and/or variations in measured levels indicate that there may be a higher degree of uncertainty than for (a).
c	Data are considered to be an estimate of the sound climate due to assumptions made.

### 3.5 Future baseline methodology

#### Construction

- 3.5.1 The assessment of noise from construction activities assumes a future baseline year of 2020. As a conservative assumption it has been assumed that no change in baseline sound levels will occur between the existing baseline (2016) and the future baseline year of 2020.

## Operation

- 3.5.2 Future baseline sound levels for operation (2027) have been calculated to account for changes in baseline sound sources between the date of the existing baseline sound levels and 2027. Changes in existing sound sources between 2016 and 2027 may result in changes to baseline sound levels.
- 3.5.3 For major transportation sources, data for existing and future baseline operations have been reviewed. Where changes may occur between the existing baseline and future baseline (2027) situations which may influence the assessment of likely significant effects, expected changes in baseline sound levels have been derived. For example, expected changes in traffic flow, composition and speed have been used to calculate changes in sound emission from roads using the methodology from the Calculation of Road Traffic Noise<sup>5</sup>.
- 3.5.4 The changes to major sound sources which have been identified in this area are summarised in Table 3.

Table 3: 2027 future baseline sound levels

Sound source affected	Cause of change in levels	Change in sound levels (existing baseline to 2027 future baseline (dB))	
		Daytime, $L_{pAeq,16hr}$	Night-time, $L_{pAeq,8hr}$
A53 Newcastle Road, through Baldwins Gate	Increased traffic flow	0.8	0.5

<sup>5</sup> DoT memorandum, Calculation of road traffic noise, 1988

## 4 Construction

### 4.1 Evaluation of impacts and effects

- 4.1.1 This appendix provides a quantitative assessment of construction noise and vibration impacts/effects and a qualitative assessment of likely significant effects, based on the impacts/effects identified and other local context information consistent with the scope and methodology defined for the Proposed Scheme.
- 4.1.2 Indirect effects arising from temporary changes in traffic patterns on the existing road network as a consequence of constructing the Proposed Scheme are also reported, where they are likely to occur within the study area as defined in Volume 5: Appendix SV-001-000.
- 4.1.3 In undertaking the assessment of sound, noise and vibration, consistent with the EIA Directive<sup>6</sup> and National Planning Practice Guidance<sup>7</sup> a differentiation between impacts and effects, adverse effects and significant effects is made. Further information is provided in Volume 5: Appendix SV-001-000.
- 4.1.4 The assessment of impacts and effects has been undertaken at assessment locations that are representative of a number of dwellings or other sensitive receptors. The construction assessment locations employed in this assessment are presented on Map Series SV-03 in the Volume 5: Sound, Noise and Vibration Map Book.
- 4.1.5 Baseline sound level data has been collected at locations representative of the airborne sound-sensitive receptors and presented in Table 1.

### 4.2 Effects during construction

#### Introduction

- 4.2.1 The assessment is reported first for ground-borne vibration and then for airborne sound. Under each of these headings, the results of the quantitative identification of impacts, effects and significant effects are presented. The significant effects and the evidence used to support these conclusions are presented in Volume 2, Whitmore Heath to Madeley (CA Report 4), Section 13.
- 4.2.2 The structure of this section of the assessment report is:
- avoidance and mitigation measures; and
  - quantitative identification of impact and effects:
    - ground-borne sound and vibration:
      - residential; and
      - non-residential.

<sup>6</sup> European Commission (2014), EC Directive 85/337/EEC, as amended by 97/11/EC, 2003/35/EC, 2011/92/EC and 2014/52/EU ('the EIA Directive')

<sup>7</sup> National Planning Practice Guidance – Noise, <http://planningguidance.planningportal.gov.uk>; refer to the table summarising noise exposure hierarchy

- Airborne sound:
  - residential; and
  - non-residential

### Avoidance and mitigation measures

4.2.3 These are set out in, Volume 2, Whitmore Heath to Madeley (CA Report 4), Section 13.

### Quantitative identification of impacts and effects

#### *Ground-borne vibration*

4.2.4 Assessment locations defined for the quantitative assessment of impacts are shown on Map Series SV-03 in the Volume 5: Sound, Noise and Vibration Map Book.

4.2.5 For each assessment location, the assessment results for residential and non-residential receptors are presented in Table 5. Explanation of the information in Table 5, Table 6 and Table 7 is provided in Volume 5: Appendix SV-001-000, with the following additional notes in Table 4.

Table 4: Explanatory notes for assessment results - direct construction effects

Symbol	Explanation
	Where the significant effect column is highlighted, then a significant effect is identified at the referenced community, or individual receptor
	Yellow denotes a low ground-borne noise impact or a minor ground-borne vibration impact
	Orange denotes a medium ground-borne noise impact or a moderate ground-borne vibration impact
	Red denotes a high ground-borne noise impact or a major ground-borne vibration impact
	Dark red denotes a very high ground-borne noise impact
*	Significant effect - the quantitative impact methodology has identified an impact at this receptor which, based upon further qualitative receptor information, (see assessment text) does not give rise to a significant effect
~	When considered under the significance criteria set out in Appendix SV-001-000, Annex A, Section 1.3, these adverse effects are not considered to be significant on a community basis
A	Sound levels from HS2 exceed Lowest Observed Adverse Effect Level (LOAEL): the significance criteria set out in Appendix SV001-000, Annex A, Section 1.3 are considered when establishing significant effects
S	Sound levels from HS2 exceed Significant Observed Adverse Effect Level (SOAEL): noise insulation (or temporary rehousing at higher noise levels) therefore provided
NA	Sound levels from HS2 do not exceed Lowest Observed Adverse Effect Level (LOAEL), therefore generally no adverse effect
B	Type of receptor - residential
R	Type of receptor - residential

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Symbol	Explanation
G1 – G5	Type of receptor - (G1) theatres, large auditoria and concert halls, (G2) sound recording and broadcast studios, (G3) places of meeting for religious worship, courts, cinemas, lecture theatres, museums and small auditoria or halls, (G4) schools, colleges, hospitals, hotels and libraries, and (G5) offices and general commercial premises
V1-V4	Type of receptor - (V1) vibration sensitive research and manufacturing, hospital, and university equipment, (V2) hotels, hospital wards and education dormitories, (V3) offices, schools and places of worship, (V4) workshops
T	Receptor design - typical
S	Receptor design - special
H	Existing environment - high existing ambient noise levels, day >75 dB, evening >65 dB or night >55 dB $L_{pAeq}$ at the facade
L	Existing environment - low existing ambient noise levels, day and evening $\leq 45$ dB, or night $\leq 35$ dB $L_{pAeq}$ at the facade
D,E,N	Impact duration (months) - duration of impact during the day (D), evening (E) or night (N)
O, CT, V	Combined Impact: If impacts from other construction activities occur at this location: Onsite activities (O), off-site construction traffic activities (CT), or construction Vibration (V)
NI	Mitigation effect - identified as likely to qualify for noise insulation under the Draft Code of Construction Practice (CoCP) <sup>8</sup>
TR	Mitigation effect - identified as likely to qualify for temporary rehousing under the Draft CoCP

<sup>8</sup> Draft Code of Construction Practice, Volume 5: Appendix CT-003-000

Table 5: Assessment of construction induced ground-borne vibration at residential and non-residential receptors

Assessment location		Impact criteria				Significance criteria									Significant effect
Ref.	Area represented	Peak particle velocity (PPV) [mm/s] on foundation	Typical/highest monthly indoor vibration dose value (VDV) [m/s <sup>-1.75</sup> ]		Construction activity resulting in highest forecast vibration levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Impact duration [m]	Mitigation effect	
			Day 0700-2300	Night 2300-0700											
14035	The Hill, Whitmore	0.3	0.24/0.37	-	Piling	A	1	R	T	-	-	-	Up to 3	-	~
14041	Heath Road, Whitmore	0.2	0.07/0.10	-	Underground utility diversion	NA	1	R	T	-	-	-	-	-	-
14050	Common Lane, Whitmore	1	0.03/<0.8 <sup>9</sup>	-	Underground utility diversion	A	9	R	T	-	-	-	0.2	-	<sup>10</sup>
14087	Snape Hall Road, Whitmore	5.5	0.09/<0.8 <sup>9</sup>	-	Road construction	A	2	R	T	-	-	-	1	-	~
14094	Snape Hall Road, Whitmore	6.8	0.16/<0.8 <sup>9</sup>	-	Underground utility diversion	A	1	R	T	-	-	-	0.2	-	<sup>10</sup>
14120	Manor Road, Madeley	0.5	0.11/0.40	-	Underground utility diversion	A	1	R	T	-	-	-	0.2	-	<sup>10</sup>
14131	Manor Road, Madeley	3.6	0.01/<0.8 <sup>9</sup>	-	Road construction	A	1	R	T	-	-	-	1	-	~
14171	Bar Hill, Madeley	3.3	0.05/<0.8 <sup>9</sup>	-	Road construction	A	16	R	T	-	-	-	0.5	-	<sup>10</sup>
14180	Bar Hill, Madeley	6.4	0.09/<0.8 <sup>9</sup>	-	Underground utility diversion	A	5	R	T	-	-	-	0.2	-	<sup>10</sup>
14183	86 Bar Hill, Madeley	0.3	0.13/0.19	-	Underground utility diversion	NA	2	R	T	-	-	-	0.2	-	-
14184	Moss House Farm, Madeley	1.2	0.05/<0.8 <sup>9</sup>	-	Underground utility diversion	A	5	R	T	-	-	-	0.2	-	<sup>10</sup>

<sup>9</sup> Construction methods will be selected to ensure that the on a monthly basis the significant adverse effect level is not exceeded

<sup>10</sup> Impacts with durations of less than 1 month are not generally considered significant

Assessment location		Impact criteria				Significance criteria								Significant effect	
Ref.	Area represented	Peak particle velocity (PPV) [mm/s] on foundation	Typical/highest monthly indoor vibration dose value (VDV) [m/s <sup>1.75</sup> ]		Construction activity resulting in highest forecast vibration levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Impact duration [m]		Mitigation effect
			Day 0700-2300	Night 2300-0700											
14185	Bower End Lane, Madeley	0.3	0.19/0.27	-	Piling	A	4	R	T	-	-	-	Up to 3	-	7
14189	Bower End Lane, Madeley	3.3	0.04/<0.8 <sup>9</sup>	-	Road construction	A	1	R	T	-	-	-	0.75	-	10
14233	Woodcroft, Red Lane, Madeley	1.8	0.08/<0.8 <sup>9</sup>	-	Road construction	A	1	R	T	-	-	-	0.75	-	10

*Airborne sound: direct impacts and effects*

- 4.2.6 Activities associated with the construction phases of the Proposed Scheme will generate airborne noise. The assessment of the likely impacts and significant effects as a result of the construction noise has considered the effects on:
- residential receptors, both as individual dwellings and communities; and
  - non-residential receptors, including quiet areas.
- 4.2.7 For each type of receptor, subject to the screening distances identified, and based upon supplied plant information from engineers, the typical and highest monthly  $L_{Aeq,T}$  noise levels from construction activities have been calculated at the façade of all assessment locations, which are representative of a number of receptors in the study area.
- 4.2.8 The assessment results, impact criteria and significance criteria for the assessment of the scheme at residential and non-residential receptors are presented in Table 6 and Table 7 respectively.
- 4.2.9 Explanation of the information within Table 6 and Table 7 is provided in Volume 5: Appendix SV-001-000, with the additional notes presented in Table 4.

Table 6: Assessment of construction noise at residential receptors

Assessment location		Impact criteria			Significance criteria										
Ref	Area represented	Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] at the facade [assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	Significant effect
		Day 0700-1900	Evening 1900-2300	Night 2300-0700											
8482	Stableford Caravan Park #1	46/50 [B]	-	-	Day: On-site traffic	NA	15	R	T	-	-	-	-	-	
8483	Stableford Caravan Park #2	46/50 [A]	-	-	Day: On-site traffic	NA	22	R	T	-	-	-	-	-	
14002	New House Farmhouse, Acton	49/54 [A]	<45	37/39 [B]	Day: Haul road setup Night: Tunnelling / tunnelling support	NA	3	R	T	-	-	-	-	-	
14006	Stableford Caravan Park #3	46/50 [A]	-	-	Day: On- site traffic	NA	29	R	T	-	-	-	-	-	
14007	Stableford Court, Stableford	47/51 [B]	-	-	Day: On- site traffic	NA	11	R	T	-	-	-	-	-	
14008	Chorlton Brook Cottage, Hill Chorlton	52/56 [B]	-	-	Day: Earthworks	NA	2	R	T	-	-	-	-	-	
14009	Chorlton Mill Farm, Stableford	52/56 [A]	-	-	Day: Earthworks	NA	1	R	T	-	-	-	-	-	
14011	Holmcroft, Stableford	49/53 [A]	-	-	Day: On- site traffic	NA	7	R	T	-	-	-	-	-	

Assessment location		Impact criteria			Significance criteria										
Ref	Area represented	Typical/highest monthly outdoor $L_{pAeq}$ [dB] at the facade [assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	Significant effect
		Day 0700-1900	Evening 1900-2300	Night 2300-0700											
14012	Cloud End, Hill Chorlton	57/61 [B]	<45	36/38 [C]	Day: Earthworks Night: Tunnelling / tunnelling support	NA	1	R	T	-	-	-	-	-	
14013	Weston Lodge, Stableford	46/50 [A]	-	-	Day: On- site traffic	NA	1	R	T	-	-	-	-	-	
14014	Oaklands, Whitmore	56/61 [A]	<45	40/42 [B]	Day: Haul road setup Night: Tunnelling / tunnelling support	NA	3	R	T	-	-	-	-	-	
14015	Whitmore Hall: Dwellings and CD ref.:13/00403/FUL	49/54 [A]	-	-	Day: Haul road setup	NA	6	R	T	-	-	-	-	-	
14017	Smithfield Cottages, Whitmore	53/58 [A]	<45	34/37 [C]	Day: Haul road setup Night: Tunnelling / tunnelling support	NA	10	R	T	-	-	-	-	-	
14019	Church Farm, Whitmore	55/60 [A]	<45	37/40 [C]	Day: Haul road setup Night: Tunnelling / tunnelling support	NA	1	R	T	-	-	-	-	-	
14022	The Delves, Hill Chorlton	55/59 [A]	<45	37/39 [B]	Day: Earthworks Night: Tunnelling / tunnelling support	NA	2	R	T	-	-	-	-	-	

Assessment location		Impact criteria			Significance criteria										
Ref	Area represented	Typical/highest monthly outdoor $L_{pAeq}$ [dB] at the facade [assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	Significant effect
		Day 0700-1900	Evening 1900-2300	Night 2300-0700											
14023	Harfield, Hill Chorlton	58/63 [A]	<45	38/40 [C]	Day: Earthworks Night: Tunnelling / tunnelling support	NA	2	R	T	-	-	-	-	-	
14024	Smithy Lane, Whitmore	53/59 [A]	-	-	Day: Haul road setup	NA	3	R	T	-	-	-	-	-	
14026	Whitmore Lea, Whitmore	57/63 [A]	<45	36/39 [C]	Day: Haul road setup / Night: Tunnelling / tunnelling support	NA	3	R	T	-	-	-	-	-	
14027	The Old Parsonage, Whitmore	46/52 [A]	-	-	Day: On- site traffic	NA	1	R	T	-	-	-	-	-	
14028	The Grooms House, Hill Chorlton	51/56 [A]	<45	36/39 [A]	Day: Haul road setup Night: Tunnelling / tunnelling support	NA	4	R	T	-	-	-	-	-	
14030	Hawthorne Hill, Whitmore	57/62 [A]	<45	36/39 [B]	Day: Haul road setup Night: Tunnelling / tunnelling support	NA	2	R	T	-	-	-	-	-	
14032	Jennings Farm, Hill Chorlton	49/54 [A]	<45	35/38 [A]	Day: Haul road setup Night: Tunnelling / tunnelling support	NA	4	R	T	-	-	-	-	-	

Assessment location		Impact criteria			Significance criteria										
Ref	Area represented	Typical/highest monthly outdoor $L_{pAeq}$ [dB] at the facade [assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	Significant effect
		Day 0700-1900	Evening 1900-2300	Night 2300-0700											
14033	The Old Rectory, Whitmore	61/67 [A]	47/49 [A]	47/49 [B]	Day: Earthworks Eve: Tunnelling / tunnelling support Night: Tunnelling / tunnelling support	A	1	R	T	-	-	D4	-	-	~
14035	The Hill, Whitmore	61/66 [A]	51/53 [A]	51/53 [C]	Day: Earthworks Eve: Tunnelling / tunnelling support Night: Tunnelling / tunnelling support	A	1	R	T	-	-	D1	-	-	~
14036	Chapel House, Hill Chorlton	51/55 [A]	<45	36/38 [B]	Day: Haul road setup Night: Tunnelling / tunnelling support	NA	5	R	T	-	-	-	-	-	
14037	Stone Road, Hill Chorlton	51/55 [A]	<45	36/38 [A]	Day: Earthworks Night: Tunnelling / tunnelling support	NA	1	R	T	-	-	-	-	-	
14038	Coneygreave Farmhouse, Whitmore	58/63 [A]	46/48 [A]	46/48 [A]	Day: Earthworks Eve: Tunnelling / tunnelling support Night: Tunnelling / tunnelling support	A	1	R	T	-	-	N7	-	-	~
14039	Appleton Drive, Whitmore	49/54 [A]	-	-	Day: Planting	NA	15	R	T	-	-	-	-	-	
14041	Heath Road, Whitmore	58/64 [A]	-	-	Day: Haul road setup	NA	1	R	T	-	-	-	-	-	

Assessment location		Impact criteria			Significance criteria										
Ref	Area represented	Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] at the facade [assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	Significant effect
		Day 0700-1900	Evening 1900-2300	Night 2300-0700											
14043	Heath Road, Whitmore	57/61 [A]	43/45 [A]	43/45 [B]	Day: Haul road setup Eve: Tunnelling / tunnelling support Night: Tunnelling / tunnelling support	NA	2	R	T	-	-	-	-	-	
14044	Coneygreave Lane, Whitmore	53/59 [A]	-	-	Day: Planting	NA	11	R	T	-	-	-	-	-	
14045	Dab Green, Whitmore	44/49 [A]	-	-	Day: On-site traffic	NA	2	R	T	-	-	-	-	-	
14046	Heath Road, Whitmore	58/62 [A]	51/54 [A]	51/54 [A]	Day: Excavation and prop installation Eve: Tunnelling / tunnelling support Night: Tunnelling / tunnelling support	A	1	R	T	-	-	N10	-	-	~
14047	Broadlands, Heath Rise, Whitmore Heath	54/59 [A]	43/45 [A]	43/45 [B]	Day: Haul road setup Eve: Tunnelling / tunnelling support Night: Tunnelling / tunnelling support	NA	1	R	T	-	-	-	-	-	
14050	Common Lane, Whitmore	60/66 [B]	46/49 [C]	46/49 [C]	Day: Underground utility diversion Eve: Tunnelling / tunnelling support Night: Tunnelling / tunnelling support	NA	9	R	T	-	-	-	-	-	

Assessment location		Impact criteria			Significance criteria										
Ref	Area represented	Typical/highest monthly outdoor $L_{pAeq}$ [dB] at the facade [assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	Significant effect
		Day 0700-1900	Evening 1900-2300	Night 2300-0700											
14051	Heath Road, Whitmore	61/65 [A]	-	-	Day: Earthworks	A	2	R	T	-	-	D1	-	-	~
14052	Heath Road, Whitmore Heath	49/55 [A]	-	-	Day: Earthworks	NA	2	R	T	-	-	-	-	-	
14053	Coneygreave Lane, Whitmore	50/55 [A]	-	-	Day: Planting	NA	8	R	T	-	-	-	-	-	
14054	Heath Road, Whitmore	57/62 [A]	50/52 [A]	50/52 [B]	Day: Excavation and prop installation Eve: Tunnelling / tunnelling support Night: Tunnelling / tunnelling support	A	1	R	T	-	-	N6	-	-	~
14055	Heath Road, Whitmore	55/60 [A]	47/49 [A]	47/49 [B]	Day: Earthworks Eve: Tunnelling / tunnelling support Night: Tunnelling / tunnelling support	NA	5	R	T	-	-	-	-	-	
14056	Wyndways, Whitmore Heath	48/54 [A]	-	-	Day: Earthworks	NA	1	R	T	-	-	-	-	-	
14057	Heath Road, Whitmore	56/61 [A]	47/49 [A]	47/49 [B]	Day: Underground utility diversion Eve: Tunnelling / tunnelling support Night: Tunnelling / tunnelling support	NA	1	R	T	-	-	-	-	-	

Assessment location		Impact criteria			Significance criteria										
Ref	Area represented	Typical/highest monthly outdoor $L_{pAeq}$ [dB] at the facade [assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	Significant effect
		Day 0700-1900	Evening 1900-2300	Night 2300-0700											
14058	Sandy Ridge, Whitmore Heath	51/56 [A]	-	-	Day: On-site traffic	NA	1	R	T	-	-	-	-	-	
14059	Common Farm, Whitmore Heath	54/59 [A]	-	-	Day: Haul road setup	NA	2	R	T	-	-	-	-	-	
14060	Fair-Green Road, Baldwin's Gate	47/52 [B]	-	-	Day: On- site traffic	NA	24	R	T	-	-	-	-	-	
14061	Appleton Drive, Whitmore	48/52 [A]	-	33/36 [A]	Day: On-site traffic Night: Tunnelling / tunnelling support	NA	4	R	T	-	-	-	-	-	
14062	Hunters Way, Whitmore Heath	56/61 [A]	-	-	Day: Excavation and prop installation	NA	1	R	T	-	-	-	-	-	
14063	Fair-Green Road, Baldwin's Gate	46/52 [A]	-	-	Day: On-site traffic	NA	23	R	T	-	-	-	-	-	
14065	Appleton Drive, Whitmore	49/53 [A]	<45	33/36 [A]	Day: On-site traffic Night: Tunnelling / tunnelling support	NA	10	R	T	-	-	-	-	-	
14066	The Willows, Whitmore Heath	58/64 [A]	-	-	Day: Earthworks	NA	1	R	T	-	-	-	-	-	

Assessment location		Impact criteria			Significance criteria										
Ref	Area represented	Typical/highest monthly outdoor $L_{pAeq}$ [dB] at the facade [assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	Significant effect
		Day 0700-1900	Evening 1900-2300	Night 2300-0700											
14067	The Dingle, Whitmore Heath	56/60 [A]	-	-	Day: Earthworks	NA	1	R	T	-	-	-	-	-	
14068	Kepplestone, Whitmore Heath	64/69 [A]	<45	34/39 [B]	Day: Earthworks Night: Tunnelling / tunnelling support	A	1	R	T	-	-	D19	-	-	CSV04-Co1
14069	Ferridge / Mandarin House, Whitmore Heath	64/69 [A]	-	-	Day: Earthworks	A	3	R	T	-	-	D21	-	-	CSV04-Co1
14070	Snape Hall Close, Whitmore	47/52 [A]	-	-	Day: On-site traffic	NA	10	R	T	-	-	-	-	-	
14071	The Nook / Tree Tops, Whitmore Heath	54/59 [A]	-	-	Day: On-site traffic	NA	2	R	T	-	-	-	-	-	
14072	Chorlton Moss Cottage, Baldwin's Gate	48/52 [A]	-	-	Day: Earthworks	NA	6	R	T	-	-	-	-	-	
14073	The Chimes, Baldwin's Gate	49/53 [C]	-	-	Day: Earthworks	NA	5	R	T	-	-	-	-	-	
14074	West Ridge, Birch Tree Lane, Whitmore Heath	60/65 [A]	-	-	Day: Earthworks	NA	1	R	T	-	-	D19	-	-	CSV04-Co1

Assessment location		Impact criteria			Significance criteria										Significant effect
Ref	Area represented	Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] at the facade [assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 0700-1900	Evening 1900-2300	Night 2300-0700											
14075	Birch Tree Lane, Whitmore	56/60 [A]	-	-	Day: Earthworks	NA	1	R	T	-	-	-	-	-	
14077	Birch Tree Lane, Whitmore	56/60 [A]	-	-	Day: On-site traffic	NA	2	R	T	-	-	-	-	-	
14078	Snape Hall Road, Whitmore	46/51 [A]	-	-	Day: Earthworks	NA	8	R	T	-	-	-	-	-	
14079	Birch Tree Lane, Whitmore	61/65 [A]	-	-	Day: Earthworks	NA	1	R	T	-	-	D19	CT	-	CSV04-Co1
14080	1 Station Cottages, Baldwin's Gate	50/54 [C]	<45	32/36 [C]	Day: Earthworks Night: Tunnelling / tunnelling support	NA	9	R	T	-	-	-	-	-	
14081	Lea Close, Baldwin's Gate	47/51 [A]	-	-	Day: Earthworks	NA	41	R	T	-	-	-	-	-	
14082	Birch Tree Lane, Whitmore	65/70 [A]	-	-	Day: Earthworks	A	1	R	T	-	-	D27	-	-	CSV04-Co1
14083	Tollgate House, Baldwin's Gate	48/52 [B]	<45	34/37 [C]	Day: Earthworks Night: Tunnelling / tunnelling support	NA	26	R	T	-	-	-	-	-	

Assessment location		Impact criteria			Significance criteria										Significant effect
Ref	Area represented	Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] at the facade [assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 0700-1900	Evening 1900-2300	Night 2300-0700											
14084	Hillview Crescent, Baldwin's Gate	50/53 [C]	-	-	Day: Earthworks	NA	8	R	T	-	-	-	-	-	
14085	Hillview Crescent, Baldwin's Gate	50/53 [A]	-	-	Day: Earthworks	NA	28	R	T	-	-	-	-	-	
14086	Snape Hall Road, Whitmore	50/54 [A]	-	-	Day: Earthworks	NA	3	R	T	-	-	-	-	-	
14087	Snape Hall Cottage, Snape Hall Road, Whitmore	70/74 [A]	-	-	Day: Earthworks	A	1	R	T	-	-	D56	CT, V	-	CSV04-Co1
14088	Woodberry/Foxdene, Snape Hall Road, Whitmore	68/73 [A]	-	-	Day: Earthworks	A	2	R	T	-	-	D40	CT	-	CSV04-Co1
14090	Snape Hall Road, Whitmore	60/64 [A]	-	-	Day: Demolitions	NA	3	R	T	-	-	-	-	-	
14091	Sandyfields, Baldwin's Gate	49/52 [A]	-	-	Day: Earthworks	NA	27	R	T	-	-	-	-	-	
14094	Snape Hall Farm, Snape Hall Road, Whitmore	70/77 [A]	-	-	Day: Underground utility diversion	S	1	R	T	-	-	D30	CT, V	NI	CSV04-Co1

Assessment location		Impact criteria			Significance criteria										
Ref	Area represented	Typical/highest monthly outdoor $L_{pAeq}$ [dB] at the facade [assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	Significant effect
		Day 0700-1900	Evening 1900-2300	Night 2300-0700											
14098	Walls Wood, Baldwin's Gate	57/61 [A]	-	-	Day: Earthworks	NA	1	R	T	-	-	-	-	-	
14099	Walls Wood, Baldwin's Gate	58/61 [A]	-	-	Day: Earthworks	NA	19	R	T	-	-	-	-	-	
14100	Netherset Lane, Madeley	53/58 [A]	<45	30/35 [B]	Day: Borrow pit excavation Night: Viaduct piling	NA	1	R	T	-	-	-	-	-	
14101	Park Wood Drive, Baldwin's Gate	59/63 [A]	-	-	Day: Earthworks	NA	7	R	T	-	-	-	-	-	
14102	Park Wood Drive, Baldwin's Gate	57/61 [A]	-	-	Day: Earthworks	NA	15	R	T	-	-	-	-	-	
14103	Eastwood Rise, Baldwin's Gate	58/61 [A]	-	-	Day: Earthworks	NA	6	R	T	-	-	-	-	-	
14104	Park Wood Drive, Baldwin's Gate	57/61 [A]	<45	30/35 [B]	Day: Earthworks Night: Viaduct piling	NA	15	R	T	-	-	-	-	-	
14105	Manor Glade, Baldwin's Gate	52/57 [A]	-	-	Day: Earthworks	NA	12	R	T	-	-	-	-	-	

Assessment location		Impact criteria			Significance criteria										
Ref	Area represented	Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] at the facade [assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	Significant effect
		Day 0700-1900	Evening 1900-2300	Night 2300-0700											
14106	Eastwood Rise, Baldwin's Gate	58/62 [A]	<45	31/36 [C]	Day: Earthworks Night: Viaduct piling	NA	7	R	T	-	-	-	-	-	
14108	Netherset Lane, Madeley	59/63 [A]	<45	34/39 [B]	Day: Borrow pit excavation Night: Tunnelling / tunnelling support	NA	2	R	T	-	-	-	-	-	
14110	Park Wood Drive, Baldwin's Gate	57/61 [A]	-	-	Day: Earthworks	NA	8	R	T	-	-	-	-	-	
14111	Eastwood Rise, Baldwin's Gate	58/62 [A]	<45	32/37 [B]	Day: Earthworks Night: Viaduct piling	NA	11	R	T	-	-	-	-	-	
14112	Manor Road, Madeley	58/62 [A]	<45	34/38 [B]	Day: On-site traffic Night: Viaduct piling	NA	4	R	T	-	-	-	-	-	
14113	Manor Road, Baldwin's Gate	52/57 [A]	-	-	Day: On-site traffic	NA	13	R	T	-	-	-	-	-	
14114	Manor Road, Baldwin's Gate	51/56 [A]	-	-	Day: On-site traffic	NA	8	R	T	-	-	-	-	-	
14115	Manor Road, Madeley	58/63 [A]	<45	33/38 [B]	Day: On-site traffic Night: Viaduct piling	NA	11	R	T	-	-	-	-	-	

Assessment location		Impact criteria			Significance criteria										
Ref	Area represented	Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] at the facade [assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	Significant effect
		Day 0700-1900	Evening 1900-2300	Night 2300-0700											
14116	Manor Road, Madeley	57/62 [A]	<45	39/40 [B]	Day: On-site traffic Night: Viaduct piling	NA	2	R	T	-	-	-	-	-	
14118	Knightley, Madeley	51/56 [A]	<45	34/38 [B]	Day: Borrow pit excavation Night: Tunnelling / tunnelling support	NA	36	R	T	-	-	-	-	-	
14119	Castle Lane, Madeley	52/57 [A]	<45	32/36 [B]	Day: Borrow pit excavation Night: Tunnelling / tunnelling support	NA	3	R	T	-	-	-	-	-	
14120	Manor Road, Madeley	61/68 [A]	<45	39/40 [B]	Day: Underground utility diversion Night: Viaduct piling	A	1	R	T	-	-	D2	CT	-	~
14121	Dwelling At Hey House, Madeley	64/67 [A]	<45	35/40 [A]	Day: Earthworks Night: Tunnelling / tunnelling support	A	1	R	T	-	-	D8	-	-	~
14122	Birches Farm Mews, Madeley	54/58 [A]	<45	38/42 [B]	Day: Earthworks Night: Tunnelling / tunnelling support	NA	14	R	T	-	-	-	-	-	
14123	Pastoral Close, Madeley	51/57 [A]	<45	33/36 [B]	Day: Earthworks Night: Tunnelling / tunnelling support	NA	14	R	T	-	-	-	-	-	

Assessment location		Impact criteria			Significance criteria										
Ref	Area represented	Typical/highest monthly outdoor $L_{pAeq}$ [dB] at the facade [assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	Significant effect
		Day 0700-1900	Evening 1900-2300	Night 2300-0700											
14125	Pastoral Close, Madeley	52/56 [A]	<45	39/43 [B]	Day: Concrete batching plant Night: Tunnelling / tunnelling support	NA	12	R	T	-	-	-	-	-	
14127	Castle Lane, Madeley	51/55 [A]	-	-	Day: Borrow pit excavation	NA	22	R	T	-	-	-	-	-	
14128	Vicarage Lane, Madeley	54/58 [A]	<45	40/44 [B]	Day: Earthworks Night: Tunnelling / tunnelling support	NA	4	R	T	-	-	-	-	-	
14129	The Holborn, Madeley	52/56 [A]	<45	39/43 [C]	Day: Earthworks Night: Tunnelling / tunnelling support	NA	13	R	T	-	-	-	-	-	
14131	Manor Road, Madeley	66/70 [A]	<45	34/38 [B]	Day: Earthworks Night: Viaduct piling	A	1	R	T	-	-	D13	CT	-	~
14132	Vicarage Lane, Madeley	54/57 [A]	<45	40/44 [B]	Day: Earthworks Night: Tunnelling / tunnelling support	NA	13	R	T	-	-	-	-	-	
14137	Poolside, Madeley	49/54 [B]	<45	34/37 [A]	Day: On-site traffic Night: Tunnelling / Tunnelling support	NA	23	R	T	-	-	-	-	-	

Assessment location		Impact criteria			Significance criteria										
Ref	Area represented	Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] at the facade [assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	Significant effect
		Day 0700-1900	Evening 1900-2300	Night 2300-0700											
14140	Willow Brook, Madeley	52/55 [A]	<45	38/42 [B]	Day: Earthworks Night: Tunnelling / tunnelling support	NA	2	R	T	-	-	-	-	-	
14141	Woore Road, Madeley	55/58 [A]	41/45 [A]	41/45 [C]	Day: Earthworks Eve: Tunnelling / tunnelling support Night: Tunnelling / tunnelling support	NA	1	R	T	-	-	-	-	-	
14142	Station Road, Madeley	54/57 [B]	-	-	Day: Earthworks	NA	10	R	T	-	-	-	-	-	
14144	Smithy Corner, Madeley	52/56 [B]	-	-	Day: Earthworks	NA	3	R	T	-	-	-	-	-	
14146	Haywood Court, Madeley	53/58 [B]	<45	36/39 [C]	Day: Earthworks Night: Tunnelling / tunnelling support	NA	5	R	T	-	-	-	-	-	
14148	Haywood Court, Madeley	56/60 [C]	<45	34/38 [C]	Day: Earthworks Night: Tunnelling / tunnelling support	NA	9	R	T	-	-	-	-	-	
14149	Cherry Hill, Madeley	51/56 [A]	<45	37/40 [A]	Day: On-site traffic Night: Tunnelling / tunnelling support	NA	54	R	T	-	-	-	-	-	

Assessment location		Impact criteria			Significance criteria										
Ref	Area represented	Typical/highest monthly outdoor $L_{pAeq}$ [dB] at the facade [assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	Significant effect
		Day 0700-1900	Evening 1900-2300	Night 2300-0700											
14150	Moss Lane, Madeley	56/59 [C]	42/46 [C]	42/46 [C]	Day: Earthworks Eve: Tunnelling / tunnelling support Night: Tunnelling / tunnelling support	NA	10	R	T	-	-	-	-	-	
14151	Morningside, Madeley	52/55 [A]	<45	37/41 [B]	Day: Earthworks Night: Tunnelling / tunnelling support	NA	26	R	T	-	-	-	-	-	
14153	Moss Lane, Madeley	44/50 [A]	-	-	Day: On-site traffic	NA	16	R	T	-	-	-	-	-	
14155	John Offley Road, Madeley	56/59 [A]	43/46 [B]	43/46 [C]	Day: Earthworks Eve: Tunnelling / tunnelling support Night: Tunnelling / tunnelling support	NA	32	R	T	-	-	-	-	-	
14156	River Lea Mews, Madeley	45/51 [A]	-	-	Day: On-site traffic	NA	10	R	T	-	-	-	-	-	
14157	Morningside, Madeley	50/55 [A]	<45	32/35 [A]	Day: On-site traffic Night: Tunnelling / tunnelling support	NA	64	R	T	-	-	-	-	-	
14158	Mallard Close, Madeley	57/61 [A]	<45	41/44 [C]	Day: Earthworks Night: Tunnelling / tunnelling support	NA	5	R	T	-	-	-	-	-	

Assessment location		Impact criteria			Significance criteria										
Ref	Area represented	Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] at the facade [assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	Significant effect
		Day 0700-1900	Evening 1900-2300	Night 2300-0700											
14160	John Offley Road, Madeley	53/57 [A]	<45	36/40 [B]	Day: On-site traffic Night: Tunnelling / Tunnelling support	NA	70	R	T	-	-	-	-	-	
14161	Bar Hill, Madeley	56/59 [A]	43/47 [B]	43/47 [C]	Day: Earthworks Eve: Tunnelling / tunnelling support Night: Tunnelling / tunnelling support	NA	2	R	T	-	-	-	-	-	
14162	Moss Lane, Madeley	57/60 [C]	44/48 [C]	44/48 [C]	Day: Concrete batching plant Eve: Tunnelling / tunnelling support Night: Tunnelling / tunnelling support	NA	38	R	T	-	-	-	-	-	
14163	Bar Hill, Madeley	59/63 [B]	-	-	Day: Earthworks	NA	11	R	T	-	-	-	-	-	
14164	Morningside, Madeley	53/56 [A]	<45	39/41 [A]	Day: Earthworks Night: Tunnelling / tunnelling support	NA	21	R	T	-	-	-	-	-	
14165	Bar Hill, Madeley	60/64 [A]	<45	36/39 [B]	Day: Earthworks Night: Tunnelling / tunnelling support	NA	1	R	T	-	-	-	-	-	

Assessment location		Impact criteria			Significance criteria										Significant effect
Ref	Area represented	Typical/highest monthly outdoor $L_{pAeq}$ [dB] at the facade [assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 0700-1900	Evening 1900-2300	Night 2300-0700											
14166	Charles Cotton Drive, Madeley	49/54 [A]	<45	33/37 [A]	Day: On-site traffic Night: Tunnelling / tunnelling support	NA	40	R	T	-	-	-	-	-	
14168	Moss Lane, Madeley	57/59 [B]	44/48 [C]	44/48 [C]	Day: Concrete batching plants setup Eve: Tunnelling / tunnelling support Night: Tunnelling / tunnelling support	NA	42	R	T	-	-	-	-	-	
14169	Moss Lane, Madeley	54/58 [A]	<45	39/43 [B]	Day: Concrete batching plants setup Night: Tunnelling / tunnelling support	NA	13	R	T	-	-	-	-	-	
14170	Moss Lane, Madeley	56/59 [C]	44/48 [C]	44/48 [C]	Day: Concrete batching plant Eve: Tunnelling / tunnelling support Night: Tunnelling / tunnelling support	NA	13	R	T	-	-	-	-	-	
14171	Bar Hill, Madeley	66/71 [A]	<45	36/39 [C]	Day: Earthworks Night: Tunnelling / tunnelling support	A	16	R	T	-	-	D9	CT	-	CSV04-C02
14172	Heather Glade, Madeley	46/51 [A]	-	-	Day: On-site traffic	NA	35	R	T	-	-	-	-	-	

Assessment location		Impact criteria			Significance criteria										Significant effect
Ref	Area represented	Typical/highest monthly outdoor $L_{pAeq}$ [dB] at the facade [assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 0700-1900	Evening 1900-2300	Night 2300-0700											
14173	Pear Tree Drive, Madeley	52/55 [A]	<45	36/40 [A]	Day: On-site traffic Night: Tunnelling / tunnelling support	NA	26	R	T	-	-	-	-	-	
14174	The Bridle Path, Madeley	54/58 [A]	<45	42/44 [B]	Day: Underground utility diversion Night: Tunnelling / tunnelling support	NA	36	R	T	-	-	-	-	-	
14176	The Bridle Path, Madeley	53/56 [A]	<45	41/43 [A]	Day: Earthworks Night: Tunnelling / tunnelling support	NA	28	R	T	-	-	-	-	-	
14177	The Bridle Path, Madeley	55/58 [A]	<45	40/44 [B]	Day: Underground utility diversion Night: Tunnelling / tunnelling support	NA	18	R	T	-	-	-	-	-	
14178	Bower End Lane, Madeley	56/60 [C]	<45	40/43 [C]	Day: Underground utility diversion Night: Tunnelling / tunnelling support	NA	2	R	T	-	-	-	-	-	
14179	The Bridle Path, Madeley	53/56 [A]	<45	39/43 [A]	Day: Earthworks Night: Tunnelling / tunnelling support	NA	13	R	T	-	-	-	-	-	

Assessment location		Impact criteria			Significance criteria									Significant effect	
Ref	Area represented	Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] at the facade [assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact		Mitigation effect
		Day 0700-1900	Evening 1900-2300	Night 2300-0700											
14180	Bar Hill, Madeley	66/71 [A]	49/51 [A]	49/51 [B]	Day: Earthworks Eve: Tunnelling / tunnelling support Night: Tunnelling / tunnelling support	A	5	R	T	-	-	D26 N5	CT	-	CSV04-Co2
14182	Furnace Lane, Madeley	52/55 [A]	<45	36/40 [C]	Day: Earthworks Night: Tunnelling / tunnelling support	NA	2	R	T	-	-	-	-	-	
14183	86 Bar Hill, Madeley	66/70 [A]	45/48 [A]	45/48 [A]	Day: Earthworks Eve: Tunnelling / tunnelling support Night: Tunnelling / tunnelling support	A	2	R	T	-	-	D30 N6	-	-	CSV04-Co2
14184	Moss House Farm, Madeley	60/67 [A]	<45	39/42 [C]	Day: Underground utility diversion Night: Tunnelling / tunnelling support	A	5	R	T	-	-	D2	CT	-	~
14185	Bower End Lane, Madeley	63/66 [A]	52/56 [B]	52/56 [A]	Day: Excavation and prop installation Eve: Tunnelling / tunnelling support Night: Tunnelling / tunnelling support	S	4	R	T	-	-	D4 N10	-	NI	CSV04-Co2
14187	Bar Hill, Madeley	59/62 [A]	-	-	Day: Earthworks	NA	2	R	T	-	-	-	-	-	

Assessment location		Impact criteria			Significance criteria										
Ref	Area represented	Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] at the facade [assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	Significant effect
		Day 0700-1900	Evening 1900-2300	Night 2300-0700											
14189	Bower End Lane, Madeley	70/75 [A]	<45	36/40 [C]	Day: On-site traffic Night: Tunnelling	S	1	R	T	-	-	D31	-	NI	~
14190	Bar Hill, Madeley	49/54 [A]	-	-	Day: On-site traffic	NA	5	R	T	-	-	-	-	-	
14192	Bower End Lane, Madeley	56/60 [A]	<45	42/43 [A]	Day: Earthworks Night: Tunnelling	NA	1	R	T	-	-	-	-	-	
14195	Mill Lane, Wrinehill	48/52 [A]	<45	36/37 [B]	Day: Earthworks Night: Tunnelling	NA	6	R	T	-	-	-	-	-	
14199	School Lane, Onneley	45/49 [A]	-	-	Day: On-site traffic	NA	4	R	T	-	-	-	-	-	
14200	Wrinehill Hall Farm, Mill Lane, Wrinehill	60/64 [A]	-	-	Day: Earthworks	NA	1	R	T	-	-	-	-	-	
14205	Wrinehill Mill, Wrinehill	54/60 [A]	-	-	Day: Underground utility diversion	NA	1	R	T	-	-	-	-	-	
14208	Snape Hall Farmhouse, Snape Hall Road, Whitmore Heath	52/57 [A]	-	-	Day: On-site traffic	NA	1	R	T	-	-	-	-	-	
14210	Manor Farmhouse, Madeley / CD Ref: 10/00108/FUL	55/59 [A]	<45	34/35 [A]	Day: Earthworks Night: Viaduct piling	NA	3	CD-R	T	-	-	-	-	-	

Assessment location		Impact criteria			Significance criteria										
Ref	Area represented	Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] at the facade [assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	Significant effect
		Day 0700-1900	Evening 1900-2300	Night 2300-0700											
14213	Hillview Crescent, Baldwin's Gate (CD Ref.: 13/00426/OUT)	50/54 [A]	-	-	Day: Earthworks	NA	1	CD-R	T	-	-	-	-	-	
14214	Appleton Drive, Whitmore (CD Ref.: 13/00145/OUT)	48/52 [B]	<45	34/37 [A]	Day: On-site traffic Night: Tunnelling / tunnelling support	NA	113	CD-R	T	-	-	-	-	-	
14215	Birch Tree Lane, Whitmore (CD Ref.: 15/00281/FUL)	54/58 [A]	-	-	Day: Earthworks	NA	1	CD-R	T	-	-	-	-	-	
14216	Haywood Court, Madeley (CD Ref.: 15/00277/FUL)	56/59 [C]	<45	39/42 [C]	Day: Earthworks Night: Tunnelling / tunnelling support	NA	4	CD-R	T	-	-	-	-	-	
14217	Moss Lane, Madeley (CD Ref.: 14/00691/FUL)	56/59 [C]	42/46 [C]	42/46 [C]	Day: Earthworks Eve: Tunnelling / tunnelling support Night: Tunnelling / tunnelling support	NA	1	CD-R	T	-	-	-	-	-	
14218	Moss Lane, Madeley (CD Ref.: 12/00028/FUL)	55/59 [C]	<45	38/41 [C]	Day: Earthworks Night: Tunnelling / tunnelling support	NA	2	CD-R	T	-	-	-	-	-	

Assessment location		Impact criteria			Significance criteria										
Ref	Area represented	Typical/highest monthly outdoor $L_{pAeq}$ [dB] at the facade [assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	Significant effect
		Day 0700-1900	Evening 1900-2300	Night 2300-0700											
14219	The Bridle Path, Madeley (CD Ref.: 13/00990/OUT)	53/57 [A]	<45	37/40 [C]	Day: Underground utility diversion Night: Tunnelling / tunnelling support	NA	42	CD-R	T	-	-	-	-	-	
14220	Whitmore Arms, Madeley	49/54 [A]	-	-	Day: Haul road setup	NA	2	R	T	-	-	-	-	-	
14233	Woodcroft, Red Lane, Madeley	63/68 [A]	<45	36/39 [A]	Day: Earthworks Night: Tunnelling	NA	1	R	T	-	-	-	-	-	
14234	Monument Lodge, Manor Road, Madeley	58/62 [A]	<45	36/40 [A]	Day: Earthworks Night: Tunnelling	NA	1	R	T	-	-	-	-	-	
14235	Station Road, Madeley	57/60 [A]	<45	36/39 [A]	Day: Earthworks Night: Tunnelling	NA	2	R	T	-	-	-	-	-	
14237	Rowley House, Moss Lane, Madeley (CD Ref: 14/00009/FUL)	53/57 [A]	<45	39/42 [A]	Day: Earthworks Night: Tunnelling	NA	1	CD-R	T	-	-	-	-	-	
14238	Moss Farm, Bower End Lane, Madeley (CD Ref: 14/00132/FUL)	54/59 [A]	<45	36/40 [A]	Day: Earthworks Night: Tunnelling	NA	5	CD-R	T	-	-	-	-	-	
14239	The Moss, Moss Lane, Madeley (CD Ref: 14/00299/OUT)	50/55 [A]	<45	32/35 [A]	Day: Earthworks Night: Tunnelling	NA	1	CD-R	T	-	-	-	-	-	

Assessment location		Impact criteria			Significance criteria										
Ref	Area represented	Typical/highest monthly outdoor $L_{pAeq}$ [dB] at the facade [assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	Significant effect
		Day 0700-1900	Evening 1900-2300	Night 2300-0700											
14240	Manor Road, Madeley	56/60 [A]	<45	34/35 [A]	Day: Earthworks Night: Tunnelling	NA	1	R	T	-	-	-	-	-	
14241	The Brackens, Heath Road, Whitmore Heath	58/62 [A]	51/54 [A]	51/54 [A]	Day: Excavation and prop installation Eve: Tunnelling / tunnelling support Night: Tunnelling / tunnelling support	A	1	R	T	-	-	N10	-	-	~

Table 7: Assessment of construction noise at non-residential receptors

Assessment location		Impact criteria				Significance criteria										
Ref	Area represented	Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] at the facade [assessment category A/B/C]		Change		Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (months)	Combined impact	Mitigation effect	Significant effect
		Day 0700-1900	Night 2300-0700	Day 0700-1900	Night 2300-0700											
8427(N)	Hey House & Edland Kennels/Cattery, Madeley	64/67	36/40	18	1	Day: Earthworks Night: Tunnelling / tunnelling support	B	1	G5	T	-	-	D8	-	-	CSV04-No1
14018(N)	St Mary's & All Saints' Church, Whitmore	53/58	-	3	0	Day: Haul road setup	B	1	G3	T	-	-	-	-	-	*
14021(N)	North Staffordshire Hunt's Kennels, Hill Chorlton	51/56	36/38	15	5	Day: Haul road setup Night: Tunnelling / tunnelling support	B	1	G5	T	-	-	-	-	-	
14048(N)	Whitmore Village Hall, Whitmore	52/58	-	9	1	Day: Planting	B	1	G3	T	-	-	D7	-	-	*
14076(N)	Baldwin's Gate Church Of England Primary School	46/51	-	1	1	Day: On-site traffic	B	1	G4	T	-	-	-	-	-	
14130(N)	Madeley Cemetery, Madeley	65/70	37/41	10	0	Day: Earthworks Night: Tunnelling / tunnelling support	B	1	G3	T	-	-	D8	CT	-	CSV04-No2
14138(N)	All Saints' Church, Madeley	53/57	36/39	2	0	Day: Earthworks Night: TBM setup	B	1	G3	T	-	-	-	-	-	

Assessment location		Impact criteria				Significance criteria										
Ref	Area represented	Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] at the facade [assessment category A/B/C]		Change		Construction activity resulting in highest forecast noise levels	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (months)	Combined impact	Mitigation effect	Significant effect
		Day 0700-1900	Night 2300-0700	Day 0700-1900	Night 2300-0700											
14145(N)	Madeley Allotment, Madeley	59/62	41/44	2	0	Day: Earthworks Night: TBM setup	B	1	G5	T	-	-	-	-	-	
14147(N)	Unreal Paintball Site, Manor Farm, Manor Road, Madeley	55/59	-	10	-	Day: On-site traffic	B	1	G5	T	-	-	-	-	-	
14152(N)	Sir John Offley Church Of England Primary School, Madeley	56/59	-	3	-	Day: Earthworks	B	1	G4	T	-	-	-	-	-	
14167(N)	Moss Lane GP Surgery, Madeley	54/58	-	6	-	Day: Earthworks	B	1	G4	T	-	-	-	-	-	
14207(N)	Whitmore Post Office, Baldwin's Gate	48/52	-	0	-	Day: Earthworks	B	1	G5	T	-	-	-	-	-	

*Airborne sound: indirect effects*

- 4.2.10 Construction road traffic associated with the construction phases of the Proposed Scheme would generate airborne noise. Based upon traffic information for the Proposed Scheme, the change in traffic noise level at a reference distance of 10m from the edge of the nearside carriageway resulting from the presence of construction traffic for a given road has been predicted. Data has been produced for a typical month during the construction period and for a worst-case month during the construction period. The results for potentially significant road links are presented in Table 9.
- 4.2.11 Explanation of the information within Table 9 is provided in Volume 5: Appendix SV-001-000, with the following additional notes in Table 8.

Table 8: Explanatory notes for assessment results – indirect construction effects

Colour	Explanation
	Where the significant effect column is highlighted, then a significant effect is identified on nearby communities or individual receptors
	Yellow denotes a minor impact – a change is of 3-5 dB or 1-3dB where a high existing sound level is identified
	Orange denotes a moderate impact – a change is of 5-10 dB or 3-5dB where a high existing sound level is identified
	Red denotes a major impact – a change is of >10 dB or >5dB where a high existing sound level is identified

Table 9: Assessment of construction traffic noise levels

Road name	Portion of road affected	Number of dwellings affected (approx.)	Daytime traffic sound levels $L_{A_{10},18hr}$ dB			Change compared to current traffic sound level (dB)		Combined impact	Significant effect
			Without HS2 (2017)	Typical month during construction	Peak month during construction	Typical month during construction	Peak month during construction		
Bent Lane	From the junction with the A51 at Stableford Bridge to the junction with the A53 in Whitmore	10	53	57	60	4	7		CSV04-C03
Snape Hall Road	From the junction with the A53 along the west of Whitmore Heath to the proposed Whitmore tunnel north portal	25	39	50	56	11	17	0	CSV04-C01 CSV04-C04
Manor Road	From the junction with the A53 at Red Hill to the junction with the A525 in Madeley	50	58	60	62	2	4		CSV04-C05
Bar Hill Road (A525)	From the proposed Madeley tunnel southern portal to the junction with Manor Road next to the WCML	40	62	63	66	1	4	0	CSV04-C02
Bower End Lane	From the proposed Madeley tunnel northern portal to the junction with Moss Lane in Madeley	10	47	49	51	2	4	0	-

## Airborne sound levels used in other assessments

4.2.12 The construction sound results contained in this document have been used by other disciplines, namely agriculture, cultural heritage, landscape and visual, communities and socio economics, in their assessments. This includes the information in Table 6 and Table 7. Locations of interest to these other disciplines which may not appear in Table 6 or Table 7 are presented in Table 10.

Table 10: Construction airborne sound levels for use in cross discipline assessments

Assessment location		Sound level information				Discipline					
Ref	Area represented	Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] at the facade [assessment category A/B/C]		Change		Construction activity resulting in highest forecast noise levels	Agriculture	Communities	Heritage	Landscape & visual	Socio-economic
		Day 0700-1900	Night 2300-0700	Day 0700-1900	Night 2300-0700						
8378(N)	Snape Hall Farm, Snape Hall Road, Whitmore Heath	82/87	-	42	-	Day: Demolitions	Y	-	-	-	-
8388(N)	Bar Hill House Farm, Bar Hill	59/63	-	12	-	Day: Earthworks	Y	-	-	-	-
8427(N)	Hey House & Edland Kennels/Cattery, Madeley	64/67	-	18	-	Day: Earthworks	-	-	Y	-	Y
8486(N)	Offley Almshouses, Madeley	57/60	-	0	-	Day: Earthworks	-	-	Y	-	-
14018(N)	St Mary's & All Saints' Church, Whitmore	53/58	-	3	-	Day: Haul road setup	-	-	-	-	-
14020(N)	The Mainwaring Arms, Whitmore	54/59	-	0	-	Day: Haul road setup	-	-	-	-	Y
14021(N)	North Staffordshire Hunt's Kennels, Hill Chorlton	51/56	-	15	-	Day: Haul road setup	-	-	-	-	-
14025(N)	Whitmore Cricket Ground, Whitmore	58/64	-	15	-	Day: Haul road setup	-	-	-	-	-
14048(N)	Whitmore Village Hall, Whitmore	52/58	-	9	-	Day: Planting	-	-	-	-	-

Assessment location		Sound level information				Discipline					
Ref	Area represented	Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] at the facade [assessment category A/B/C]		Change		Construction activity resulting in highest forecast noise levels	Agriculture	Communities	Heritage	Landscape & visual	Socio-economic
		Day 0700-1900	Night 2300-0700	Day 0700-1900	Night 2300-0700						
14076(N)	Baldwin's Gate Church Of England Primary School	46/51	-	1	-	Day: On-site traffic	-	-	-	-	-
14130(N)	Madeley Cemetery, Madeley	65/70	-	10	-	Day: Earthworks	-	-	-	-	-
14138(N)	All Saints' Church, Madeley	53/57	-	2	-	Day: Earthworks	-	-	-	-	-
14145(N)	Madeley Allotment, Madeley	59/62	-	2	-	Day: Earthworks	-	-	-	-	-
14147(N)	Unreal Paintball Site, Manor Farm, Manor Road, Madeley	55/59	-	10	-	Day: On-site traffic	-	Y	-	-	-
14152(N)	Sir John Offley Church Of England Primary School, Madeley	56/59	-	3	-	Day: Earthworks	-	-	-	-	-
14167(N)	Moss Lane GP Surgery, Madeley	54/58	-	6	-	Day: Earthworks	-	-	-	-	-
14203(N)	Wrinehill Gardens, Wrinehill Hall, Wrinehill	62/68	-	30	-	Day: Overbridge pile breakdown	Y	-	Y	-	-
14204(N)	Wrinehill Mill Farm, Wrinehill	58/62	-	16	-	Day: Earthworks	Y	-	-	-	-
14206(N)	Sheet Anchor Pub, Baldwin's Gate	50/54	-	1	-	Day: On-site traffic	-	-	-	-	Y
14207(N)	Whitmore Post Office, Baldwin's Gate	48/52	-	0	-	Day: Earthworks	-	Y	-	-	-
14209(N)	Old Madeley Manor (Off Manor Road), Madeley	53/59	33/35	12	0	Day: Underground utility diversion Night: Viaduct piling	-	-	Y	-	-

Assessment location		Sound level information				Discipline					
Ref	Area represented	Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] at the facade [assessment category A/B/C]		Change		Construction activity resulting in highest forecast noise levels	Agriculture	Communities	Heritage	Landscape & visual	Socio-economic
		Day 0700-1900	Night 2300-0700	Day 0700-1900	Night 2300-0700						
14211(N)	Offley Well Head, Madeley	59/63	-	4	-	Day: Earthworks	-	-	Y	-	-
14212(N)	Madeley White Star Football Club, Madeley	61/65	-	11	-	Day: Earthworks	-	Y	-	-	-
14222(N)	Snape Hall Road, Whitmore	54/58	-	3	-	Day: Earthworks	-	-	-	Y	-
14223(N)	Walls Wood, Baldwins Gate	58/61	-	5	-	Day: Earthworks	-	-	-	Y	-
14224(N)	The Old Rectory, Whitmore	71/76	-	29	-	Day: Underground utility diversion	-	-	-	Y	-
14225(N)	Netherset Lane, Madeley	63/65	-	17	-	Day: Borrow pit excavation	-	-	-	Y	-
14226(N)	Baldwin's Gate Sandstone Hills And Heaths #1	53/57	-	9	-	Day: Haul road setup	-	-	-	Y	-
14227(N)	Manor Road, Madeley	50/55	-	8	-	Day: On-site traffic	-	-	-	Y	-
14228(N)	Netherset Lane, Madeley	53/58	-	10	-	Day: Borrow pit excavation	-	-	-	Y	-
14229(N)	Bar Hill, Madeley	50/54	-	16	-	Day: Earthworks	-	-	-	Y	-
14230(N)	Bar Hill, Madeley	62/66	-	28	-	Day: Earthworks	-	-	-	Y	-
14231(N)	Mill Lane, Wrinehill	62/67	-	26	-	Day: Haul road setup	-	-	-	Y	-

Assessment location		Sound level information				Discipline					
Ref	Area represented	Typical/highest monthly outdoor L <sub>pAeq</sub> [dB] at the facade [assessment category A/B/C]		Change		Construction activity resulting in highest forecast noise levels	Agriculture	Communities	Heritage	Landscape & visual	Socio-economic
		Day 0700-1900	Night 2300-0700	Day 0700-1900	Night 2300-0700						
14232(N)	School Lane, Onneley	54/58	-	18	-	Day: Earthworks	-	-	-	Y	-

## 5 Operational

### 5.1 Evaluation of impacts and effects

- 5.1.1 This appendix provides a quantitative assessment of operational noise and vibration impacts and effects and a qualitative assessment of likely significant effects, based on the impacts and effects identified and other local context information consistent with the scope and methodology defined for the Proposed Scheme.
- 5.1.2 Indirect effects arising from permanent changes in traffic patterns on the existing road and rail networks as a consequence of the Proposed Scheme are also reported in this appendix, where they would occur within the study area as defined in Volume 5: Appendix SV-001-000. Route-wide impacts, effects and significant effects associated with noise or vibration from the operation of the Proposed Scheme are reported in Volume 3<sup>11</sup>.
- 5.1.3 Off-route effects of noise or vibration arising from the operation of the Proposed Scheme, including those likely to arise from permanent changes in traffic patterns on roads or railways outside of the study area for direct effects are reported in Volume 4<sup>12</sup>.
- 5.1.4 In undertaking the assessment of sound, noise and vibration, consistent with EIA Directive<sup>6</sup> and National Planning Practice Guidance<sup>7</sup> a differentiation between impacts effects, adverse effects and significant effects is made. Further information is provided in Volume 5: Appendix SV-001-000.
- 5.1.5 The assessment of impacts has been undertaken at assessment locations that are representative of a number of dwellings or other sensitive receptors. The operational assessment locations employed in this assessment are presented on Map Series SV-02 (Volume 5: Sound, Noise and Vibration Map Book).
- 5.1.6 Baseline sound level data has been collected at locations representative of the airborne sound-sensitive receptors and presented in Table 1, and corrected where applicable using the values in Table 3.

### 5.2 Effects arising during operation

#### Introduction

- 5.2.1 The assessment is reported first for ground-borne sound and vibration and then for airborne sound. Under each of these headings, the results of the quantitative identification of impacts, effects and significant effects are presented. The significant effects and the evidence used to support these conclusions are presented in Volume 2, Whitmore Heath to Madeley (CA4 Report), Section 13.

#### Avoidance and mitigation measures

- 5.2.2 These are set out in Volume 2, Whitmore Heath to Madeley (CA Report 4), Section 13.

<sup>11</sup> See Environmental Statement Volume 3, Route-wide effects

<sup>12</sup> See Environmental Statement Volume 4, Off-route effects

## Quantitative identification of impacts and effects

### *Ground-borne sound and vibration*

- 5.2.3 Assessment locations defined for the quantitative assessment of impacts are shown on Map Series SV-02 in the Volume 5: Sound, Noise and Vibration Map Book. SV-02 also displays ground-borne noise and vibration impacts and any resultant significant effects.
- 5.2.4 For each assessment location, the assessment results for residential and non-residential receptors are presented in Table 12. Explanation of the information in Table 12 is provided in Appendix SV-001-000, with the following additional notes in Table 11.

Table 11: Explanatory notes for assessment results

Symbol	Explanation
B	For non-residential receptors further detail about the type of effect is set out in the text of Volume 5: Appendix SV-001-000
NA	Type of effect - Generally no adverse effect
A	Ground-borne sound or vibration levels from HS2 exceed Lowest Observed Adverse Effect Level (LOAEL): the significance criteria set out in Appendix SV-001-000, Annex A, Section 1.3 are considered when establishing significant effects
S	Ground-borne sound or vibration levels from HS2 exceed Significant Observed Adverse Effect Level (SOAEL)
VDV	Vibration Dose Value
~	When considered under the significance criteria set out in Volume 5: Appendix SV-001-000, Annex A, Section 1.3, these adverse effects are not considered to be significant on a community basis
	Where the significant effect column is highlighted in pink, then a significant effect is identified at the referenced residential community area, or individual receptor
	Yellow denotes a low ground-borne noise impact or a minor ground-borne vibration impact
	Orange denotes a medium ground-borne noise impact or a moderate ground-borne vibration impact
	Red denotes a high ground-borne noise impact or a major ground-borne vibration impact
	Dark red denotes a very high ground-borne noise impact

Table 12: Operational ground-borne sound and vibration levels, noise and vibration impacts and effects for residential and non-residential receptors

Assessment location		Impact criteria				Significance criteria								Significant effect
		Groundborne sound level dB L <sub>pASmax</sub>	VDV m/s <sup>1.75</sup> Daytime (07:00 - 23:00)	VDV m/s <sup>1.75</sup> Night time (23:00 – 07:00)	% increase or decrease in VDV	Number of impacts represented	Type of effect	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation effect	
Ref	Area represented													
14035	The Hill, Whitmore	29	0.14	0.06	-	1	NA	R	T	-	-	-	-	
14043	Heath Road, Whitmore	23	0.03	0.01	-	2	NA	R	T	-	-	-	-	
14046	Heath Road, Whitmore	27	0.04	0.02	-	1	NA	R	T	-	-	-	-	
14047	Broadlands, Heath Rise, Whitmore Heath	42	0.19	0.09	-	1	A	R	T	-	-	-	-	OSV <sub>04</sub> -Co <sub>2</sub>
14052	Heath Road, Whitmore Heath	30	0.05	0.03	-	2	NA	R	T	-	-	-	-	
14054	Heath Road, Whitmore	34	0.09	0.04	-	1	NA	R	T	-	-	-	-	
14055	Heath Road, Whitmore	25	0.03	0.02	-	5	NA	R	T	-	-	-	-	
14056	Wyndways, Whitmore Heath	45	0.27	0.13	-	1	S	R	T	-	-	-	-	OSV <sub>04</sub> -Co <sub>2</sub>
14058	Sandy Ridge, Whitmore Heath	44	0.25	0.12	-	1	A	R	T	-	-	-	-	OSV <sub>04</sub> -Co <sub>2</sub>
14059	Common Farm, Whitmore Heath	31	0.06	0.03	-	2	NA	R	T	-	-	-	-	
14062	Hunters Way, Whitmore Heath	33	0.08	0.04	-	1	NA	R	T	-	-	-	-	
14066	The Willows, Whitmore Heath	36	0.10	0.05	-	1	A	R	T	-	-	-	-	OSV <sub>04</sub> -Co <sub>2</sub>

Assessment location		Impact criteria				Significance criteria									Significant effect
		Groundborne sound level dB L <sub>pASmax</sub>	VDV m/s <sup>-1.75</sup> Daytime (07:00 - 23:00)	VDV m/s <sup>-1.75</sup> Night time (23:00 – 07:00)	% increase or decrease in VDV	Number of impacts represented	Type of effect	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation effect		
Ref	Area represented														
14067	The Dingle, Whitmore Heath	25	0.03	0.02	-	1	NA	R	T	-	-	-	-		
14068	Kepplestone, Whitmore Heath	31	0.06	0.03	-	1	NA	R	T	-	-	-	-		
14069	Fernridge / Mandarin House, Whitmore Heath	27	0.04	0.02	-	3	NA	R	T	-	-	-	-		
14071	The Nook / Tree Tops, Whitmore Heath	42	0.20	0.09	-	2	A	R	T	-	-	-	-	OSV <sub>04</sub> -Co <sub>2</sub>	
14074	West Ridge, Birch Tree Lane, Whitmore Heath	45	0.28	0.13	-	1	S	R	T	-	-	-	-	OSV <sub>04</sub> -Co <sub>2</sub>	
14075	Birch Tree Lane, Whitmore	30	0.05	0.02	-	1	NA	R	T	-	-	-	-		
14077	Birch Tree Lane, Whitmore	25	0.04	0.02	-	2	NA	R	T	-	-	-	-		
14079	Birch Tree Lane, Whitmore	31	0.06	0.03	-	1	NA	R	T	-	-	-	-		
14082	Birch Tree Lane, Whitmore	26	0.04	0.02	-	1	NA	R	T	-	-	-	-		
14087	Snape Hall Cottage, Snape Hall Road, Whitmore	31	0.16	0.08	-	1	NA	R	T	-	-	-	-		
14088	Woodberry/Foxdene, Snape Hall Road, Whitmore	22	0.07	0.03	-	2	NA	R	T	-	-	-	-		
14241	The Brackens, Heath Road, Whitmore Heath	46	0.31	0.15	-	1	S	R	T	-	-	-	-	OSV <sub>04</sub> -Co <sub>2</sub>	

### *Ground-borne sound and vibration impact summary*

- 5.2.5 The operational ground-borne noise and vibration impacts identified in Table 12 are summarised in Table 13.

Table 13: Summary of operational ground-borne noise and vibration impacts

Property type	Number of ground-borne noise impacts			
	Low	Medium	High	Very high
Residential properties	0	4	3	0
Non-residential properties				0
	Number of ground-borne vibration impacts			
	Minor	Moderate	Major	Risk of building damage
Residential properties	6	0	0	0
Non-residential properties				0

### *Airborne sound: direct impacts and effects*

- 5.2.6 The direct effects from the operation of the Proposed Scheme as well as any new, amended or altered roads or railway lines, which are identified as part of the scheme, are presented in Table 15 for residential receptors and Table 16 for non-residential receptors.
- 5.2.7 The assessment information, impact criteria and significance criteria for the assessment of the incorporated mitigation case at residential and non-residential receptors are presented in Table 15 and Table 16 respectively. The results should be considered in conjunction with the information contained in Map Series SV-02 (Volume 5: Sound, Noise and Vibration Map Book).
- 5.2.8 Explanation of the information in Table 15 and Table 16 is provided in Volume 5: Appendix SV-001-000, with the following additional notes in Table 14.

Table 14: Explanatory notes for assessment results

Symbol	Explanation
	Where the significant effect column is marked, then a significant effect is identified at the referenced group of dwellings, or individual residential or non-residential receptor
	Yellow denotes a minor impact at a residential building – a change is of 3-5 dB
	Orange denotes a moderate impact at a residential building – a change is of 5-10 dB
	Red denotes a major impact at a residential building – a change is of >10 dB
*	Day - $L_{pAeq,07:00-23:00}$
**	Night - $L_{pAeq,23:00-07:00}$

## Appendix SV-002-004

Symbol	Explanation
***	Max - $L_{pAFmax}$ In the Proposed Scheme only column, two values are presented. The first is the value for the HS2 mitigated train and the second is the value for the 'TSI compliant' train. For further information refer to Volume 5: Appendix SV-001-000
****	Where the Proposed Scheme modifies an existing source, i.e. road or railway realignments, the Proposed Scheme only and (Opening year baseline + Year 15 traffic) levels in the table include the sound from the modified source
A	Sound levels from HS2 exceed Lowest Observed Adverse Effect Level (LOAEL): the significance criteria set out in Appendix SV001-000, Annex A, Section 1.3 are considered when establishing significant effects
B	For non-residential receptors further detail about the type of effect is set out in the text of Appendix SV-001-000
CD	Committed Development. The 'Area represented' column contains information about the potential number of impacts included in the development.
G	(G <sub>1</sub> )Theatres, large auditoria and concert halls, (G <sub>2</sub> ) Sound recording and broadcast studios, (G <sub>3</sub> ) Places of meeting for religious worship, courts, cinemas, lecture theatres, museums and small auditoria or halls, (G <sub>4</sub> ) Schools, colleges, hospitals, hotels and libraries, and (G <sub>5</sub> ) Offices and general commercial premises
H	High existing ambient sound level. Defined as $>65dB_{Leq, day}$ and/or $>55dB_{Leq, night}$
L	Low existing ambient sound level. Defined as $<42dB_{Leq, day}$ and/or $<32dB_{Leq, night}$
LD	Landscape receptor
NA	Sound levels from HS2 do not exceed Lowest Observed Adverse Effect Level (LOAEL), therefore generally no adverse effect
NI	The receptor is predicted to qualify for mitigation, which shall be provided to the specification defined in the Noise Insulation (Railways and other Guided Rail Systems) Regulations 1996
R	Residential receptor
RM	Residential mooring
S	Sound levels from HS2 exceed Significant Observed Adverse Effect Level (SOAEL): noise insulation therefore provided
#	A change of 3dB or greater has been identified however, the assessment methodology only defines an impact where the absolute sound level from the Proposed Scheme is greater or equal to 50 dB $L_{pAeq, 23:00-07:00}$ during the daytime or 40 dB $L_{pAeq, 07:00-23:00}$ at night. At the receptor denoted the absolute level condition is not met and therefore no impact is identified
~	When considered under the significance criteria set out in Appendix SV-001-000, Annex A, Section 1.3, these adverse effects are not considered to be significant on a community basis
\$	A change of 3dB or greater has been identified however, the impact methodology for non-residential receptors includes a screening criteria for G <sub>3</sub> building use of 50 dB $L_{pAeq, 07:00-23:00}$ , for G <sub>4</sub> building use 55 dB $L_{pAeq, 07:00-23:00}$ and 45 dB $L_{pAeq, 23:00-07:00}$ , for G <sub>5</sub> building use 55 dB $L_{pAeq, 07:00-23:00}$ . At the receptor denoted the screening criteria is not met and therefore no impact is identified. Further information is provided in Volume 5: Appendix SV-001-000.

Table 15: Operational airborne sound, noise impacts and significant effects: residential receptors

Assessment location		Impact criteria										Significance criteria							Significant effect		
Ref	Area represented	Proposed Scheme only (year 15 traffic)			Do nothing (opening year baseline)			Do something (opening year baseline + year 15 traffic) ****				Change	Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature		Combined impact	Mitigation effect
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **										
8482	Stableford Caravan Park #1	48	38	64/66	60	57	63	60	57	0	0	A	15	R	T	H	-	-	-		
8483	Stableford Caravan Park #2	47	38	63/65	53	50	63	54	50	1	0	A	22	R	T	-	-	-	-		
14002	New House Farmhouse, Acton	46	36	61/62	56	42	55	56	43	0	1	A	3	R	T	-	-	-	-		
14006	Stableford Caravan Park #3	49	39	65/66	57	47	63	58	48	1	1	A	29	R	T	-	-	-	-		
14007	Stableford Court, Stableford	50	40	67/68	63	57	63	63	57	0	0	A	11	R	T	H	-	-	-		
14008	Chorlton Brook Cottage, Hill Chorlton	58	49	74/75	60	56	59	62	57	2	1	A	2	R	T	H	-	-	-		
14009	Chorlton Mill Farm, Stableford	57	48	72/74	55	51	59	59	53	4	2	A	1	R	T	-	-	-	-	OSV04-C01	
14011	Holmcroft, Stableford	53	43	69/71	49	45	59	54	47	5	2	A	7	R	T	-	-	-	-	OSV04-C01	
14012	Cloud End, Hill Chorlton	63	53	77/78	60	56	59	65	58	5	2	A	1	R	T	H	-	-	-	OSV04-C01	
14013	Weston Lodge, Stableford	48	38	64/65	49	43	53	52	44	3	1	A	1	R	T	-	-	-	-	#	
14014	Oaklands, Whitmore	52	42	69/71	49	43	62	54	46	5	3	A	3	R	T	-	-	-	-	~	

Assessment location		Impact criteria										Significance criteria								Significant effect
Ref	Area represented	Proposed Scheme only (year 15 traffic)			Do nothing (opening year baseline)			Do something (opening year baseline + year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
14015	Whitmore Hall: Dwellings And Committed Development 13/00403/FUL	40	30	58/59	47	43	62	48	43	1	0	A	6	R	T	-	-	-	-	
14017	Smithfield Cottages, Whitmore	47	37	64/65	58	53	62	58	53	0	0	A	10	R	T	-	-	-	-	
14019	Church Farm, Whitmore	49	40	67/68	49	46	62	52	47	3	1	A	1	R	T	-	-	-	-	#
14022	The Delves, Hill Chorlton	56	47	72/74	44	40	53	57	48	13	8	A	2	R	T	-	-	-	-	OSV04-Co1
14023	Harfield, Hill Chorlton	60	50	76/77	49	45	53	60	51	11	6	A	2	R	T	-	-	-	-	OSV04-Co1
14024	Smithy Lane, Whitmore	47	37	66/67	57	53	62	57	53	0	0	A	3	R	T	-	-	-	-	
14026	Whitmore Lea, Whitmore	48	38	67/68	53	49	62	54	49	1	0	A	3	R	T	-	-	-	-	
14027	The Old Parsonage, Whitmore	42	32	58/59	41	38	62	44	39	3	1	A	1	R	T	-	-	-	-	#
14028	The Grooms House, Hill Chorlton	47	37	61/62	42	35	45	48	39	6	4	A	4	R	T	-	-	-	-	#
14030	Hawthorne Hill, Whitmore	46	36	65/66	45	41	62	49	42	4	1	A	2	R	T	-	-	-	-	#
14032	Jennings Farm, Hill Chorlton	43	33	59/60	42	35	45	45	37	3	2	A	4	R	T	-	-	-	-	#

Assessment location		Impact criteria										Significance criteria								Significant effect
Ref	Area represented	Proposed Scheme only (year 15 traffic)			Do nothing (opening year baseline)			Do something (opening year baseline + year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
14033	The Old Rectory, Whitmore	48	38	64/65	48	44	62	51	45	3	1	A	1	R	T	-	-	-	-	#
14035	The Hill, Whitmore	46	36	71/72	50	46	62	51	46	1	0	A	1	R	T	-	-	-	-	
14036	Chapel House, Hill Chorlton	44	34	61/62	49	42	45	50	43	1	1	A	5	R	T	-	-	-	-	
14037	Stone Road, Hill Chorlton	45	35	63/64	39	35	45	46	38	7	3	A	1	R	T	-	-	-	-	#
14038	Coneygreave Farmhouse, Whitmore	44	34	63/64	48	38	50	49	40	1	2	A	1	R	T	-	-	-	-	
14039	Appleton Drive, Whitmore	43	33	60/61	57	54	58	57	54	0	0	A	15	R	T	-	-	-	-	
14041	Heath Road, Whitmore	37	27	64/65	44	40	52	45	40	1	0	A	1	R	T	-	-	-	-	
14043	Heath Road, Whitmore	27	18	54/56	44	40	52	44	40	0	0	NA	2	R	T	-	-	-	-	
14044	Coneygreave Lane, Whitmore	39	30	56/57	43	38	50	45	39	2	1	NA	11	R	T	-	-	-	-	
14045	Dab Green, Whitmore	35	25	51/52	43	43	60	44	43	1	0	NA	2	R	T	-	-	-	-	
14046	Heath Road, Whitmore	23	14	55/56	44	38	51	44	38	0	0	NA	1	R	T	-	-	-	-	

Assessment location		Impact criteria										Significance criteria								Significant effect
Ref	Area represented	Proposed Scheme only (year 15 traffic)			Do nothing (opening year baseline)			Do something (opening year baseline + year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
14047	Broadlands, Heath Rise, Whitmore Heath	17	10	5/5	44	40	52	44	40	0	0	NA	1	R	T	-	-	-	-	
14050	Common Lane, Whitmore	38	28	60/61	61	58	62	61	58	0	0	A	9	R	T	H	-	-	-	
14051	Heath Road, Whitmore	41	31	67/68	44	40	52	46	41	2	1	A	2	R	T	-	-	-	-	
14052	Heath Road, Whitmore Heath	18	11	45/46	44	40	52	44	40	0	0	NA	2	R	T	-	-	-	-	
14053	Coneygreave Lane, Whitmore	36	26	55/56	56	48	62	56	48	0	0	NA	8	R	T	-	-	-	-	
14054	Heath Road, Whitmore	17	10	5/5	44	40	52	44	40	0	0	NA	1	R	T	-	-	-	-	
14055	Heath Road, Whitmore	24	15	56/57	44	40	53	44	40	0	0	NA	5	R	T	-	-	-	-	
14056	Wyndways, Whitmore Heath	17	10	5/5	44	40	52	44	40	0	0	NA	1	R	T	-	-	-	-	
14057	Heath Road, Whitmore	36	27	60/61	44	40	53	45	40	1	0	A	1	R	T	-	-	-	-	
14058	Sandy Ridge, Whitmore Heath	17	10	5/5	44	40	52	44	40	0	0	NA	1	R	T	-	-	-	-	
14059	Common Farm, Whitmore Heath	20	12	51/52	44	40	52	44	40	0	0	NA	2	R	T	-	-	-	-	
14060	Fair-Green Road, Baldwin's Gate	38	28	56/57	61	58	63	61	58	0	0	NA	24	R	T	H	-	-	-	

Assessment location		Impact criteria										Significance criteria								Significant effect
Ref	Area represented	Proposed Scheme only (year 15 traffic)			Do nothing (opening year baseline)			Do something (opening year baseline + year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
14061	Appleton Drive, Whitmore	36	27	54/55	54	38	50	54	38	0	0	NA	4	R	T	-	-	-	-	
14062	Hunters Way, Whitmore Heath	18	10	47/49	44	40	52	44	40	0	0	NA	1	R	T	-	-	-	-	
14063	Fair-Green Road, Baldwin's Gate	37	28	55/56	47	44	50	47	44	0	0	NA	23	R	T	-	-	-	-	
14065	Appleton Drive, Whitmore	36	26	54/55	56	38	50	56	38	0	0	NA	10	R	T	-	-	-	-	
14066	The Willows, Whitmore Heath	20	12	55/56	44	40	52	44	40	0	0	NA	1	R	T	-	-	-	-	
14067	The Dingle, Whitmore Heath	33	23	61/63	44	40	52	44	40	0	0	A	1	R	T	-	-	-	-	
14068	Kepplestone, Whitmore Heath	43	34	76/77	44	40	52	47	41	3	1	A	1	R	T	-	-	-	-	#
14069	Fernridge / Mandarin House, Whitmore Heath	40	30	68/69	44	40	52	45	40	1	0	A	3	R	T	-	-	-	-	
14070	Snape Hall Close, Whitmore	34	24	55/56	46	38	50	46	38	0	0	NA	10	R	T	-	-	-	-	
14071	The Nook / Tree Tops, Whitmore Heath	17	10	52/54	44	40	52	44	40	0	0	NA	2	R	T	-	-	-	-	
14072	Chorlton Moss Cottage, Baldwin's Gate	38	29	58/59	36	32	45	40	34	4	2	A	6	R	T	-	-	-	-	#

Assessment location		Impact criteria										Significance criteria								Significant effect
Ref	Area represented	Proposed Scheme only (year 15 traffic)			Do nothing (opening year baseline)			Do something (opening year baseline + year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
14073	The Chimes, Baldwin's Gate	35	26	53/54	65	62	63	65	62	0	0	NA	5	R	T	H	-	-	-	
14074	West Ridge, Birch Tree Lane, Whitmore Heath	30	21	66/67	44	40	52	44	40	0	0	A	1	R	T	-	-	-	-	
14075	Birch Tree Lane, Whitmore	41	31	68/69	44	40	52	46	41	2	1	A	1	R	T	-	-	-	-	
14077	Birch Tree Lane, Whitmore	44	35	68/69	40	36	52	46	38	6	2	A	2	R	T	-	-	-	-	#
14078	Snape Hall Road, Whitmore	34	25	63/64	47	44	53	47	44	0	0	A	8	R	T	-	-	-	-	
14079	Birch Tree Lane, Whitmore	46	36	71/73	44	40	52	48	42	4	2	A	1	R	T	-	-	-	-	#
14080	1 Station Cottages, Baldwin's Gate	34	25	53/54	65	62	63	65	62	0	0	NA	9	R	T	H	-	-	-	
14081	Lea Close, Baldwin's Gate	36	26	53/54	46	38	50	46	38	0	0	NA	41	R	T	-	-	-	-	
14082	Birch Tree Lane, Whitmore	49	40	72/73	44	40	52	50	43	6	3	A	1	R	T	-	-	-	-	OSV04-Co3
14083	Tollgate House, Baldwin's Gate	34	25	52/53	60	56	62	60	56	0	0	NA	26	R	T	H	-	-	-	
14084	Hillview Crescent, Baldwin's Gate	34	24	53/54	65	61	63	65	61	0	0	NA	8	R	T	H	-	-	-	

Assessment location		Impact criteria										Significance criteria								Significant effect
Ref	Area represented	Proposed Scheme only (year 15 traffic)			Do nothing (opening year baseline)			Do something (opening year baseline + year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
14085	Hillview Crescent, Baldwin's Gate	34	24	53/54	54	51	58	54	51	0	0	NA	28	R	T	-	-	-	-	
14086	Snape Hall Road, Whitmore	42	32	62/63	46	43	52	47	43	1	0	A	3	R	T	-	-	-	-	
14087	Snape Hall Cottage, Snape Hall Road, Whitmore	65	55	87/88	44	40	52	65	55	21	15	S	1	R	T	-	-	-	NI	OSV04-C03/ OSV04-D01
14088	Woodberry/Foxdene, Snape Hall Road, Whitmore	60	50	82/84	42	38	52	60	51	18	13	S	2	R	T	-	-	-	NI	OSV04-C03/ OSV04-D01
14090	Snape Hall Road, Whitmore	49	40	70/71	44	40	52	51	43	7	3	A	3	R	T	-	-	-	-	OSV04-C03
14091	Sandyfields, Baldwin's Gate	34	24	52/53	48	38	50	48	38	0	0	NA	27	R	T	-	-	-	-	
14094	Snape Hall Farm, Snape Hall Road, Whitmore	54	44	79/81	37	34	52	54	45	17	11	S	1	R	T	-	-	-	NI	OSV04-C03/ OSV04-D01
14098	Walls Wood, Baldwin's Gate	44	34	61/63	55	52	58	55	52	0	0	A	1	R	T	-	-	-	-	
14099	Walls Wood, Baldwin's Gate	46	36	65/66	54	50	53	55	50	1	0	A	19	R	T	-	-	-	-	
14100	Netherset Lane, Madeley	48	38	63/64	45	40	51	50	42	5	2	A	1	R	T	-	-	-	-	#
14101	Park Wood Drive, Baldwin's Gate	47	37	64/65	54	50	53	55	50	1	0	A	7	R	T	-	-	-	-	

Assessment location		Impact criteria										Significance criteria								Significant effect
Ref	Area represented	Proposed Scheme only (year 15 traffic)			Do nothing (opening year baseline)			Do something (opening year baseline + year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
14102	Park Wood Drive, Baldwin's Gate	45	36	64/65	51	47	53	52	47	1	0	A	15	R	T	-	-	-	-	
14103	Eastwood Rise, Baldwin's Gate	47	37	63/64	50	47	53	52	47	2	0	A	6	R	T	-	-	-	-	
14104	Park Wood Drive, Baldwin's Gate	46	36	63/64	47	43	53	49	44	2	1	A	15	R	T	-	-	-	-	
14105	Manor Glade, Baldwin's Gate	41	31	60/61	46	42	53	47	42	1	0	A	12	R	T	-	-	-	-	
14106	Eastwood Rise, Baldwin's Gate	47	37	63/64	50	46	53	52	47	2	1	A	7	R	T	-	-	-	-	
14108	Netherset Lane, Madeley	51	42	69/70	45	40	51	52	44	7	4	A	2	R	T	-	-	-	-	-
14110	Park Wood Drive, Baldwin's Gate	46	36	62/63	46	42	53	49	43	3	1	A	8	R	T	-	-	-	-	#
14111	Eastwood Rise, Baldwin's Gate	46	37	62/63	46	43	53	49	44	3	1	A	11	R	T	-	-	-	-	#
14112	Manor Road, Madeley	47	37	62/63	47	43	53	50	44	3	1	A	4	R	T	-	-	-	-	#
14113	Manor Road, Baldwin's Gate	43	34	58/59	46	42	53	48	43	2	1	A	13	R	T	-	-	-	-	
14114	Manor Road, Baldwin's Gate	40	31	55/56	43	36	53	45	37	2	1	NA	8	R	T	-	-	-	-	
14115	Manor Road, Madeley	48	38	63/64	46	42	53	50	43	4	1	A	11	R	T	-	-	-	-	#

Assessment location		Impact criteria										Significance criteria								Significant effect
Ref	Area represented	Proposed Scheme only (year 15 traffic)			Do nothing (opening year baseline)			Do something (opening year baseline + year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
14116	Manor Road, Madeley	50	40	64/65	44	42	53	51	44	7	2	A	2	R	T	-	-	-	-	~
14118	Knightley, Madeley	43	34	59/61	46	40	50	48	41	2	1	A	36	R	T	-	-	-	-	
14119	Castle Lane, Madeley	44	35	61/62	46	40	50	48	41	2	1	A	3	R	T	-	-	-	-	
14120	Manor Road, Madeley	53	43	70/71	44	42	53	53	46	9	4	A	1	R	T	-	-	-	-	~
14121	Dwelling At Hey House, Madeley	63	54	79/80	40	35	58	63	54	23	19	S	1	R	T	-	-	-	NI	OSVo4-Do2
14122	Birches Farm Mews, Madeley	45	36	63/64	46	40	50	49	41	3	1	A	14	R	T	-	-	-	-	#
14123	Pastoral Close, Madeley	44	35	62/64	46	40	50	48	41	2	1	A	14	R	T	-	-	-	-	
14125	Pastoral Close, Madeley	44	34	60/61	46	40	50	48	41	2	1	A	12	R	T	-	-	-	-	
14127	Castle Lane, Madeley	44	34	59/61	46	40	50	48	41	2	1	A	22	R	T	-	-	-	-	
14128	Vicarage Lane, Madeley	46	36	63/64	48	44	50	50	45	2	1	A	4	R	T	-	-	-	-	
14129	The Holborn, Madeley	43	33	61/62	53	45	59	53	45	0	0	A	13	R	T	-	-	-	-	
14131	Manor Road, Madeley	62	52	76/77	53	42	51	62	52	9	10	A	1	R	T	-	-	-	-	~

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Ref	Area represented	Proposed Scheme only (year 15 traffic)			Do nothing (opening year baseline)			Do something (opening year baseline + year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
14132	Vicarage Lane, Madeley	46	36	63/64	49	42	50	51	43	2	1	A	13	R	T	-	-	-	-	
14137	Poolside, Madeley	41	31	57/58	63	39	51	63	40	0	1	A	23	R	T	-	-	-	-	
14140	Willow Brook, Madeley	43	34	60/61	46	40	50	48	41	2	1	A	2	R	T	-	-	-	-	
14141	Woore Road, Madeley	46	36	64/65	50	47	50	51	47	1	0	A	1	R	T	-	-	-	-	
14142	Station Road, Madeley	49	39	66/68	60	57	63	60	57	0	0	A	10	R	T	H	-	-	-	
14144	Smithy Corner, Madeley	47	38	65/66	58	52	63	58	52	0	0	A	3	R	T	-	-	-	-	
14146	Haywood Court, Madeley	48	39	66/67	58	53	63	58	53	0	0	A	5	R	T	-	-	-	-	
14148	Haywood Court, Madeley	49	39	66/68	70	66	69	70	66	0	0	A	9	R	T	H	-	-	-	
14149	Cherry Hill, Madeley	42	32	58/59	41	36	50	44	37	3	1	A	54	R	T	-	-	-	-	#
14150	Moss Lane, Madeley	48	38	65/67	68	64	66	68	64	0	0	A	10	R	T	H	-	-	-	
14151	Morningside, Madeley	43	33	60/61	46	43	50	48	43	2	0	A	26	R	T	-	-	-	-	
14153	Moss Lane, Madeley	36	26	52/53	42	34	50	43	35	1	1	NA	16	R	T	-	-	-	-	

Assessment location		Impact criteria										Significance criteria								Significant effect
Ref	Area represented	Proposed Scheme only (year 15 traffic)			Do nothing (opening year baseline)			Do something (opening year baseline + year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
14155	John Offley Road, Madeley	45	35	61/62	52	49	50	53	49	1	0	A	32	R	T	-	-	-	-	
14156	River Lea Mews, Madeley	35	25	51/52	37	31	50	39	32	2	1	NA	10	R	T	-	-	-	-	
14157	Morningside, Madeley	41	31	57/58	42	37	50	45	38	3	1	A	64	R	T	-	-	-	-	#
14158	Mallard Close, Madeley	49	39	65/66	53	45	59	54	46	1	1	A	5	R	T	-	-	-	-	
14160	John Offley Road, Madeley	42	32	58/59	47	44	50	48	44	1	0	A	70	R	T	-	-	-	-	
14161	Bar Hill, Madeley	49	39	64/65	52	49	59	54	49	2	0	A	2	R	T	-	-	-	-	
14162	Moss Lane, Madeley	45	35	61/62	65	61	63	65	61	0	0	A	38	R	T	H	-	-	-	
14163	Bar Hill, Madeley	51	41	66/67	59	51	59	59	51	0	0	A	11	R	T	-	-	-	-	
14164	Morningside, Madeley	40	30	57/59	45	39	50	46	40	1	1	A	21	R	T	-	-	-	-	
14165	Bar Hill, Madeley	52	42	67/68	51	43	59	54	45	3	2	A	1	R	T	-	-	-	-	OSV04-Co4
14166	Charles Cotton Drive, Madeley	38	28	55/56	39	35	50	41	36	2	1	NA	40	R	T	-	-	-	-	
14168	Moss Lane, Madeley	43	33	59/60	60	57	63	60	57	0	0	A	42	R	T	H	-	-	-	

Assessment location		Impact criteria										Significance criteria								Significant effect
Ref	Area represented	Proposed Scheme only (year 15 traffic)			Do nothing (opening year baseline)			Do something (opening year baseline + year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
14169	Moss Lane, Madeley	40	30	58/59	49	44	50	49	44	0	0	A	13	R	T	-	-	-	-	
14170	Moss Lane, Madeley	42	32	60/61	66	62	63	66	62	0	0	A	13	R	T	H	-	-	-	
14171	Bar Hill, Madeley	56	46	68/70	56	45	59	56	46	0	1	A	16	R	T	-	-	-	-	
14172	Heather Glade, Madeley	38	28	55/56	37	32	50	41	34	4	2	NA	35	R	T	-	-	-	-	#
14173	Pear Tree Drive, Madeley	39	29	56/57	41	36	50	43	37	2	1	NA	26	R	T	-	-	-	-	
14174	The Bridle Path, Madeley	39	29	57/59	43	40	50	44	40	1	0	A	36	R	T	-	-	-	-	
14176	The Bridle Path, Madeley	39	29	57/58	42	38	50	44	39	2	1	A	28	R	T	-	-	-	-	
14177	The Bridle Path, Madeley	39	29	58/59	46	43	50	47	43	1	0	A	18	R	T	-	-	-	-	
14178	Bower End Lane, Madeley	42	32	61/63	65	62	63	65	62	0	0	A	2	R	T	H	-	-	-	
14179	The Bridle Path, Madeley	40	30	58/59	40	36	50	43	37	3	1	A	13	R	T	-	-	-	-	#
14180	Bar Hill, Madeley	57	47	73/74	55	44	59	58	47	3	3	A	5	R	T	-	-	-	-	OSV04-Co4
14182	Furnace Lane, Madeley	42	32	59/60	47	45	55	48	45	1	0	A	2	R	T	-	-	-	-	

Assessment location		Impact criteria										Significance criteria								Significant effect
Ref	Area represented	Proposed Scheme only (year 15 traffic)			Do nothing (opening year baseline)			Do something (opening year baseline + year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
14183	86 Bar Hill, Madeley	63	53	79/80	52	39	59	63	53	11	14	S	2	R	T	-	-	-	NI	OSV04-Co4/ OSV04-D03
14184	Moss House Farm, Madeley	40	30	59/60	51	47	54	51	47	0	0	A	5	R	T	-	-	-	-	
14185	Bower End Lane, Madeley	46	37	66/67	48	35	48	50	39	2	4	A	4	R	T	-	-	-	-	#
14187	Bar Hill, Madeley	54	44	70/71	43	41	54	54	46	11	5	A	2	R	T	-	-	-	-	OSV04-Co4
14189	Bower End Lane, Madeley	42	32	65/66	48	46	55	49	46	1	0	A	1	R	T	-	-	-	-	
14190	Bar Hill, Madeley	40	31	56/57	43	33	48	45	35	2	2	NA	5	R	T	-	-	-	-	
14192	Bower End Lane, Madeley	46	37	67/68	39	33	44	47	38	8	5	A	1	R	T	-	-	-	-	#
14195	Mill Lane, Wrinehill	48	39	63/64	47	44	45	51	45	4	1	A	6	R	T	-	-	-	-	#
14199	School Lane, Onneley	41	31	57/58	39	33	44	43	35	4	2	A	4	R	T	-	-	-	-	#
14200	Wrinehill Hall Farm, Mill Lane, Wrinehill	62	53	78/80	36	33	56	62	53	26	20	S	1	R	T	-	-	-	NI	OSV04-D04
14205	Wrinehill Mill, Wrinehill	58	48	73/74	48	45	56	58	50	10	5	A	1	R	T	-	-	-	-	~

Assessment location		Impact criteria										Significance criteria								Significant effect
Ref	Area represented	Proposed Scheme only (year 15 traffic)			Do nothing (opening year baseline)			Do something (opening year baseline + year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact	Mitigation effect	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
14208	Snape Hall Farmhouse, Snape Hall Road, Whitmore Heath	51	41	74/75	48	45	52	53	47	5	2	A	1	R	T	-	-	-	-	OSV04-Co3
14210	Manor Farmhouse, Madeley (CD Ref.: 10/00108/FUL)	53	43	67/68	46	39	51	54	45	8	6	A	3	CD-R	T	-	-	-	-	-
14214	Appleton Drive, Whitmore (CD Ref.: 13/00145/OUT)	35	25	53/54	59	38	50	59	38	0	0	NA	113	CD-R	T	-	-	-	-	
14215	Birch Tree Lane, Whitmore (CD Ref.: 15/00281/FUL)	45	36	65/66	46	43	52	49	44	3	1	A	1	CD-R	T	-	-	-	-	#
14216	Haywood Court, Madeley (CD Ref.: 15/00277/FUL)	50	40	67/68	71	66	69	71	66	0	0	A	4	CD-R	T	H	-	-	-	
14217	Moss Lane, Madeley (CD Ref.: 14/00691/FUL)	48	38	65/66	71	67	70	71	67	0	0	A	1	CD-R	T	H	-	-	-	
14218	Moss Lane, Madeley (CD Ref.: 12/00028/FUL)	48	39	66/67	71	67	70	71	67	0	0	A	2	CD-R	T	H	-	-	-	
14219	The Bridle Path, Madeley (CD Ref.: 13/00990/OUT)	39	29	58/59	50	47	54	50	47	0	0	A	42	CD-R	T	-	-	-	-	
14220	Whitmore Arms, Madeley	45	35	62/63	42	38	62	46	40	4	2	A	2	R	T	-	-	-	-	#

Assessment location		Impact criteria										Significance criteria							Significant effect	
Ref	Area represented	Proposed Scheme only (year 15 traffic)			Do nothing (opening year baseline)			Do something (opening year baseline + year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact		Mitigation effect
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
14233	Woodcroft, Red Lane, Madeley	55	45	70/72	52	48	59	56	50	4	2	A	1	R	T	-	-	-	-	OSV04-Co4
14234	Monument Lodge, Manor Road, Madeley	52	42	70/71	61	58	59	61	58	0	0	A	1	R	T	H	-	-	-	
14235	Station Road, Madeley	50	40	67/69	73	68	70	73	68	0	0	A	2	R	T	H	-	-	-	
14237	Moss Lane, Madeley (CD Ref: 14/00009/FUL)	40	30	58/59	49	44	50	49	44	0	0	A	1	CD-R	T	-	-	-	-	
14238	Bower End Lane, Madeley (CD Ref: 14/00132/FUL)	37	27	55/56	51	47	54	51	47	0	0	NA	5	CD-R	T	-	-	-	-	
14239	The Moss, Moss Lane, Madeley (CD Ref: 14/00299/OUT)	41	31	59/61	66	62	63	66	62	0	0	A	1	CD-R	T	H	-	-	-	
14240	Manor Road, Madeley	53	43	67/68	46	39	51	54	45	8	6	A	1	R	T	-	-	-	-	~
14241	The Brackens, Heath Road, Whitmore Heath	23	14	55/56	44	38	51	44	38	0	0	NA	1	R	T	-	-	-	-	

Table 16: Operational airborne sound, noise impacts and significant effects: non-residential receptors

Assessment location		Impact criteria										Significance criteria							Significant effect			
Ref	Area represented	Proposed Scheme only (year 15 traffic)			Do nothing (opening year baseline)			Do something (opening year baseline + year 15 traffic) ****				Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment		Unique feature	Combined impact	Mitigation effect
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **											
8427(N)	Hey House & Edland Kennels/Cattery, Madeley	63	54	79/80	46	42	58	63	54	17	12	B	1	G5	T	-	-	-	-	OSVo4-No1		
14018(N)	St Mary's & All Saints' Church, Whitmore	45	36	63/64	54	51	62	55	51	1	0	B	1	G3	T	-	-	-	-			
14021(N)	North Staffordshire Hunt's Kennels, Hill Chorlton	51	41	64/65	37	33	53	51	42	14	9	B	1	G5	T	-	-	-	-	~		
14048(N)	Whitmore Village Hall, Whitmore	37	27	55/56	45	38	50	46	38	1	0	B	1	G3	T	-	-	-	-			
14076(N)	Baldwin's Gate Church Of England Primary School	35	26	53/54	51	38	50	51	38	0	0	B	1	G4	T	-	-	-	-			
14130(N)	Madeley Cemetery, Madeley	62	53	80/81	55	50	58	63	55	8	5	B	1	G3	T	-	-	-	-	OSVo4-No2		
14138(N)	All Saints' Church, Madeley	45	36	63/64	57	48	50	57	48	0	0	B	1	G3	T	-	-	-	-			

Assessment location		Impact criteria										Significance criteria							Significant effect	
Ref	Area represented	Proposed Scheme only (year 15 traffic)			Do nothing (opening year baseline)			Do something (opening year baseline + year 15 traffic) ****		Change		Type of effect	Number of impacts represented	Type of receptor	Receptor design	Existing environment	Unique feature	Combined impact		Mitigation effect
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **									
14145(N)	Madeley Allotment, Madeley	53	44	71/73	61	58	59	62	58	1	0	B	1	G5	T	H	-	-	-	
14147(N)	Unreal Paintball Site, Manor Farm, Manor Road, Madeley	53	43	67/68	46	39	51	54	45	8	6	B	1	G5	T	-	-	-	-	
14152(N)	Sir John Offley Church Of England Primary School, Madeley	46	36	64/65	57	53	63	57	53	0	0	B	1	G4	T	-	-	-	-	
14167(N)	Moss Lane GP Surgery, Madeley	40	30	57/58	48	43	50	49	43	1	0	B	1	G4	T	-	-	-	-	
14207(N)	Whitmore Post Office, Baldwin's Gate	35	26	53/54	66	38	50	66	38	0	0	B	1	G5	T	H	-	-	-	
14213(N)	Hillview Crescent, Baldwin's Gate (CD Ref.: 13/00426/OUT)	34	25	55/56	61	58	63	61	58	0	0	B	1	G50	T	H	-	-	-	

### Direct impact - Summary

5.2.9 The operational airborne noise impacts identified in Table 15 and Table 16 are summarised in Table 17.

Table 17: Summary of operational airborne sound impacts

Receptor type	Numbers of impact (Numbers of impacts excluding those in committed developments)				
	Above LOAEL	Above SOAEL	Impacts		
			Minor	Moderate	Major
Residential properties	969 (914)	9 (9)	12 (12)	21 (18)	17 (17)
Non-residential properties	N/A	N/A	2		
Schools	N/A	N/A	None		
Quiet areas	N/A	N/A	None		

### Airborne sound: indirect impacts and effects

5.2.10 The transport assessment presented in Volume 5: Appendix TR-000-001, has been used to identify those roads or railways within this study area where the alignment remains as at present, but a change in flow or composition is identified which is greater than the screening criteria defined in Volume 5: Appendix SV-001-000.

5.2.11 No roads or railways which exceed the criteria defined in Volume 5: Appendix SV-001-000 have been identified in this study area. The assessment of operational noise and vibration indicates that significant indirect effects on residential receptors are unlikely to occur in this area.

### Airborne sound levels used in other assessments

5.2.12 The operational sound results contained in this document have been used by other disciplines, namely agriculture, cultural heritage, landscape and visual, communities and socio economics, in their assessments. This includes the information in Table 15 and Table 16. Locations of interest to these other disciplines which may not appear in Table 15 and Table 16 are presented in Table 18.

Table 18: Operational airborne sound level for use in cross discipline assessments

Assessment location		Sound level information											Discipline				
Ref	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Agriculture	Communities	Heritage	Landscape & Visual	Socio-economic	
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **						
8378(N)	Snape Hall Farm, Snape Hall Road, Whitmore Heath	54	44	72/73	44	40	52	54	46	10	6	Y	-	-	-	-	
8388(N)	Bar Hill House Farm, Bar Hill	55	45	71/72	48	37	54	56	46	8	9	Y	-	-	-	-	
8486(N)	Offley Almshouses, Madeley	50	40	67/69	73	68	70	73	68	0	0	-	-	Y	-	Y	
8427(N)	Hey House & Edland Kennels/Cattery, Madeley	63	54	79/80	46	42	58	63	54	17	12	-	-	Y	-	-	
14018(N)	St Mary's & All Saints' Church, Whitmore	45	36	63/64	54	51	62	55	51	1	0	-	-	-	-	-	
14020(N)	The Mainwaring Arms, Whitmore	46	37	64/65	65	61	62	65	61	0	0	-	-	-	-	Y	
14021(N)	North Staffordshire Hunt's Kennels, Hill Chorlton	51	41	64/65	37	33	53	51	42	14	9	-	-	-	-	-	
14025(N)	Whitmore Cricket Ground, Whitmore	53	43	70/71	46	45	62	54	47	8	2	-	-	-	-	-	
14048(N)	Whitmore Village Hall, Whitmore	37	27	55/56	45	38	50	46	38	1	0	-	-	-	-	-	
14076(N)	Baldwin's Gate Church Of England Primary School	35	26	53/54	51	38	50	51	38	0	0	-	-	-	-	-	
14130(N)	Madeley Cemetery, Madeley	62	53	80/81	55	50	58	63	55	8	5	-	-	-	-	-	

Assessment location		Sound level information										Discipline				
Ref	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Agriculture	Communities	Heritage	Landscape & Visual	Socio-economic
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **					
14138(N)	All Saints' Church, Madeley	45	36	63/64	57	48	50	57	48	0	0	-	-	-	-	-
14145(N)	Madeley Allotment, Madeley	53	44	71/73	61	58	59	62	58	1	0	-	-	-	-	-
14147(N)	Unreal Paintball Site, Manor Farm, Manor Road, Madeley	53	43	67/68	46	39	51	54	45	8	6	-	Y	-	-	-
14152(N)	Sir John Offley Church Of England Primary School, Madeley	46	36	64/65	57	53	63	57	53	0	0	-	-	-	-	-
14167(N)	Moss Lane GP Surgery, Madeley	40	30	57/58	48	43	50	49	43	1	0	-	-	-	-	-
14203(N)	Wrinehill Gardens, Wrinehill Hall, Wrinehill	63	54	79/80	35	31	56	63	54	28	23	Y	-	Y	-	-
14204(N)	Wrinehill Mill Farm, Wrinehill	62	52	78/80	44	40	56	62	52	18	12	Y	-	-	-	-
14206(N)	Sheet Anchor Pub, Baldwin's Gate	35	25	52/53	58	38	50	58	38	0	0	-	-	-	-	Y
14207(N)	Whitmore Post Office, Baldwin's Gate	35	26	53/54	66	38	50	66	38	0	0	-	Y	-	-	-
14209(N)	Old Madeley Manor (Off Manor Road), Madeley	48	38	63/65	44	42	53	49	44	5	2	-	-	Y	-	-
14211(N)	Offley Well Head, Madeley	54	44	72/73	58	55	59	59	55	1	0	-	-	Y	-	-
14212(N)	Madeley White Star Football Club, Madeley	57	48	75/76	52	48	59	58	51	6	3	-	Y	-	-	-

Assessment location		Sound level information										Discipline				
Ref	Area represented	Proposed Scheme only (Year 15 traffic)			Do nothing (Opening year baseline)			Do something (Opening year baseline + Year 15 traffic) ****		Change		Agriculture	Communities	Heritage	Landscape & Visual	Socio-economic
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **					
14222(N)	Snape Hall Road, Whitmore	40	31	63/64	56	53	58	56	53	0	0	-	-	-	Y	-
14223(N)	Walls Wood, Baldwins Gate	45	36	65/66	56	53	58	56	53	0	0	-	-	-	Y	-
14224(N)	The Old Rectory, Whitmore	46	36	64/65	44	40	62	48	42	4	2	-	-	-	Y	-
14225(N)	Netherset Lane, Madeley	54	44	68/69	45	40	51	54	45	9	5	-	-	-	Y	-
14226(N)	Baldwin's Gate Sandstone Hills And Heaths #1	52	42	67/68	43	39	53	52	44	9	5	-	-	-	Y	-
14227(N)	Manor Road, Madeley	45	35	60/61	46	42	53	48	43	2	1	-	-	-	Y	-
14228(N)	Netherset Lane, Madeley	51	41	64/66	44	40	51	52	44	8	4	-	-	-	Y	-
14229(N)	Bar Hill, Madeley	45	36	62/63	35	33	54	46	38	11	5	-	-	-	Y	-
14230(N)	Bar Hill, Madeley	60	51	76/77	34	32	54	60	51	26	19	-	-	-	Y	-
14231(N)	Mill Lane, Wrinehill	62	53	78/80	39	33	44	62	53	23	20	-	-	-	Y	-
14232(N)	School Lane, Onneley	56	46	71/73	39	33	44	56	46	17	13	-	-	-	Y	-

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High Speed Two (HS2) Limited  
Two Snowhill  
Snow Hill Queensway  
Birmingham B4 6GA

08081 434 434  
[HS2Enquiries@hs2.org.uk](mailto:HS2Enquiries@hs2.org.uk)