

# High Speed Rail (West Midlands - Crewe)

## Environmental Statement

### Volume 5: Technical appendices

CA2: Colwich to Yarlet

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



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CA2: Colwich to Yarlet

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



## 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.

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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 Colwich to Yarlet community area (CA2) 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 Colwich to Yarlet area the guidance within The Plan for Stafford Borough (2011 – 2031)<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> (Section 6).

### 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 Stafford Borough Council (SBC) 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 and 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. SBC officers attended baseline sound measurements in this area and witnessed 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 Addendum. 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 (Section 8) and are further detailed in Volume 5: Appendix SV-001-000. Local assumptions that apply to the assessment

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

<sup>2</sup> Stafford Borough Council (2014), *The Plan for Stafford Borough 2011 – 2031*, <http://www.staffordbc.gov.uk/live/Documents/Planning%20Policy/Plan%20for%20Stafford%20Borough/PFSB-Adoption.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

of construction sound noise and vibration within this area are set out Volume 2, Colwich to Yarlet (CA Report 2), 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: the A51 Lichfield Road that runs through Little Haywood, Great Haywood and Pasturefields; the A518 Weston Road that runs past the Stafford Showground; and the A34 Stone Road dual carriageway that runs through Yarlet. Other main roads that contribute to the sound environment are the B5066 Sandon Road that runs through Hopton, and the A513 Beaconside that connects the A518 to the A34 and the M6 motorway.
- 3.1.3 The community of Moreton has low existing sound levels as it is well removed from any major roads or railways. Existing sound levels are between 40 and 45dB<sup>5</sup> during the daytime and between 30 and 35dB<sup>6</sup> during the night-time.
- 3.1.4 The town of Great Haywood is characterised by sound from the A51 Lichfield Road to the east of the town, where daytime sound levels are typically around 60dB daytime and 55dB night-time for those dwellings facing the A51 Lichfield Road. Within the town, sound from local roads and from the A51 Lichfield Road and WCML produce levels between 40dB and 50dB daytime and 30dB to 40dB night-time. For western Great Haywood, close to the WCML, sound levels are between 45dB and 55dB daytime and 35dB to 45dB night-time.
- 3.1.5 At Ingestre, sound levels are relatively low due to the absence of through roads and the distance from major transport sound sources. Sound levels are typically around 45dB daytime and 35dB night-time. Similar existing sound levels are also present at dwellings in and around Park Farm just south of the Staffordshire County Showgrounds.
- 3.1.6 The main body of Hopton is subject to relatively low existing sound levels, typically around 40dB daytime and 35dB night-time. The west of Hopton (around Mount Edge) has slightly higher sound levels at 45dB daytime and 40dB night-time. Marsten also has relatively low sound levels of around 45dB daytime and 35dB night-time.
- 3.1.7 Yarlet is situated immediately adjacent to the A34 Stone Road which is a dual carriageway with a posted speed limit of 60mph and is a major existing local sound source. Dwellings alongside the A34 have sound levels of around 60 to 65dB daytime and 55 to 60dB night-time, with sound levels dropping off away from the road.
- 3.1.8 At the community of Whitgreave, sound levels are dominated by the M6 and are around 50dB to 55dB during both the daytime and night-time.

<sup>5</sup> Quoted daytime dB values at residential areas refer to the free-field 16 hour daytime (07:00 to 23:00) equivalent continuous sound pressure level,  $L_{pAeq,16hr}$

<sup>6</sup> Night-time sound levels refer to the free-field 8 hour night-time (23:00 to 07:00) equivalent continuous sound pressure level,  $L_{pAeq,8hr}$

## 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 Appendix SV-001-000.
- 3.3.2 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.
- 3.3.3 Within the Colwich to Yarlet area, 22 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:
- nine long-term measurements – unattended measurements of several days duration; and
  - thirteen 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

## Appendix SV-002-002

- highest  $L_{pAFmax,5min}$  night-time sound pressure level.
- 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; 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 derivation method.

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 $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	Daytime, $L_{pAeq}$	Evening / weekend, $L_{pAeq}$	Night-time, $L_{pAeq}$	
8090	Moreton Grange, Moreton	ML86	44	35	49	81	45	41	35	1, A, i, a
8118	Moreton House Farm	ML87	44	34	43	73	45	37	34	2, A, i, a
8208	Kent's Barn Farm, Hopton	ML110	41	37	45	62	42	33	37	1, A, i, a
8212	Marston Farm, Marston Lane	ML44	42	42	51	86	43	38	42	1, A, i, a
8351	Lowerhouse Farm, Hopton	ML9	41	39	48	91	41	36	39	1, A, i, a
8353	Church Farm, Marston Lane	ML106	44	35	49	72	45	37	35	1, A, i, a
8433	Canalside Farm Café & Shops, Mill Lane, Great Haywood	-	47	39	51	72	50	46	39	5, C, -, b
8438	Park Farm, Stafford: Bed And Breakfast / Camp Site	ML149	44	36	46	75	45	40	36	1, A, i, a
8456	Grange Farm, Yarlet	ML61	43	38	50	82	43	38	38	1, A, ii, b
8577	Ingestre Hall, Ingestre	ML193	43	35	47	66	44	41	35	2, A, ii, b
12001	Upper Moreton Farm, Moreton	ML117	42	34	49	69	44	36	34	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>	
12002	Upper Moreton Farm & Education Centre	ML117	42	34	49	69	44	36	34	2, A, i, a
12003	Bishton Lane, Wolseley Bridge	ML87	44	34	43	73	45	37	34	2, A, i, a
12004	Moreton Grange, Bishton Lane, Moreton	ML86	44	35	49	81	45	41	35	1, A, i, a
12005	Bishton Lane, Wolseley Bridge	ML150	40	33	45	77	41	35	33	1, A, ii, a
12007	Farmhouse at Moreton House Farm	ML150	40	33	45	77	41	35	33	1, A, ii, a
12008	Moreton House, Moreton	ML150	40	33	45	77	41	35	33	1, A, ii, a
12010	Tolldish Lane, Great Haywood	ML107	41	31	44	72	43	36	31	2, A, i, a
12012	Coley Lane, Little Haywood	ML81	46	34	47	78	47	41	34	2, A, i, a
12013	Tolldish Lane, Great Haywood	ML128	42	30	42	68	43	39	30	2, A, i, a
12016	Tolldish Lane, Great Haywood	ML36	40	34	46	65	41	36	34	2, A, ii, b
12017	Coley Lane, Little Haywood	ML73	43	37	51	66	44	40	37	2, A, i, a
12018	Coley Lane, Little Haywood	ML73	43	37	51	66	44	40	37	2, A, ii, a
12019	Coley Lane, Little Haywood	ML504	45	38	53	69	46	41	38	2, B, iii, 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>	
12022	Toldish Lane, Great Haywood	ML36	40	34	46	65	41	36	34	2, A, i, a
12023	Toldish Lane, Great Haywood	ML36	40	34	46	65	41	36	34	2, A, i, a
12024	Little Tixall Lane, Great Haywood	-	53	48	53	69	54	48	48	3, C, -, b
12025	Farley Corner, Great Haywood	ML108	40	37	50	99	41	37	37	1, A, i, a
12026	Oldfields Crescent, Great Haywood	-	60	55	58	65	61	56	55	3, A, -, b
12027	Little Tixall Lane, Great Haywood	-	49	44	53	69	50	45	44	3, C, -, b
12029	The Uplands, Great Haywood	-	37	32	53	69	38	33	32	3, C, -, b
12030	Oldfields Crescent, Great Haywood	-	58	54	58	65	59	54	54	3, A, -, b
12031	Earlsway, Great Haywood	-	48	44	53	69	49	44	44	3, C, -, b
12032	Toldish Lane, Great Haywood	-	56	51	53	69	57	52	51	3, A, -, b
12033	Toldish Lane, Great Haywood	-	58	53	58	65	59	54	53	3, A, -, b
12034	Farley Corner, Great Haywood	-	65	60	62	72	66	61	60	3, A, -, b
12035	Oldfields Crescent, Great Haywood	-	58	53	58	65	59	54	53	3, A, -, 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>	
12036	Farley Corner, Great Haywood	-	65	60	63	84	66	61	60	3, A, -, b
12037	Essex Drive, Great Haywood	ML207	42	37	53	69	43	38	37	3, C, -, b
12038	Little Tixall Lane, Great Haywood	-	39	37	50	67	40	36	37	6, A, ii, c
12040	Little Tixall Lane, Great Haywood	ML207	39	37	50	67	40	36	37	5(2), C(A), ii, c
12041	Essex Drive, Great Haywood	ML207	47	37	50	67	48	43	37	2, A, ii, b
12042	Green Acres, Great Haywood	ML207	47	37	50	67	48	43	37	2, A, i, b
12044	Heywood Abbey Nursing Home	-	39	37	50	67	40	36	37	6, A, ii, c
12046	The Uplands, Great Haywood	-	36	30	50	67	38	34	30	5, C, -, b
12048	Manor Close, Great Haywood	-	39	37	50	67	40	36	37	6, A, ii, c
12049	St Johns Roman Catholic Primary School	-	39	32	50	67	41	37	32	5, C, -, b
12050	Abbey House, Great Haywood	-	39	37	50	67	40	36	37	6, A, ii, c
12051	St John The Baptist Church, Great Haywood	-	43	35	50	67	45	40	35	5, 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>	
12052	Church View, Great Haywood	-	38	31	50	67	40	36	31	5, C, -, b
12053	Hunters Close, Great Haywood	-	45	38	50	67	48	45	38	5, C, -, a
12054	Mill Lane, Great Haywood	-	47	40	50	67	50	46	40	5, C, -, a
12055	Trent Close, Great Haywood	-	48	39	50	67	49	44	39	5, C, -, b
12056	Marina, Hoo Mill Lock, Great Haywood	-	51	44	56	79	54	51	44	5, C, -, b
12057	Elm Close, Great Haywood	-	46	39	50	67	49	46	39	5, C, -, b
12058	Anson Church Of England Primary School	-	47	39	50	67	50	45	39	5, C, -, b
12059	Trent Lane, Great Haywood	-	54	47	51	72	54	53	47	4, A, -, b
12060	Elm Close, Great Haywood	-	53	46	51	72	53	52	46	4, C, -, b
12064	Hoo Mill Lane, Great Haywood	-	41	35	51	72	43	39	35	5, C, -, b
12066	Hoo Mill Lane, Great Haywood	ML194	46	39	49	77	47	41	39	1, A, i, a
12067	Hoo Mill Lane, Great Haywood	ML194	46	39	49	77	47	41	39	1, A, i, a
12068	Shugborough Hall: The Mansion	-	39	31	50	67	41	36	31	5, 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>	
12070	Ingestre Park Road, Ingestre	ML193	43	35	47	66	44	41	35	2, A, ii, b
12071	Lion Lodge, Ingestre	ML193	43	35	47	66	44	41	35	2, A, ii, b
12073	Home For The Disabled, Ingestre	ML193	43	35	47	66	44	41	35	2, A, ii, b
12074	Ingestre Manor Lodge, Ingestre	ML193	43	35	47	66	44	41	35	2, A, ii, b
12075	Tixall Court, Tixall	ML206	44	35	50	68	46	38	35	2, A, ii, b
12076	Tixall Manor Farm, Tixall	ML206	44	35	50	68	46	38	35	2, A, i, a
12077	Tixall Court, Tixall	ML206	44	35	50	68	46	38	35	2, A, ii, b
12078	Tixall Farmhouse, Tixall	ML206	44	35	50	68	46	38	35	2, A, ii, b
12079	Meadow Cottage, Ingestre	ML193	43	35	47	66	44	41	35	2, A, i, a
12080	Little Ingestre House Care Home, Ingestre	ML193	43	35	47	66	44	41	35	2, A, i, a
12081	Rectory Cottage, Ingestre	ML193	43	35	47	66	44	41	35	2, A, i, a
12082	The Old Rctory, Ingestre	ML193	43	35	47	66	44	41	35	2, A, i, a
12083	The Lindens, Ingestre	ML193	43	35	47	66	44	41	35	2, 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>	
12084	Tixall Mews, Tixall	ML103	44	39	50	74	45	41	39	2, A, i, a
12085	Home Farm Court, Ingestre	ML193	43	35	47	66	44	41	35	2, A, ii, b
12086	New Stables, Ingestre	ML193	43	35	47	66	44	41	35	2, A, ii, b
12087	Ingestre Riding School And Stables, Ingestre	ML193	43	35	47	66	44	41	35	2, A, ii, b
12089	Waterford House, Ingestre	ML193	43	35	47	66	44	41	35	2, A, ii, b
12090	The Old Stables, Ingestre	ML193	43	35	47	66	44	41	35	2, A, ii, b
12092	St Mary The Virgin Church, Ingestre	ML193	43	35	47	66	44	41	35	2, A, ii, b
12093	Ingestre Hall, Ingestre	ML193	43	35	47	66	44	41	35	2, A, ii, b
12095	Park House, Hopton	ML21	47	38	49	79	48	45	38	1, A, ii, b
12097	Hanyards Lane, Tixall	ML153	47	41	53	81	48	42	41	1, A, ii, a
12098	Fiddlers Lodge, Hopton	ML21	47	38	49	79	48	45	38	1, A, i, a
12101	Staffordshire County Showground, Horse Showing Ring	-	44	38	50	62	45	37	38	3, C, -, b
12102	Park Farm Barns, Weston Road, Stafford	ML149	44	36	46	75	45	40	36	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>	
12103	Park Farm Barns / Park Farm, Weston Road, Stafford	ML149	44	36	46	75	45	40	36	1, A, i, a
12106	Staffordshire County Showground, North-Western Fields Near A518	-	51	44	50	62	52	44	44	3, C, -, b
12107	Staffordshire County Showground, Indoor Showring and Annexes	-	45	39	50	62	46	39	39	3, CD, -, b
12108	Staffordshire County Showground, Main Outdoor Showring	-	47	41	50	62	48	40	41	3, C, -, b
12109	Weston Road, Stafford	-	63	57	58	65	64	56	57	3, C, -, b
12110	Staffordshire County Showground, North-Western Fields Near A518	-	55	49	50	62	56	48	49	3, C, -, b
12111	Staffordshire County Showground, Southern Fields Near Indoor Showring	-	44	38	50	62	45	38	38	3, C, -, b
12112	Staffordshire County Showground, Offices/Suites	ML191	50	42	50	62	52	37	42	2, B, iii, b
12113	Staffordshire County Showground, Western Fields Near A518	-	54	48	50	62	55	47	48	3, C, -, b
12114	Staffordshire County Showground, Southern Fields Near A518	-	53	46	50	62	54	46	46	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>	
12115	Mod, Within Lane, Hopton	ML46	46	36	49	75	47	41	36	2, A, ii, b
12116	Weston Road, Stafford	-	57	51	58	65	58	51	51	3, C, -, b
12117	Mod, Within Lane, Hopton	ML46	46	36	49	75	47	41	36	2, A, ii, b
12119	Within Lane, Hopton	ML46	46	36	49	75	47	41	36	2, A, i, a
12120	Wilmore Hill Lane, Hopton	ML189	40	39	43	56	41	30	39	2, A, i, a
12121	Weston Road, Stafford	-	44	39	50	62	45	38	39	3, C, -, b
12122	Wilmore Hill Lane, Hopton	ML46	46	36	49	75	47	41	36	2, A, i, a
12123	Battle Ridge, Hopton	ML93	40	35	47	77	41	34	35	1, A, ii, a
12124	Battle Ridge, Hopton	ML93	40	35	47	77	41	34	35	1, A, ii, a
12125	Battle Ridge, Hopton	ML93	40	35	47	77	41	34	35	1, A, ii, a
12126	Battle Ridge, Hopton	ML93	40	35	47	77	41	34	35	1, A, ii, a
12127	Wilmore Hill Lane, Hopton	ML93	40	35	47	77	41	34	35	1, A, ii, a
12128	Cromwell Close, Hopton	ML93	40	35	47	77	41	34	35	1, A, ii, 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>	
12129	Kings Drive, Hopton	ML93	40	35	47	77	41	34	35	1, A, ii, a
12130	Wilmore Court, Hopton	ML93	40	35	47	77	41	34	35	1, A, ii, a
12131	Kings Drive, Hopton	ML93	40	35	47	77	41	34	35	1, A, ii, a
12132	Within Lane, Hopton	ML71	44	41	51	93	44	43	41	1, A, iii, b
12133	Kings Drive, Hopton	ML93	40	35	47	77	41	34	35	1, A, ii, a
12134	Kings Drive, Hopton	ML93	40	35	47	77	41	34	35	1, A, ii, a
12135	Ravensbank Farm, Hopton	ML71	44	41	51	93	44	43	41	1, A, iii, b
12136	Kings Drive, Hopton	ML93	40	35	47	77	41	34	35	1, A, ii, a
12137	Within Lane, Hopton	ML71	44	41	51	93	44	43	41	1, A, iii, b
12138	Within Lane, Hopton	ML71	44	41	51	93	44	43	41	1, A, iii, b
12139	Hopton Hall Lane, Hopton	ML93	40	35	47	77	41	34	35	1, A, ii, a
12140	Wilmore Hill Lane, Hopton	ML93	40	35	47	77	41	34	35	1, A, i, a
12141	Orchard Caravan Site, Hopton	ML71	44	41	51	93	44	43	41	1, A, iii, 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>	
12142	Lower Lane, Hopton	ML9	41	39	48	91	41	36	39	1, A, i, a
12143	Wilmore Hill Lane, Hopton	ML93	40	35	47	77	41	34	35	1, A, ii, a
12144	Wilmore Hill Lane, Hopton	ML93	40	35	47	77	41	34	35	1, A, i, a
12145	Ravensbank Farm, Hopton	ML71	44	41	51	93	44	43	41	1, A, iii, b
12146	Lower Lane, Hopton	ML93	40	35	47	77	41	34	35	1, A, ii, a
12147	Within Lane, Hopton	ML71	44	41	51	93	44	43	41	1, A, iii, b
12148	Wilmore Hill Lane, Hopton	ML93	40	35	47	77	41	34	35	1, A, i, a
12150	St Peter's Church, Hopton	ML93	40	35	47	77	41	34	35	1, A, i, a
12151	The Old Hall, Hopton	ML93	40	35	47	77	41	34	35	1, A, ii, a
12152	Wilmore Hill Lane, Hopton	ML93	40	35	47	77	41	34	35	1, A, i, a
12153	Wilmore Hill Lane, Hopton	ML93	40	35	47	77	41	34	35	1, A, i, a
12156	Skeath Lane, Sandon Bank	ML13	44	39	53	72	46	37	39	2, A, iii, b
12157	Ranslow Farm, Sandon Bank	ML13	44	39	53	72	46	37	39	2, 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>	
12158	Bank Top House, Hopton	ML71	44	41	51	93	44	43	41	1, A, i, a
12159	Skeath Lane, Sandon Bank	ML13	44	39	53	72	46	37	39	2, A, ii, b
12160	Ridgway Close, Stafford	ML43	44	39	49	72	44	42	39	1, A, i, a
12161	Mount Edge, Hopton	ML43	44	39	49	72	44	42	39	1, A, i, a
12163	Mount Edge, Hopton	ML43	44	39	49	72	44	42	39	1, A, i, a
12164	Mount Edge, Hopton	ML43	44	39	49	72	44	42	39	1, A, ii, a
12165	Hopton Barracks East	ML43	44	39	49	72	44	42	39	1, A, ii, b
12166	Wedgwood Road, Hopton	ML43	44	39	49	72	44	42	39	1, A, ii, a
12167	Mount Edge, Hopton	ML43	44	39	49	72	44	42	39	1, A, i, a
12168	Spode Avenue, Stafford	ML43	44	39	49	72	44	42	39	1, A, i, a
12169	Skeath Lane, Sandon Bank	ML13	44	39	53	72	46	37	39	2, A, i, a
12170	Spode Avenue, Stafford	ML43	44	39	49	72	44	42	39	1, A, ii, a
12171	Sandon Road, Hopton	ML110	41	37	45	62	42	33	37	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>	
12172	Sandon Road, Hopton	ML110	41	37	45	62	42	33	37	1, A, i, a
12173	Hopton Barracks West	-	40	35	50	62	41	34	35	3, C, -, c
12175	Marston Lane, Marston	ML44	42	42	51	86	43	38	42	1, A, iii, b
12176	Marston Lane, Marston	ML44	42	42	51	86	43	38	42	1, A, iii, b
12177	Marston Lane, Marston	ML106	44	35	49	72	45	37	35	1, A, iii, b
12178	Marston Lane, Marston	ML106	44	35	49	72	45	37	35	1, A, iii, b
12179	Sandon Road, Hopton	-	58	52	54	91	59	51	52	3, C, -, c
12181	New Buildings Farm Cottage, Sandon Road, Hopton	ML204	45	41	46	70	46	40	41	1, A, i, a
12182	Marston Villa, Marston	ML106	44	35	49	72	45	37	35	1, A, ii, b
12183	Newbuildings Farm, Hopton	ML100	47	43	52	70	48	40	43	2, A, i, a
12184	Marston Cottage, Marston	ML106	47	35	49	72	48	38	35	3(1), A, ii, c
12186	Enson Moor House, Enson	ML82	41	36	48	86	42	39	36	1, A, i, a
12188	Church Farm, Marston	ML106	44	35	49	72	45	37	35	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>	
12189	Marston Lane, Marston	ML44	42	42	51	86	43	38	42	1, A, i, a
12190	Wayside, Marston	ML106	44	35	49	72	45	37	35	1, A, i, a
12191	Marston Lane, Marston	ML44	42	42	51	86	43	38	42	1, A, i, a
12192	Yarlet Lane, Marston	ML106	44	35	49	72	45	37	35	1, A, ii, b
12193	Yarlet Lane, Marston	ML106	44	35	49	72	45	37	35	1, A, ii, b
12194	Saint Leonards Church, Marston	ML106	44	35	49	72	45	37	35	1, A, ii, b
12197	Yarlet Lane, Marston	ML61	43	38	50	82	43	38	38	1, A, ii, b
12200	Yarlet Lane, Marston	ML61	43	38	50	82	43	38	38	1, A, ii, b
12202	Yarlet Lane, Marston	ML61	43	38	50	82	43	38	38	1, A, i, a
12203	Yarlet Lane, Marston	ML61	43	38	50	82	43	38	38	1, A, i, a
12205	Yarlet Lane, Marston	ML61	43	38	50	82	43	38	38	1, A, i, a
12206	Yarlet Lane, Marston	-	41	36	50	82	42	36	36	3, A, -, a
12207	Yarlet Hall Farm, Yarlet	-	40	34	58	68	41	37	34	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>	
12208	Yarlet Lane, Marston	-	45	37	50	82	46	40	37	3, A, -, b
12209	Yarlet School, Yarlet: Main Building	-	50	43	58	68	51	47	43	3, C, -, b
12210	Yarlet School, Yarlet: Houses On-Site Near Chapel	-	47	41	58	68	48	43	41	3, C, -, b
12211	Yarlet Lane, Marston	-	50	45	58	68	51	45	45	3, C, -, b
12212	Glencoe Farm, Yarlet	-	66	59	67	77	67	63	59	3, C, -, b
12213	Stone Road, Yarlet	-	41	37	58	68	42	36	37	3, C, -, b
12214	Yarlet Hall Lodge, Yarlet	-	57	52	67	77	58	52	52	3, C, -, b
12215	Yarlet Bank Farm, Yarlet	-	62	56	67	77	63	59	56	3, C, -, b
12216	Grove Farm, Yarlet	-	63	58	67	77	64	58	58	3, A, -, b
12218	Hill Top Farm, Yarlet	-	68	63	67	77	69	63	63	3, A, -, b
12219	The Old Vicarage, Yarlet	-	68	63	67	77	69	63	63	3, C, -, b
12221	33 Holding, Yarlet	-	67	62	67	77	68	62	62	3, C, -, b
12222	Stone Road, Yarlet	-	63	59	67	77	64	58	59	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>	
12223	30 Holding, Yarlet	-	62	58	67	77	63	57	58	3, C, -, b
12227	Green Lane, Whitgreave	-	46	39	55	84	47	43	39	3, C, -, b
12229	Green Lane, Whitgreave	-	37	31	55	84	38	34	31	3, C, -, b
12231	Green Lane, Whitgreave	-	44	36	59	65	45	40	36	3, A, -, b
12232	Green Lane, Whitgreave	-	47	40	59	65	48	44	40	3, C, -, b
12233	Green Lane, Whitgreave	ML186	55	54	59	65	56	51	54	2, A, i, a
12234	Park Farm, Marston	ML61	43	38	50	82	43	38	38	1, A, ii, b
12236	The Orangery, Ingestre Hall, Ingestre	ML193	43	35	47	66	44	41	35	2, A, ii, b
12238	Essex Bridge, Shugborough Estate	-	46	38	51	72	49	45	38	5, C, -, b
12239	Chinese House At Shugborough Hall	-	40	32	51	72	42	37	32	5, C, -, b
12240	Staffordshire & Worcestershire Canal Great Haywood Canal Bridge 1 09	-	48	40	51	72	51	46	40	5, C, -, b
12241	Staffordshire & Worcestershire Canal	-	40	32	49	77	41	34	32	3, 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>	
12242	Trent & Mersey Canal Middle Bridge 75	-	45	35	51	72	47	43	35	5, C, -, b
12244	Trent & Mersey Canal Hoomill Bridge 76	-	55	48	56	79	55	54	48	4, A, -, b
12246	Stables At Ingestre Hall, Ingestre	ML193	43	35	47	66	44	41	35	2, A, ii, b
12247	Pavillion In Ingestre Park, Ingestre	ML195	43	35	52	84	44	41	35	2, A, iii, c
12248	Little Tixall Lane, Great Haywood (CD Ref.: 14/20886/OUT)	-	52	47	53	69	53	48	47	3, C, -, b
12249	Little Tixall Lane, Great Haywood (CD Ref.: 14/21135/OUT)	-	59	55	58	65	60	55	55	3, A, -, b
12250	Recreational/Leisure Facilities: (CD Ref.: Policy/Sa1/Cannalside/Site)	-	52	45	51	72	55	51	45	5, C, -, b
12251	Oldfields Crescent, Great Haywood	-	53	47	50	67	54	49	47	3, A, -, b
12252	Roseacre Nursery (CD Ref.: Policy/Sa2/Roseacre/Nursery)	-	62	57	58	65	63	58	57	3, A, -, b
12253	Housing Allocation (CD Ref.: Policy Stafford 2 - North of Stafford)	ML204	45	41	46	70	46	40	41	1, A, ii, 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>	
12255	High Meadows Bed And Breakfast, Main Road, Great Haywood	-	48	39	53	69	49	42	39	3, A, -, b
12260	Toldish Lane, Great Haywood	ML128	42	30	42	68	43	39	30	2, A, i, a
12261	Toldish Lane, Great Haywood	ML107	41	31	44	72	43	36	31	2, A, ii, b
12262	Bishton Lane, Wolseley Bridge	ML87	44	34	43	73	45	37	34	2, A, i, a
12263	Bishton Lane, Wolseley Bridge	ML117	42	34	49	69	44	36	34	2, A, ii, b
12264	Hoo Mill Lane, Great Haywood	-	46	39	51	72	50	47	39	5, C, -, b
12265	Hoo Mill Lane, Great Haywood	-	54	48	56	79	57	54	48	5, C, -, b
12266	Mill Lane, Great Haywood	-	39	31	51	72	42	39	31	5, C, -, b
12267	Shugborough	-	46	39	51	72	49	46	39	3, C, -, b
12269	Shugborough	-	40	32	51	72	42	38	32	5, C, -, b
12271	Mill Lane, Great Haywood	-	40	31	50	68	41	33	31	3, C, -, c
12272	Bottle Lodge, Tixall	-	38	28	50	68	39	31	28	3, 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>	
12273	Tixall Mews, Tixall	ML70	42	34	46	73	44	39	34	2, A, iii, b
12274	Hanyards Lane, Tixall	ML195	43	35	52	84	44	41	35	2, A, iii, c
12275	Hanyards Lane, Tixall	ML195	43	35	52	84	44	41	35	2, A, iii, c
12276	Park House, Hopton	ML21	47	38	49	79	48	45	38	1, A, ii, b
12277	Kings Drive, Hopton	-	38	32	50	62	39	33	32	3, C, -, b
12278	Wilmore Hill Lane, Hopton	ML189	40	39	43	56	41	30	39	2, A, ii, b
12279	Sandon Road, Hopton	ML110	41	37	45	62	42	33	37	1, A, i, a
12280	Yarlet Lane, Marston	ML106	44	35	49	72	45	37	35	1, A, ii, b
12281	Yarlet Lane, Marston	ML82	41	36	48	86	42	39	36	1, A, iii, b
12282	Green Lane, Whitgreave	-	46	40	55	84	47	43	40	3, C, -, b
12283	Residential Mooring At Hoo Mill Basin, Great Haywood - Trent & Mersey Canal	-	51	44	56	79	54	51	44	5, C, -, b
12284	Hoo Mill, Great Haywood	-	55	48	56	79	55	54	48	4, A, -, b



## Appendix SV-002-002

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 level 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>7</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, $L_{pAeq,8hr}$
Main Road, Great Haywood	Increase in traffic flow	0.7	0.4
M6 Motorway	Increase in traffic flow	0.6	0.6

<sup>7</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 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>8</sup> and National Planning Practice Guidance<sup>9</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, and corrected where applicable using the values in Table 3.

### 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, Colwich to Yarlet (CA Report 2), 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>8</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>9</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, Colwich to Yarlet (CA Report 2), 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 to 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 Volume 5: 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 Volume 5: Appendix SV-001-000, 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

## Appendix SV-002-002

Symbol	Explanation
R	Type of receptor - residential
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 <sub>pAeq</sub> at the facade
L	Existing environment – low existing ambient noise levels, day and evening ≤45 dB, or night ≤35 dB L <sub>pAeq</sub> 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>10</sup>
TR	Mitigation effect - identified as likely to qualify for temporary rehousing under the Draft CoCP

<sup>10</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									
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	Significant effect
			Day 0700-2300	Night 2300-0700											
8353	Church Farm, Marston Lane	0.4	0.22/0.30	-	Underbridge piling platform	A	1	R	T	-	-	-	0.2	-	<sup>11</sup>
12007	Farmhouse at Moreton House Farm, Moreton	1.1	0.03/<0.8 <sup>12</sup>	-	Road construction	A	1	R	T	-	-	-	0.2	-	<sup>11</sup>
12032	Toldish Lane, Great Haywood	0.7	0.06/0.49	-	Road construction	A	6	R	T	-	-	-	0.75	-	<sup>11</sup>
12033	Toldish Lane, Great Haywood	2.1	0.03/<0.8	-	Road construction	A	5	R	T	-	-	-	0.75	-	<sup>11</sup>
12034	Farley Corner, Great Haywood	0.4	0.02/0.30	-	Site set-up/takedown	A	2	R	T	-	-	-	0.75	-	<sup>11</sup>
12036	Farley Corner, Great Haywood	0.5	0.32/0.40	-	Underground utility diversion	A	1	R	T	-	-	-	0.2	-	<sup>11</sup>
12066	Hoo Mill Lane, Great Haywood	1.9	0.03/<0.8 <sup>12</sup>	-	Underground utility diversion	A	2	R	T	-	-	-	0.2	-	<sup>11</sup>
12067	Hoo Mill Lane, Great Haywood	0.6	0.11/0.38	-	Road construction	A	2	R	T	-	-	-	1	-	~
12142	Lower Lane, Hopton	0.5	0.09/0.37	-	Underground utility diversion	A	5	R	T	-	-	-	0.2	-	<sup>11</sup>

<sup>11</sup> Impacts with durations of less than 1 month are not generally considered significant

<sup>12</sup> Construction methods will be selected to ensure that the on a monthly basis the significant adverse effect level is not exceeded

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											
12158	Bank Top House, Hopton	4.4	0.03/<0.8 <sup>12</sup>	-	Underground utility diversion	A	1	R	T	-	-	-	0.2	-	<sup>11</sup>
12168	Spode Avenue, Stafford	0.8	0.02/0.6	-	Road construction	A	6	R	T	-	-	-	1	-	~
12181	New Buildings Farm Cottage, Sandon Road, Hopton	1.4	0.02/<0.8 <sup>12</sup>	-	Underground utility diversion	A	1	R	T	-	-	-	0.2	-	<sup>11</sup>
12184	Marston Cottage, Marston	4.6	0.27/<0.8 <sup>12</sup>	-	Road construction	A	2	R	T	-	-	-	1	-	~
12190	Wayside, Marston	1.1	0.02/<0.8 <sup>12</sup>	-	Road construction	A	1	R	T	-	-	-	1	-	~
12208	Yarlet Lane, Marston	1	0.09/<0.8 <sup>12</sup>	-	Underground utility diversion	A	2	R	T	-	-	-	0.2	-	<sup>11</sup>
12210	Yarlet School, Yarlet: Houses On-Site Near Chapel	0.3	0.03/0.2	-	Underground utility diversion	A	1	R	T	-	-	-	0.2	-	<sup>11</sup>

*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 $L_{pAeq}$ [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											
8353	Church Farm, Marston Lane	62/67 [A]	-	-	Day: Haul road setup	A	1	R	T	-	-	D4	CT, V	-	CSV02-C05
12001	Upper Moreton Farm, Moreton	51/55 [A]	-	-	Day: Pond construction/planting	NA	1	R	T	-	-	-	-	-	
12003	Bishton Lane, Wolseley Bridge	57/61 [A]	-	-	Day: Overbridge pile breakdown	NA	1	R	T	-	-	-	-	-	
12004	Moreton Grange, Bishton Lane, Moreton	62/66 [A]	-	-	Day: ATS foundation	A	3	R	T	-	-	D4	-	-	CSV02-C01
12005	Bishton Lane, Wolseley Bridge	54/58 [A]	-	-	Day: On-site traffic	NA	4	R	T	-	-	-	-	-	
12007	Farmhouse at Moreton House Farm	62/67 [A]	-	-	Day: Earthworks	A	1	R	T	-	-	D9	V	-	CSV02-C01
12010	Tolldish Lane, Great Haywood	52/56 [A]	-	-	Day: Earthworks	NA	3	R	T	-	-	-	-	-	
12012	Coley Lane, Little Haywood	51/56 [A]	-	-	Day: On-site traffic	NA	1	R	T	-	-	-	-	-	
12013	Tolldish Lane, Great Haywood	50/54 [A]	-	-	Day: Earthworks	NA	1	R	T	-	-	-	-	-	
12016	Tolldish Lane, Great Haywood	49/53 [A]	-	-	Day: Earthworks	NA	1	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											
12017	Coley Lane, Little Haywood	52/56 [A]	-	-	Day: Earthworks	NA	2	R	T	-	-	-	-	-	
12018	Coley Lane, Little Haywood	49/54 [A]	-	-	Day: On-site traffic	NA	1	R	T	-	-	-	-	-	
12019	Coley Lane, Little Haywood	49/54 [A]	-	-	Day: Demolitions	NA	6	R	T	-	-	-	-	-	
12022	Toldish Lane, Great Haywood	51/55 [A]	-	-	Day: On-site traffic	NA	1	R	T	-	-	-	-	-	
12023	Toldish Lane, Great Haywood	52/56 [A]	-	-	Day: Earthworks	NA	6	R	T	-	-	-	-	-	
12024	Little Tixall Lane, Great Haywood	50/55 [A]	-	-	Day: Demolitions	NA	50	R	T	-	-	-	-	-	
12025	Farley Corner, Great Haywood	54/60 [A]	-	-	Day: Earthworks	NA	10	R	T	-	-	-	-	-	
12026	Oldfields Crescent, Great Haywood	55/60 [B]	-	-	Day: Demolitions	NA	25	R	T	-	-	-	-	-	
12027	Little Tixall Lane, Great Haywood	50/54 [A]	-	-	Day: Demolitions	NA	16	R	T	-	-	-	-	-	
12029	The Uplands, Great Haywood	47/51 [A]	-	-	Day: On-site traffic	NA	79	R	T	-	-	-	-	-	
12030	Oldfields Crescent, Great Haywood	51/56 [A]	-	-	Day: Demolitions	NA	30	R	T	-	-	-	-	-	
12031	Earlsway, Great Haywood	47/51 [A]	-	-	Day: On-site traffic	NA	41	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											
12032	Tolldish Lane, Great Haywood	64/70 [A]	-	-	Day: Earthworks	A	6	R	T	-	-	D18	V	-	CSV02-C02
12033	Tolldish Lane, Great Haywood	63/67 [A]	-	-	Day: Earthworks	A	5	R	T	-	-	D11	V	-	CSV02-C02
12034	Farley Corner, Great Haywood	58/64 [C]	-	-	Day: Site set-up/takedown	NA	2	R	T	-	-	-	-	-	
12035	Oldfields Crescent, Great Haywood	57/62 [A]	-	-	Day: Earthworks	NA	26	R	T	-	-	-	-	-	
12036	Farley Corner, Great Haywood	60/67 [C]	-	-	Day: Underground utility diversion	NA	1	R	T	-	-	-	-	-	
12037	Essex Drive, Great Haywood	49/53 [A]	-	-	Day: On-site traffic	NA	27	R	T	-	-	-	-	-	
12038	Little Tixall Lane, Great Haywood	47/51 [A]	-	-	Day: On-site traffic	NA	73	R	T	-	-	-	-	-	
12040	Little Tixall Lane, Great Haywood	48/52 [A]	-	-	Day: On-site traffic	NA	19	R	T	-	-	-	-	-	
12041	Essex Drive, Great Haywood	49/53 [A]	-	-	Day: On-site traffic	NA	18	R	T	-	-	-	-	-	
12042	Green Acres, Great Haywood	57/63 [A]	-	-	Day: Earthworks	NA	22	R	T	-	-	-	-	-	
12046	The Uplands, Great Haywood	45/50 [A]	-	-	Day: On-site traffic	NA	87	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											
12048	Manor Close, Great Haywood	47/51 [A]	-	-	Day: On-site traffic	NA	26	R	T	-	-	-	-	-	
12052	Church View, Great Haywood	44/49 [A]	-	-	Day: On-site traffic	NA	15	R	T	-	-	-	-	-	
12053	Hunters Close, Great Haywood	55/62 [A]	-	-	Day: Earthworks	NA	15	R	T	-	-	-	-	-	
12054	Mill Lane, Great Haywood	54/62 [A]	-	-	Day: Concrete batching plant	NA	34	R	T	-	-	-	-	-	
12055	Trent Close, Great Haywood	44/48 [A]	-	-	Day: Earthworks	NA	26	R	T	-	-	-	-	-	
12057	Elm Close, Great Haywood	51/58 [A]	-	-	Day: Concrete batching plant	NA	43	R	T	-	-	-	-	-	
12059	Trent Lane, Great Haywood	42/46 [A]	-	-	Day: On-site traffic	NA	22	R	T	-	-	-	-	-	
12060	Elm Close, Great Haywood	49/56 [A]	-	-	Day: Concrete batching plant	NA	14	R	T	-	-	-	-	-	
12064	Hoo Mill Lane, Great Haywood	56/62 [A]	-	-	Day: Underground utility diversion	NA	1	R	T	-	-	-	-	-	
12066	Hoo Mill Lane, Great Haywood	57/63 [A]	-	-	Day: Underground utility diversion	NA	2	R	T	-	-	-	-	-	
12067	Hoo Mill Lane, Great Haywood	63/68 [A]	-	-	Day: Earthworks	A	2	R	T	-	-	D11	V	-	~
12070	Ingestre Park Road, Ingestre	49/54 [A]	-	-	Day: Balancing pond construction	NA	9	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											
12071	Lion Lodge, Ingestre	58/64 [A]	-	-	Day: Road construction	NA	2	R	T	-	-	-	-	-	
12073	Home For The Disabled, Ingestre	50/55 [A]	-	-	Day: Earthworks	NA	7	R	T	-	-	-	-	-	
12074	Ingestre Manor Lodge, Ingestre	49/54 [A]	-	-	Day: Earthworks	NA	2	R	T	-	-	-	-	-	
12075	Tixall Court, Tixall	45/49 [A]	-	-	Day: Pond construction/planting	NA	13	R	T	-	-	-	-	-	
12076	Tixall Manor Farm, Tixall	50/55 [A]	-	-	Day: Vegetation clearance	NA	1	R	T	-	-	-	-	-	
12077	Tixall Court, Tixall	47/52 [A]	-	-	Day: Vegetation clearance	NA	4	R	T	-	-	-	-	-	
12078	Tixall Farmhouse, Tixall	48/53 [A]	-	-	Day: Vegetation clearance	NA	2	R	T	-	-	-	-	-	
12079	Meadow Cottage, Ingestre	51/57 [A]	-	-	Day: Earthworks	NA	5	R	T	-	-	-	-	-	
12080	Little Ingestre House Care Home, Ingestre	49/54 [A]	-	-	Day: Earthworks	NA	1	R	T	-	-	-	-	-	
12081	Rectory Cottage, Ingestre	51/56 [A]	-	-	Day: Earthworks	NA	5	R	T	-	-	-	-	-	
12082	The Old Rectory, Ingestre	51/57 [A]	-	-	Day: Earthworks	NA	4	R	T	-	-	-	-	-	
12083	The Lindens, Ingestre	48/54 [A]	-	-	Day: Earthworks	NA	1	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											
12084	Tixall Mews, Tixall	46/50 [A]	-	-	Day: Earthworks	NA	12	R	T	-	-	-	-	-	
12085	Home Farm Court, Ingestre	47/52 [A]	-	-	Day: Earthworks	NA	22	R	T	-	-	-	-	-	
12086	New Stables, Ingestre	50/55 [A]	-	-	Day: Earthworks	NA	4	R	T	-	-	-	-	-	
12089	Waterford House, Ingestre	47/52 [A]	-	-	Day: Earthworks	NA	1	R	T	-	-	-	-	-	
12090	The Old Stables, Ingestre	49/55 [A]	-	-	Day: Earthworks	NA	9	R	T	-	-	-	-	-	
12095	Park House, Hopton	47/52 [A]	-	-	Day: Earthworks	NA	1	R	T	-	-	-	-	-	
12097	Hanyards Lane, Tixall	53/58 [A]	-	-	Day: Earthworks	NA	2	R	T	-	-	-	-	-	
12098	Fiddlers Lodge, Hopton	48/53 [A]	-	-	Day: Earthworks	NA	1	R	T	-	-	-	-	-	
12102	Park Farm Barns, Weston Road, Stafford	69/76 [A]	-	-	Day: Earthworks	S	3	R	T	-	-	D36	-	NI	CSV02-C03
12103	Park Farm Barns / Park Farm, Weston Road, Stafford	68/76 [A]	-	-	Day: Earthworks	A	3	R	T	-	-	D4	-	NI	CSV02-C03
12109	Weston Road, Stafford	50/55 [B]	-	-	Day: Earthworks	NA	1	R	T	-	-	-	-	-	
12116	Weston Road, Stafford	59/63 [A]	-	-	Day: Earthworks	NA	1	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											
12119	Within Lane, Hopton	48/53 [A]	-	-	Day: Earthworks	NA	2	R	T	-	-	-	-	-	
12120	Wilmore Hill Lane, Hopton	56/60 [A]	-	-	Day: Earthworks	NA	2	R	T	-	-	-	-	-	
12121	Weston Road, Stafford	51/58 [A]	-	-	Day: Earthworks	NA	3	R	T	-	-	-	-	-	
12122	Wilmore Hill Lane, Hopton	49/54 [A]	-	-	Day: Haul road setup	NA	2	R	T	-	-	-	-	-	
12123	Battle Ridge, Hopton	50/55 [A]	-	-	Day: Haul road setup	NA	4	R	T	-	-	-	-	-	
12124	Battle Ridge, Hopton	57/62 [A]	-	-	Day: Earthworks	NA	6	R	T	-	-	-	-	-	
12125	Battle Ridge, Hopton	48/53 [A]	-	-	Day: Haul road setup	NA	5	R	T	-	-	-	-	-	
12126	Battle Ridge, Hopton	53/58 [A]	-	-	Day: Haul road setup	NA	4	R	T	-	-	-	-	-	
12127	Wilmore Hill Lane, Hopton	49/54 [A]	-	-	Day: Haul road setup	NA	9	R	T	-	-	-	-	-	
12128	Cromwell Close, Hopton	54/59 [A]	-	-	Day: Haul road setup	NA	4	R	T	-	-	-	-	-	
12129	Kings Drive, Hopton	58/62 [A]	-	-	Day: Underground utility diversion	NA	2	R	T	-	-	-	-	-	
12130	Wilmore Court, Hopton	48/53 [A]	-	-	Day: On-site traffic	NA	7	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											
12131	Kings Drive, Hopton	58/62 [A]	-	-	Day: Underground utility diversion	NA	4	R	T	-	-	-	-	-	
12132	Within Lane, Hopton	43/48 [A]	-	-	Day: Haul road setup	NA	21	R	T	-	-	-	-	-	
12133	Kings Drive, Hopton	54/59 [A]	-	-	Day: Earthworks	NA	8	R	T	-	-	-	-	-	
12134	Kings Drive, Hopton	58/62 [A]	-	-	Day: Underground utility diversion	NA	5	R	T	-	-	-	-	-	
12135	Ravensbank Farm, Hopton	42/46 [A]	-	-	Day: Haul road setup	NA	1	R	T	-	-	-	-	-	
12136	Kings Drive, Hopton	55/60 [A]	-	-	Day: Haul road setup	NA	5	R	T	-	-	-	-	-	
12137	Within Lane, Hopton	43/47 [A]	-	-	Day: On-site Traffic	NA	17	R	T	-	-	-	-	-	
12138	Within Lane, Hopton	43/48 [A]	-	-	Day: Haul road setup	NA	13	R	T	-	-	-	-	-	
12139	Hopton Hall Lane, Hopton	52/57 [A]	-	-	Day: Haul road setup	NA	3	R	T	-	-	-	-	-	
12140	Wilmore Hill Lane, Hopton	53/58 [A]	-	-	Day: Haul road setup	NA	9	R	T	-	-	-	-	-	
12141	Orchard Caravan Site, Hopton	44/49 [A]	-	-	Day: Haul road setup	NA	16	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											
12142	Lower Lane, Hopton	61/66 [A]	-	-	Day: Haul road setup	A	5	R	T	-	-	D4	V	-	CSV02-Co4
12143	Wilmore Hill Lane, Hopton	57/61 [A]	-	-	Day: Haul road setup	NA	4	R	T	-	-	-	-	-	
12144	Wilmore Hill Lane, Hopton	54/59 [A]	-	-	Day: Haul road setup	NA	5	R	T	-	-	-	-	-	
12145	Ravensbank Farm, Hopton	42/46 [A]	-	-	Day: Haul road setup	NA	5	R	T	-	-	-	-	-	
12146	Lower Lane, Hopton	60/64 [A]	-	-	Day: Haul road setup	NA	1	R	T	-	-	-	-	-	
12147	Within Lane, Hopton	47/50 [A]	-	-	Day: Haul road setup	NA	10	R	T	-	-	-	-	-	
12148	Wilmore Hill Lane, Hopton	58/63 [A]	-	-	Day: Underground utility diversion	NA	5	R	T	-	-	-	-	-	
12151	The Old Hall, Hopton	57/61 [A]	-	-	Day: Underground utility diversion	NA	6	R	T	-	-	-	-	-	
12152	Wilmore Hill Lane, Hopton	57/62 [A]	-	-	Day: Underground utility diversion	NA	2	R	T	-	-	-	-	-	
12153	Wilmore Hill Lane, Hopton	62/65 [A]	-	-	Day: Underground utility diversion	NA	1	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											
12156	Skeath Lane, Sandon Bank	48/53 [A]	-	-	Day: Haul road setup	NA	1	R	T	-	-	-	-	-	
12157	Ranslow Farm, Sandon Bank	50/55 [A]	-	-	Day: Haul road setup	NA	1	R	T	-	-	-	-	-	
12158	Bank Top House, Hopton	69/74 [A]	-	-	Day: Underground utility diversion	A	1	R	T	-	-	D12	V	-	CSV02-Co4
12159	Skeath Lane, Sandon Bank	47/52 [A]	-	-	Day: Haul road setup	NA	6	R	T	-	-	-	-	-	
12160	Ridgway Close, Stafford	58/63 [A]	-	-	Day: Earthworks	NA	5	R	T	-	-	-	-	-	
12161	Mount Edge, Hopton	62/66 [A]	-	-	Day: Earthworks	A	7	R	T	-	-	D9	-	-	~
12163	Mount Edge, Hopton	61/65 [A]	-	-	Day: Earthworks	A	3	R	T	-	-	D1	-	-	~
12164	Mount Edge, Hopton	66/70 [A]	-	-	Day: Demolitions	A	3	R	T	-	-	D10	-	-	CSV02-Co4
12166	Wedgwood Road, Hopton	50/53 [A]	-	-	Day: Earthworks	NA	12	R	T	-	-	-	-	-	
12167	Mount Edge, Hopton	58/64 [A]	-	-	Day: Earthworks	NA	3	R	T	-	-	-	-	-	
12168	Spode Avenue, Stafford	62/65 [A]	-	-	Day: Earthworks	A	6	R	T	-	-	D10	V	-	~
12169	Skeath Lane, Sandon Bank	47/52 [A]	-	-	Day: Haul road setup	NA	1	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											
12170	Spode Avenue, Stafford	63/65 [A]	-	-	Day: Earthworks	A	8	R	T	-	-	D9	-	-	~
12171	Sandon Road, Hopton	60/64 [A]	-	-	Day: Earthworks	NA	1	R	T	-	-	-	-	-	
12172	Sandon Road, Hopton	59/64 [A]	-	-	Day: Earthworks	NA	3	R	T	-	-	-	-	-	
12175	Marston Lane, Marston	51/56 [A]	-	-	Day: Demolitions	NA	1	R	T	-	-	-	-	-	
12176	Marston Lane, Marston	45/49 [A]	-	-	Day: Landscaping	NA	1	R	T	-	-	-	-	-	
12177	Marston Lane, Marston	54/59 [A]	-	-	Day: Earthworks	NA	1	R	T	-	-	-	-	-	
12178	Marston Lane, Marston	58/64 [A]	-	-	Day: Earthworks	NA	2	R	T	-	-	-	-	-	
12179	Sandon Road, Hopton	49/54 [A]	-	-	Day: Earthworks	NA	4	R	T	-	-	-	-	-	
12181	New Buildings Farm Cottage, Sandon Road, Hopton	62/66 [A]	-	-	Day: Underground utility diversion	A	1	R	T	-	-	D5	V	-	~
12182	Marston Villa, Marston	61/68 [A]	-	-	Day: Earthworks	A	3	R	T	-	-	D2	-	-	CSV02-C05
12183	Newbuildings Farm, Hopton	56/60 [A]	-	-	Day: Earthworks	NA	1	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											
12184	Marston Cottage, Marston	78/78 [A]	-	-	Day: Earthworks	S	2	R	T	-	-	D18	V	NI	CSV02-C05
12186	Enson Moor House, Enson	48/54 [A]	-	-	Day: Haul road setup	NA	1	R	T	-	-	-	-	-	
12188	Church Farm, Marston	67/70 [A]	-	-	Day: Earthworks	A	1	R	T	-	-	D11	CT	-	CSV02-C05
12189	Marston Lane, Marston	56/62 [A]	-	-	Day: Earthworks	NA	1	R	T	-	-	-	-	-	
12190	Wayside, Marston	67/69 [A]	-	-	Day: Earthworks	A	1	R	T	-	-	D11	CT, V	-	CSV02-C05
12191	Marston Lane, Marston	62/66 [A]	-	-	Day: Haul road setup	A	1	R	T	-	-	D3	-	-	CSV02-C05
12192	Yarlet Lane, Marston	72/74 [A]	-	-	Day: Demolitions	A	1	R	T	-	-	D9	-	-	CSV02-C05
12193	Yarlet Lane, Marston	64/68 [A]	-	-	Day: Haul road setup	A	1	R	T	-	-	D7	-	-	CSV02-C05
12197	Yarlet Lane, Marston	62/64 [A]	-	-	Day: Demolitions	NA	3	R	T	-	-	-	-	-	
12200	Yarlet Lane, Marston	62/67 [A]	-	-	Day: Demolitions	A	1	R	T	-	-	D2	-	-	~

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											
12202	Yarlet Lane, Marston	56/61 [A]	-	-	Day: Haul road setup	NA	1	R	T	-	-	-	-	-	
12203	Yarlet Lane, Marston	60/62 [A]	-	-	Day: Haul road setup	NA	2	R	T	-	-	-	-	-	
12205	Yarlet Lane, Marston	48/53 [A]	-	-	Day: On-site traffic	NA	1	R	T	-	-	-	-	-	
12206	Yarlet Lane, Marston	56/62 [A]	-	-	Day: Haul road setup	NA	1	R	T	-	-	-	-	-	
12207	Yarlet Hall Farm, Yarlet	47/52 [A]	-	-	Day: On-site traffic	NA	1	R	T	-	-	-	-	-	
12208	Yarlet Lane, Marston	56/59 [A]	-	-	Day: Haul road setup	NA	2	R	T	-	-	-	-	-	
12210	Yarlet School, Yarlet: Houses On-Site Near Chapel	33/39 [A]	-	-	Day: Underground utility diversion	NA	1	R	T	-	-	-	-	-	
12211	Yarlet Lane, Marston	53/56 [A]	-	-	Day: Haul road setup	NA	1	R	T	-	-	-	-	-	
12212	Glencoe Farm, Yarlet	48/54 [C]	-	-	Day: On-site traffic	NA	2	R	T	-	-	-	-	-	
12213	Stone Road, Yarlet	45/50 [A]	-	-	Day: Haul road setup	NA	1	R	T	-	-	-	-	-	
12214	Yarlet Hall Lodge, Yarlet	0/35 [A]	-	-	Day: Earthworks	NA	1	R	T	-	-	-	-	-	
12215	Yarlet Bank Farm, Yarlet	51/56 [B]	-	-	Day: On-site traffic	NA	1	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											
12216	Grove Farm, Yarlet	51/55 [B]	-	-	Day: On-site traffic	NA	1	R	T	-	-	-	-	-	
12218	Hill Top Farm, Yarlet	52/57 [C]	-	-	Day: On-site traffic	NA	1	R	T	-	-	-	-	-	
12219	The Old Vicarage, Yarlet	46/51 [C]	-	-	Day: On-site traffic	NA	1	R	T	-	-	-	-	-	
12221	33 Holding, Yarlet	45/50 [C]	-	-	Day: Haul road setup	NA	1	R	T	-	-	-	-	-	
12222	Stone Road, Yarlet	44/50 [B]	-	-	Day: Haul road setup	NA	3	R	T	-	-	-	-	-	
12223	30 Holding, Yarlet	44/50 [B]	-	-	Day: Haul road setup	NA	5	R	T	-	-	-	-	-	
12227	Green Lane, Whitgreave	44/49 [A]	-	-	Day: Landscaping	NA	3	R	T	-	-	-	-	-	
12229	Green Lane, Whitgreave	45/49 [A]	-	-	Day: Landscaping	NA	1	R	T	-	-	-	-	-	
12231	Green Lane, Whitgreave	44/49 [A]	-	-	Day: Landscaping	NA	3	R	T	-	-	-	-	-	
12232	Green Lane, Whitgreave	44/49 [A]	-	-	Day: Landscaping	NA	1	R	T	-	-	-	-	-	
12233	Green Lane, Whitgreave	46/51 [A]	-	-	Day: Landscaping	NA	14	R	T	-	-	-	-	-	
12248	Little Tixall Lane, Great Haywood (CD Ref.: 14/20886/OUT)	46/51 [A]	-	-	Day: On-site traffic	NA	77	CD-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											
12249	Little Tixall Lane, Great Haywood (CD Ref.: 14/21135/OUT)	47/52 [B]	-	-	Day: On-site traffic	NA	45	CD-R	T	-	-	-	-	-	
12251	Oldfields Crescent, Great Haywood	49/54 [A]	-	-	Day: On-site traffic	NA	27	R	T	-	-	-	-	-	
12253	Housing Allocation (CD Ref.: Policy Stafford 2 - North of Stafford)	51/57 [A]	-	-	Day: On-site traffic	NA	500	CD-R	T	-	-	-	-	-	
12283	Residential Mooring At Hoo Mill Basin, Great Haywood - Trent & Mersey Canal	47/52 [A]	-	-	Day: On-site traffic	NA	1	R	T	-	-	-	-	-	
12284	Hoo Mill, Great Haywood	47/52 [A]	-	-	Day: On-site traffic	NA	1	R	T	-	-	-	-	-	
12285	Elm Close, Great Haywood	46/51 [A]	-	-	Day: On-site traffic	NA	20	R	T	-	-	-	-	-	
12286	Grove Farm, Stone (CD Ref: 13/18299/FUL)	53/58 [A]	-	-	Day: On-site traffic	NA	1	CD-R	T	-	-	-	-	-	
12288	Yarlet Hall Cottages	49/54 [A]	-	-	Day: On-site traffic	NA	2	R	T	-	-	-	-	-	
12289	The Mill, Mill Lane, Great Haywood	46/51 [A]	-	-	Day: On-site traffic	NA	6	R	T	-	-	-	-	-	
12290	Rosemary Cottage, Moreton	60/65 [A]	-	-	Day: On-site traffic	NA	1	R	T	-	-	D4	-	-	CSV02-Co1

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											
12291	Hundred Acre Farm, Green Lane, Whitgreave	44/49 [A]	-	-	Day: On-site traffic	NA	1	R	T	-	-	-	-	-	
12292	Beacon Farm, Beaconside, Stafford	44/49 [A]	-	-	Day: On-site traffic	NA	3	R	T	-	-	-	-	-	

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

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]		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	
		Day 0700-1900	Night 2300-0700	Day 0700-1900	Night 2300-0700											
8438(N)	Park Farm, Stafford: Bed And Breakfast / Camp Site	61/68	-	21	-	Day: Earthworks	B	1	G4	T	-	-	D4	-	-	CSV02-No3
12002(N)	Upper Moreton Farm and Education Centre	52/56	-	10	-	Day: On-site traffic	B	1	G4	T	-	-	D21	-	-	CSV02-No1
12008(N)	Moreton House, Moreton	59/63	-	20	-	Day: Earthworks	B	1	G4	T	-	-	D36	-	-	CSV02-No2
12044(N)	Heywood Abbey Nursing Home	47/51	-	9	-	Day: On-site traffic	B	1	G4	T	-	-	-	-	-	
12049(N)	St Johns Roman Catholic Primary School	46/50	-	8	-	Day: On-site traffic	B	1	G4	T	-	-	-	-	-	
12051(N)	St John The Baptist Church, Great Haywood	45/49	-	4	-	Day: On-site traffic	B	1	G3	T	-	-	-	-	-	
12058(N)	Anson Church Of England Primary School	43/48	-	1	-	Day: On-site traffic	B	1	G4	T	-	-	-	-	-	
12087(N)	Ingestre Riding School And Stables, Ingestre	50/55	-	9	-	Day: Earthworks	B	1	G5	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]		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	
		Day 0700-1900	Night 2300-0700	Day 0700-1900	Night 2300-0700											
12092(N)	St Mary The Virgin Church, Ingestre	48/53	-	7	-	Day: Earthworks	B	1	G3	T	-	-	-	-	-	
12093(N)	Ingestre Hall, Ingestre	49/54	-	8	-	Day: Earthworks	B	1	G4	T	-	-	-	-	-	
12112(N)	Staffordshire County Showground, Offices/Suites	57/62	-	9	-	Day: Earthworks	B	1	G5	T	-	-	-	-	-	
12115(N)	MOD, Within Lane, Hopton	48/53	-	5	-	Day: Earthworks	B	1	G5	T	-	-	-	-	-	
12117(N)	MOD, Within Lane, Hopton	47/52	-	4	-	Day: Earthworks	B	1	G5	T	-	-	-	-	-	
12150(N)	St Peter's Church, Hopton	52/56	-	13	-	Day: Underground utility diversion	B	1	G3	T	-	-	D9	-	-	*
12165(N)	Hopton Barracks East	50/54	-	8	-	Day: Earthworks	B	1	G5	T	-	-	-	-	-	
12173(N)	Hopton Barracks West	50/54	-	11	-	Day: Earthworks	B	1	G5	T	-	-	-	-	-	
12194(N)	Saint Leonards Church, Marston	66/69	-	22	-	Day: Demolitions	B	1	G3	T	-	-	D7	-	-	*

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]		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	
		Day 0700-1900	Night 2300-0700	Day 0700-1900	Night 2300-0700											
12209(N)	Yarlet School, Yarlet: Main Building	50/55	-	4	-	Day: Demolitions	B	1	G4	T	-	-	-	-	-	
12252(N)	Roseacre Nursery (CD Ref.: Policy/Sa2/Roseacre/Nursery)	49/54	-	0	-	Day: On-site traffic	B	1	G4	T	-	-	-	-	-	
12255(N)	High Meadows Bed and Breakfast, Main Road, Great Haywood	44/49	-	2	-	Day: Earthworks	B	1	G4	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

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 (dBL <sub>A10,16 hour</sub> )			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		
Marston Lane	From the junction with the A513 past Marston Farm to the turning near Marston Cottages	11	46	51	55	4	8	O	CSV02-Co5
Hanyards Lane	From the junction with Tixall Road to the Proposed Scheme	4	44	50	55	5	11		
Pirehill Lane	From the junction with Whitgreave Lane in Whitgreave to the main body of Walton	45	44	51	54	7	10		CSV02-Co6

### **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 $L_{pAeq}$ [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						
8090(N)	Moreton Grange, Moreton	63/67	-	19	-	Day: ATS foundation	-	-	Y	-	-
8118(N)	Moreton House Farm	58/62	-	15	-	Day: ATS foundation	Y	-	-	-	-
8208(N)	Kent's Barn Farm, Hopton	61/65	-	20	-	Day: Earthworks	-	-	Y	-	-
8212(N)	Marston Farm, Marston Lane	57/63	-	17	-	Day: Earthworks	-	-	Y	-	-
8351(N)	Lowerhouse Farm, Hopton	61/66	-	22	-	Day: Haul road setup	-	-	Y	-	-
8433(N)	Canalside Farm Café & Shops, Mill Lane, Great Haywood	54/60	-	8	-	Day: Earthworks	-	-	-	-	Y
8438(N)	Park Farm, Stafford: Bed And Breakfast / Camp Site	61/68	-	21	-	Day: Earthworks	-	-	-	-	Y
8456(N)	Grange Farm, Yarlet	60/65	-	19	-	Day: Haul road setup	-	-	Y	-	-
8577(N)	Ingestre Hall, Ingestre	49/55	-	9	-	Day: Earthworks	-	-	Y	-	-
12002(N)	Upper Moreton Farm & Education Centre	52/56	-	10	-	Day: On-site traffic	-	Y	-	-	-
12008(N)	Moreton House, Moreton	59/63	-	20	-	Day: Earthworks	-	Y	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						
12044(N)	Heywood Abbey Nursing Home	47/51	-	9	-	Day: On-site traffic	-	Y	-	-	Y
12049(N)	St Johns Roman Catholic Primary School	46/50	-	8	-	Day: On-site traffic	-	Y	-	-	-
12050(N)	Abbey House, Great Haywood	48/51	-	9	-	Day: On-site traffic	-	-	Y	-	-
12051(N)	St John The Baptist Church, Great Haywood	45/49	-	4	-	Day: On-site traffic	-	Y	-	-	-
12056(N)	Marina, Hoo Mill Lock, Great Haywood	56/62	-	7	-	Day: Underground utility diversion	-	Y	-	-	-
12058(N)	Anson Church Of England Primary School	43/48	-	1	-	Day: On-site traffic	-	Y	-	-	-
12068(N)	Shugborough Hall: The Mansion	45/50	-	7	-	Day: Earthworks	-	-	Y	-	-
12087(N)	Ingestre Riding School And Stables, Ingestre	50/55	-	9	-	Day: Earthworks	-	Y	Y	-	Y
12092(N)	St Mary The Virgin Church, Ingestre	48/53	-	7	-	Day: Earthworks	-	Y	Y	-	Y
12093(N)	Ingestre Hall, Ingestre	49/54	-	8	-	Day: Earthworks	-	Y	Y	-	Y
12101(N)	Staffordshire County Showground, Horse Showing Ring	49/55	-	8	-	Day: Earthworks	-	-	-	-	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						
12106(N)	Staffordshire County Showground, North-Western Fields Near A518	49/54	-	3	-	Day: Earthworks	-	-	-	-	Y
12107(N)	Staffordshire County Showground, Indoor Showring And Annexes	61/66	-	18	-	Day: Earthworks	-	-	-	-	Y
12108(N)	Staffordshire County Showground, Main Outdoor Showring	52/57	-	8	-	Day: Earthworks	-	-	-	-	Y
12110(N)	Staffordshire County Showground, North-Western Fields Near A518	52/57	-	2	-	Day: Earthworks	-	-	-	-	Y
12111(N)	Staffordshire County Showground, Southern Fields Near Indoor Showring	63/69	-	22	-	Day: Earthworks	-	-	-	-	Y
12112(N)	Staffordshire County Showground, Offices/Suites	57/62	-	9	-	Day: Earthworks	-	-	-	-	Y
12113(N)	Staffordshire County Showground, Western Fields Near A518	66/68	-	11	-	Day: Earthworks	-	-	-	-	Y
12114(N)	Staffordshire County Showground, Southern Fields Near A518	67/71	-	15	-	Day: Earthworks	-	-	-	-	Y
12115(N)	MOD, Within Lane, Hopton	48/53	-	5	-	Day: Earthworks	-	-	-	-	-
12117(N)	MOD, Within Lane, Hopton	47/52	-	4	-	Day: Earthworks	-	-	-	-	-



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						
12150(N)	St Peter's Church, Hopton	52/56	-	13	-	Day: Underground utility diversion	-	Y	Y	-	-
12165(N)	Hopton Barracks East	50/54	-	8	-	Day: Earthworks	-	-	-	-	-
12173(N)	Hopton Barracks West	50/54	-	11	-	Day: Earthworks	-	-	-	-	-
12194(N)	Saint Leonards Church, Marston	66/69	-	22	-	Day: Demolitions	-	Y	Y	-	-
12209(N)	Yarlet School, Yarlet: Main Building	50/55	-	4	-	Day: Demolitions	-	Y	Y	-	-
12234(N)	Park Farm, Marston	55/60	-	15	-	Day: On-site traffic	Y	-	-	-	-
12236(N)	The Orangery, Ingestre Hall, Ingestre	45/50	-	5	-	Day: Earthworks	-	Y	-	-	-
12238(N)	Essex Bridge, Shugborough Estate	45/49	-	2	-	Day: Earthworks	-	-	Y	Y	-
12239(N)	Chinese House At Shugborough Hall	45/50	-	7	-	Day: Earthworks	-	-	Y	-	-
12240(N)	Staffordshire & Worcestershire Canal Great Haywood Canal Bridge 1 09	45/50	-	2	-	Day: Demolitions	-	-	Y	-	-
12241(N)	Staffordshire & Worcestershire Canal	45/50	-	8	-	Day: Earthworks	-	-	Y	-	-
12242(N)	Trent & Mersey Canal Middle Bridge 75	47/52	-	5	-	Day: On-site traffic	-	-	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						
12244(N)	Trent & Mersey Canal Hoomill Bridge 76	47/51	-	1	-	Day: On-site traffic	-	-	Y	-	-
12246(N)	Stables At Ingestre Hall, Ingestre	48/52	-	6	-	Day: On-site traffic	-	-	Y	-	-
12247(N)	Pavillion In Ingestre Park, Ingestre	48/52	-	6	-	Day: On-site traffic	-	-	Y	-	-
12252(N)	Roseacre Nursery (CD Ref.: Policy/Saz/Roseacre/Nursery)	49/54	-	0	-	Day: On-site traffic	-	Y	-	-	Y
12255(N)	High Meadows Bed and Breakfast, Main Road, Great Haywood	44/49	-	2	-	Day: Earthworks	-	-	-	-	Y
12260(N)	Tolldish Lane, Great Haywood	48/53	-	8	-	Day: On-site traffic	-	-	-	Y	-
12261(N)	Tolldish Lane, Great Haywood	53/58	-	13	-	Day: On-site traffic	-	-	-	Y	-
12262(N)	Bishton Lane, Wolseley Bridge	54/58	-	11	-	Day: On-site traffic	-	-	-	Y	-
12263(N)	Bishton Lane, Wolseley Bridge	51/55	-	9	-	Day: On-site traffic	-	-	-	Y	-
12264(N)	Hoo Mill Lane, Great Haywood	49/54	-	4	-	Day: On-site traffic	-	-	Y	Y	-
12265(N)	Hoo Mill Lane, Great Haywood	46/51	-	1	-	Day: Underground utility diversion	-	-	-	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						
12266(N)	Mill Lane, Great Haywood	47/53	-	9	-	Day: On-site traffic	-	-	Y	Y	-
12267(N)	Shugborough	45/49	-	2	-	Day: Earthworks	-	-	-	Y	-
12269(N)	Shugborough	45/49	-	6	-	Day: Earthworks	-	-	-	Y	-
12271(N)	Mill Lane, Great Haywood	45/50	-	7	-	Day: Earthworks	-	-	-	Y	-
12272(N)	Bottle Lodge, Tixall	44/49	-	8	-	Day: Earthworks	-	-	-	Y	-
12273(N)	Tixall Mews, Tixall	45/49	-	5	-	Day: Earthworks	-	-	-	Y	-
12274(N)	Hanyards Lane, Tixall	50/55	32/32	9	-	Day: On-site traffic Eve: On-site traffic	-	-	-	Y	-
12275(N)	Hanyards Lane, Tixall	51/57	-	11	-	Day: On-site traffic	-	-	-	Y	-
12276(N)	Park House, Hopton	46/49	-	3	-	Day: Earthworks	-	-	-	Y	-
12277(N)	Kings Drive, Hopton	49/54	-	13	-	Day: On-site traffic	-	-	-	Y	-
12278(N)	Wilmore Hill Lane, Hopton	48/53	-	10	-	Day: On-site traffic	-	-	-	Y	-
12279(N)	Sandon Road, Hopton	51/55	-	11	-	Day: On-site traffic	-	-	-	Y	-

Assessment location		Sound level information				Discipline					
Ref	Area represented	Typical/highest monthly outdoor $L_{pAeq}$ [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						
12280(N)	Yarlet Lane, Marston	45/50	-	4	-	Day: Haul road setup	-	-	-	Y	-
12281(N)	Yarlet Lane, Marston	47/53	-	9	-	Day: On-site traffic	-	-	-	Y	-
12282(N)	Green Lane, Whitgreave	51/56	-	7	-	Day: On-site traffic	-	-	-	Y	-
12293(N)	Great Haywood Marina, Trent & Mersey Canal	48/54	-	6	-	Day: On-site traffic	-	Y	-	-	Y
12294(N)	Canalside Moorings, Great Haywood, Trent & Mersey Canal	46/51	-	2	-	Day: On-site traffic	-	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.
- 5.1.3 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>13</sup>.
- 5.1.4 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>14</sup>.
- 5.1.5 In undertaking the assessment of sound, noise and vibration, consistent with EIA Directive<sup>8</sup> and National Planning Practice Guidance<sup>9</sup> a differentiation between impacts effects, adverse effects and significant effects is made. Further information is provided in Volume 5: Appendix SV-001-000.
- 5.1.6 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 in the Volume 5: Sound, Noise and Vibration Map Book.
- 5.1.7 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, Colwich to Yarlet (CA Report 2), Section 13.

#### Avoidance and mitigation measures

- 5.2.2 These are set out in Volume 2, Colwich to Yarlet (CA Report 2), Section 13.

<sup>13</sup> See Environmental Statement Volume 3, Route-wide effects

<sup>14</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 Volume 5: 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 Volume 5: 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 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														
8353	Church Farm, Marston Lane	-	0.07	0.03	-	1	NA	R	T	-	-	-	-	-	
12004	Moreton Grange, Bishton Lane, Moreton	-	0.04	0.02	-	3	NA	R	T	-	-	-	-	-	
12007	Farmhouse at Moreton House Farm, Moreton	-	0.05	0.02	-	1	NA	R	T	-	-	-	-	-	
12102	Park Farm Barns, Weston Road, Stafford	-	0.62	0.29	-	3	A	R	T	-	-	Y	-	OSV02-C05	
12103	Park Farm Barns / Park Farm, Weston Road, Stafford	-	0.16	0.08	-	3	NA	R	T	-	-	-	-	-	
12142	Lower Lane, Hopton	-	0.15	0.07	-	5	NA	R	T	-	-	-	-	-	
12164	Mount Edge, Hopton	-	0.05	0.02	-	3	NA	R	T	-	-	-	-	-	
12184	Marston Cottage, Marston	-	0.05	0.02	-	2	NA	R	T	-	-	-	-	-	
12214	Yarlet Hall Lodge, Yarlet	-	0.04	0.02	-	1	NA	R	T	-	-	-	-	-	
8438	Park Farm, Stafford: Bed and Breakfast / camp site	-	0.14	0.06	-	0	NA	G4	T	-	-	-	-	-	

### 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	0	0	0
Non-residential properties	0			0
	Number of ground-borne vibration impacts			
	Minor	Moderate	Major	Risk of building damage
Residential properties	0	3	0	0
Non-residential properties	0			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. Note that all committed developments (including ones for residential developments) are presented in Table 16. The results should be considered in conjunction with the information contained in Map Series SV-02 in the 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-002-002

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 <i>Proposed Scheme only</i> and ( <i>Opening year baseline + Year 15 traffic</i> ) 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 SV-001-000, 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	(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
H	High existing ambient sound level. Defined as $>65\text{dB}L_{Aeq, day}$ and/or $>55\text{dB}L_{Aeq, night}$
L	Low existing ambient sound level. Defined as $<42\text{dB}L_{Aeq, day}$ and/or $<32\text{dB}L_{Aeq, night}$
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 Volume 5: 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 G3 building use of 50 dB $L_{pAeq, 07:00-23:00}$ , for G4 building use 55 dB $L_{pAeq, 07:00-23:00}$ and 45 dB $L_{pAeq, 23:00-07:00}$ , for G5 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 **									
8353	Church Farm, Marston Lane	60	50	77/78	44	35	49	60	50	16	15	A	1	R	T	-	-	-	-	OSV02-Co8
12001	Upper Moreton Farm, Moreton	55	45	70/72	42	34	49	55	45	13	11	A	1	R	T	-	-	-	-	~
12003	Bishton Lane, Wolseley Bridge	53	43	69/70	44	34	43	53	44	9	10	A	1	R	T	-	-	-	-	OSV02-Co1
12004	Moreton Grange, Bishton Lane, Moreton	60	51	78/79	44	35	49	60	51	16	16	S	3	R	T	-	-	-	NI	OSV02-Co1/ OSV02-Do1
12005	Bishton Lane, Wolseley Bridge	52	42	70/71	40	33	45	52	43	12	10	A	4	R	T	-	-	-	-	OSV02-Co1
12007	Farmhouse at Moreton House Farm	59	49	75/76	40	33	45	59	50	19	17	A	1	R	T	-	-	-	-	OSV02-Co1
12010	Tolldish Lane, Great Haywood	44	34	58/59	41	31	44	46	36	5	5	A	3	R	T	-	-	-	-	#
12012	Coley Lane, Little Haywood	43	34	56/57	46	34	47	48	37	2	3	NA	1	R	T	-	-	-	-	#
12013	Tolldish Lane, Great Haywood	42	32	58/59	42	30	42	45	34	3	4	A	1	R	T	-	-	-	-	#
12016	Tolldish Lane, Great Haywood	44	34	59/60	40	34	46	45	37	5	3	A	1	R	T	-	-	-	-	#
12017	Coley Lane, Little Haywood	49	39	67/68	43	37	51	50	41	7	4	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 **									
12018	Coley Lane, Little Haywood	44	34	60/61	43	37	51	46	39	3	2	A	1	R	T	-	-	-	-	#
12019	Coley Lane, Little Haywood	43	33	59/60	45	38	53	47	39	2	1	A	6	R	T	-	-	-	-	
12022	Toldish Lane, Great Haywood	50	40	64/65	40	34	46	50	41	10	7	A	1	R	T	-	-	-	-	OSV02-Co2
12023	Toldish Lane, Great Haywood	52	42	65/66	40	34	46	52	42	12	8	A	6	R	T	-	-	-	-	OSV02-Co2
12024	Little Tixall Lane, Great Haywood	43	33	59/60	53	48	53	53	48	0	0	A	50	R	T	-	-	-	-	
12025	Farley Corner, Great Haywood	45	36	59/60	40	37	50	46	39	6	2	A	10	R	T	-	-	-	-	#
12026	Oldfields Crescent, Great Haywood	43	33	55/56	60	55	58	60	55	0	0	NA	25	R	T	H	-	-	-	
12027	Little Tixall Lane, Great Haywood	43	33	57/59	49	44	53	50	44	1	0	A	16	R	T	-	-	-	-	
12029	The Uplands, Great Haywood	40	31	55/57	37	32	53	42	34	5	2	NA	79	R	T	-	-	-	-	#
12030	Oldfields Crescent, Great Haywood	46	36	60/61	58	54	58	58	54	0	0	A	30	R	T	-	-	-	-	
12031	Earlsway, Great Haywood	44	34	59/60	48	44	53	49	44	1	0	A	41	R	T	-	-	-	-	
12032	Toldish Lane, Great Haywood	54	44	69/70	56	51	53	58	52	2	1	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 **									
12033	Tolldish Lane, Great Haywood	51	42	66/67	58	53	58	59	53	1	0	A	5	R	T	-	-	-	-	
12034	Farley Corner, Great Haywood	48	38	61/63	65	60	62	65	60	0	0	A	2	R	T	H	-	-	-	
12035	Oldfields Crescent, Great Haywood	47	38	61/63	58	53	58	58	53	0	0	A	26	R	T	-	-	-	-	
12036	Farley Corner, Great Haywood	50	40	64/65	65	60	63	65	60	0	0	A	1	R	T	H	-	-	-	
12037	Essex Drive, Great Haywood	44	34	58/60	42	37	53	46	39	4	2	A	27	R	T	-	-	-	-	#
12038	Little Tixall Lane, Great Haywood	42	32	56/57	39	37	50	43	38	4	1	NA	73	R	T	-	-	-	-	#
12040	Little Tixall Lane, Great Haywood	42	33	58/59	39	37	50	44	38	5	1	A	19	R	T	-	-	-	-	#
12041	Essex Drive, Great Haywood	44	35	59/60	47	37	50	49	39	2	2	A	18	R	T	-	-	-	-	
12042	Green Acres, Great Haywood	46	37	62/63	47	37	50	50	40	3	3	A	22	R	T	-	-	-	-	#
12046	The Uplands, Great Haywood	40	30	54/55	36	30	50	41	33	5	3	NA	87	R	T	-	-	-	-	#
12048	Manor Close, Great Haywood	42	32	58/60	39	37	50	44	38	5	1	A	26	R	T	-	-	-	-	#
12052	Church View, Great Haywood	39	30	55/56	38	31	50	42	33	4	2	NA	15	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 **									
12053	Hunters Close, Great Haywood	46	36	62/64	45	38	50	48	40	3	2	A	15	R	T	-	-	-	-	#
12054	Mill Lane, Great Haywood	45	35	61/63	47	40	50	49	41	2	1	A	34	R	T	-	-	-	-	
12055	Trent Close, Great Haywood	41	31	57/58	48	39	50	49	40	1	1	A	26	R	T	-	-	-	-	
12057	Elm Close, Great Haywood	44	34	60/61	46	39	50	48	40	2	1	A	43	R	T	-	-	-	-	
12059	Trent Lane, Great Haywood	40	30	56/57	54	47	51	54	47	0	0	NA	22	R	T	-	-	-	-	
12060	Elm Close, Great Haywood	43	34	60/61	53	46	51	53	46	0	0	A	14	R	T	-	-	-	-	
12064	Hoo Mill Lane, Great Haywood	53	44	69/70	41	35	51	54	44	13	9	A	1	R	T	-	-	-	-	OSV02-Co3
12066	Hoo Mill Lane, Great Haywood	55	45	71/72	46	39	49	56	46	10	7	A	2	R	T	-	-	-	-	OSV02-Co3
12067	Hoo Mill Lane, Great Haywood	57	48	74/76	46	39	49	58	48	12	9	A	2	R	T	-	-	-	-	OSV02-Co3
12070	Ingestre Park Road, Ingestre	45	35	60/61	43	35	47	47	38	4	3	A	9	R	T	-	-	-	-	#
12071	Lion Lodge, Ingestre	54	44	70/72	43	35	47	55	45	12	10	A	2	R	T	-	-	-	-	OSV02-Co3
12073	Home For The Disabled, Ingestre	45	36	60/62	43	35	47	47	38	4	3	A	7	R	T	-	-	-	-	#
12074	Ingestre Manor Lodge, Ingestre	44	34	57/59	43	35	47	47	38	4	3	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 **									
12075	Tixall Court, Tixall	52	42	67/68	44	35	50	52	43	8	8	A	13	R	T	-	-	-	-	OSV02-Co4
12076	Tixall Manor Farm, Tixall	57	47	71/72	44	35	50	57	47	13	12	A	1	R	T	-	-	-	-	OSV02-Co4
12077	Tixall Court, Tixall	52	43	67/69	44	35	50	53	43	9	8	A	4	R	T	-	-	-	-	OSV02-Co4
12078	Tixall Farmhouse, Tixall	52	42	66/68	44	35	50	53	43	9	8	A	2	R	T	-	-	-	-	OSV02-Co4
12079	Meadow Cottage, Ingestre	47	38	62/63	43	35	47	49	39	6	4	A	5	R	T	-	-	-	-	#
12080	Little Ingestre House Care Home, Ingestre	46	36	60/62	43	35	47	48	39	5	4	A	1	R	T	-	-	-	-	#
12081	Rectory Cottage, Ingestre	46	36	61/62	43	35	47	48	39	5	4	A	5	R	T	-	-	-	-	#
12082	The Old Rectory, Ingestre	47	37	62/63	43	35	47	48	39	5	4	A	4	R	T	-	-	-	-	#
12083	The Lindens, Ingestre	42	32	57/59	43	35	47	46	37	3	2	A	1	R	T	-	-	-	-	#
12084	Tixall Mews, Tixall	40	30	53/54	44	39	50	45	40	1	1	NA	12	R	T	-	-	-	-	
12085	Home Farm Court, Ingestre	41	32	56/58	43	35	47	45	37	2	2	A	22	R	T	-	-	-	-	
12086	New Stables, Ingestre	44	34	59/60	43	35	47	47	38	4	3	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 **									
12089	Waterford House, Ingestre	40	31	54/55	43	35	47	45	36	2	1	NA	1	R	T	-	-	-	-	
12090	The Old Stables, Ingestre	44	34	58/59	43	35	47	46	38	3	3	A	9	R	T	-	-	-	-	#
12095	Park House, Hopton	46	36	60/61	47	38	49	49	40	2	2	A	1	R	T	-	-	-	-	
12097	Hanyards Lane, Tixall	51	41	67/68	47	41	53	52	44	5	3	A	2	R	T	-	-	-	-	~
12098	Fiddlers Lodge, Hopton	47	38	63/64	47	38	49	50	41	3	3	A	1	R	T	-	-	-	-	#
12102	Park Farm Barns, Weston Road, Stafford	66	57	85/86	44	36	46	66	57	22	21	S	3	R	T	-	-	V	NI	OSV02-C05/ OSV02-D03
12103	Park Farm Barns / Park Farm, Weston Road, Stafford	62	52	79/81	44	36	46	62	53	18	17	S	3	R	T	-	-	V	NI	OSV02-C05/ OSV02-D03
12109	Weston Road, Stafford	47	37	63/64	63	57	58	63	57	0	0	A	1	R	T	H	-	-	-	
12116	Weston Road, Stafford	53	46	69/71	57	51	58	58	51	1	0	A	1	R	T	-	-	-	-	
12119	Within Lane, Hopton	42	32	55/56	46	36	49	47	37	1	1	NA	2	R	T	-	-	-	-	
12120	Wilmore Hill Lane, Hopton	47	37	60/62	40	39	43	48	41	8	2	A	2	R	T	-	-	-	-	#
12121	Weston Road, Stafford	48	38	64/66	44	39	50	49	41	5	2	A	3	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 **									
12122	Wilmore Hill Lane, Hopton	42	32	55/56	46	36	49	47	38	1	2	NA	2	R	T	-	-	-	-	
12123	Battle Ridge, Hopton	49	39	64/66	40	35	47	50	41	10	6	A	4	R	T	-	-	-	-	#
12124	Battle Ridge, Hopton	51	41	66/67	40	35	47	51	42	11	7	A	6	R	T	-	-	-	-	OSV02-Co6
12125	Battle Ridge, Hopton	48	38	62/63	40	35	47	49	40	9	5	A	5	R	T	-	-	-	-	#
12126	Battle Ridge, Hopton	50	40	65/66	40	35	47	50	41	10	6	A	4	R	T	-	-	-	-	OSV02-Co6
12127	Wilmore Hill Lane, Hopton	47	37	61/62	40	35	47	48	39	8	4	A	9	R	T	-	-	-	-	#
12128	Cromwell Close, Hopton	50	40	65/66	40	35	47	50	41	10	6	A	4	R	T	-	-	-	-	OSV02-Co6
12129	Kings Drive, Hopton	52	42	67/68	40	35	47	52	43	12	8	A	2	R	T	-	-	-	-	OSV02-Co6
12130	Wilmore Court, Hopton	47	37	61/63	40	35	47	48	39	8	4	A	7	R	T	-	-	-	-	#
12131	Kings Drive, Hopton	52	42	67/68	40	35	47	52	43	12	8	A	4	R	T	-	-	-	-	OSV02-Co6
12132	Within Lane, Hopton	41	31	54/55	44	41	51	46	41	2	0	NA	21	R	T	-	-	-	-	
12133	Kings Drive, Hopton	51	41	65/67	40	35	47	51	42	11	7	A	8	R	T	-	-	-	-	OSV02-Co6
12134	Kings Drive, Hopton	52	43	67/69	40	35	47	53	43	13	8	A	5	R	T	-	-	-	-	OSV02-Co6



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 **									
12135	Ravensbank Farm, Hopton	38	28	53/54	44	41	51	45	41	1	0	NA	1	R	T	-	-	-	-	
12136	Kings Drive, Hopton	52	42	66/68	40	35	47	52	43	12	8	A	5	R	T	-	-	-	-	OSV02-Co6
12137	Within Lane, Hopton	41	31	55/56	44	41	51	46	41	2	0	NA	17	R	T	-	-	-	-	
12138	Within Lane, Hopton	42	32	55/56	44	41	51	46	42	2	1	NA	13	R	T	-	-	-	-	
12139	Hopton Hall Lane, Hopton	49	39	63/65	40	35	47	49	41	9	6	A	3	R	T	-	-	-	-	#
12140	Wilmore Hill Lane, Hopton	51	41	65/67	40	35	47	51	42	11	7	A	9	R	T	-	-	-	-	OSV02-Co6
12141	Orchard Caravan Site, Hopton	40	30	55/56	44	41	51	45	41	1	0	NA	16	R	T	-	-	-	-	
12142	Lower Lane, Hopton	56	47	71/73	41	39	48	57	47	16	8	A	5	R	T	-	-	-	-	OSV02-Co6
12143	Wilmore Hill Lane, Hopton	53	43	68/69	40	35	47	53	44	13	9	A	4	R	T	-	-	-	-	OSV02-Co6
12144	Wilmore Hill Lane, Hopton	52	43	67/68	40	35	47	52	43	12	8	A	5	R	T	-	-	-	-	OSV02-Co6
12145	Ravensbank Farm, Hopton	38	29	54/55	44	41	51	45	41	1	0	NA	5	R	T	-	-	-	-	
12146	Lower Lane, Hopton	55	45	70/72	40	35	47	55	46	15	11	A	1	R	T	-	-	-	-	OSV02-Co6
12147	Within Lane, Hopton	43	33	56/57	44	41	51	46	42	2	1	NA	10	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 **									
12148	Wilmore Hill Lane, Hopton	54	44	69/71	40	35	47	54	45	14	10	A	5	R	T	-	-	-	-	OSV02-Co6
12151	The Old Hall, Hopton	52	42	66/67	40	35	47	52	43	12	8	A	6	R	T	-	-	-	-	OSV02-Co6
12152	Wilmore Hill Lane, Hopton	53	44	68/70	40	35	47	53	44	13	9	A	2	R	T	-	-	-	-	OSV02-Co6
12153	Wilmore Hill Lane, Hopton	56	46	71/72	40	35	47	56	47	16	12	A	1	R	T	-	-	-	-	OSV02-Co6
12156	Skeath Lane, Sandon Bank	39	29	58/59	44	39	53	45	39	1	0	A	1	R	T	-	-	-	-	
12157	Ranslow Farm, Sandon Bank	43	33	60/61	44	39	53	46	40	2	1	A	1	R	T	-	-	-	-	
12158	Bank Top House, Hopton	62	53	80/81	44	41	51	62	53	18	12	S	1	R	T	-	-	-	NI	OSV02-Co6/ OSV02-Do5
12159	Skeath Lane, Sandon Bank	41	31	60/62	44	39	53	46	40	2	1	A	6	R	T	-	-	-	-	
12160	Ridgway Close, Stafford	49	39	64/65	44	39	49	50	42	6	3	A	5	R	T	-	-	-	-	#
12161	Mount Edge, Hopton	52	42	68/69	44	39	49	53	44	9	5	A	7	R	T	-	-	-	-	OSV02-Co7
12163	Mount Edge, Hopton	54	44	70/71	44	39	49	54	45	10	6	A	3	R	T	-	-	-	-	OSV02-Co7
12164	Mount Edge, Hopton	57	47	73/74	44	39	49	57	48	13	9	A	3	R	T	-	-	-	-	OSV02-Co7

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 **									
12166	Wedgwood Road, Hopton	47	37	61/63	44	39	49	49	41	5	2	A	12	R	T	-	-	-	-	#
12167	Mount Edge, Hopton	52	43	72/73	44	39	49	52	43	8	4	A	3	R	T	-	-	-	-	OSV02-Co7
12168	Spode Avenue, Stafford	50	41	71/72	44	39	49	50	42	6	3	A	6	R	T	-	-	-	-	OSV02-Co7
12169	Skeath Lane, Sandon Bank	44	34	61/62	44	39	53	47	40	3	1	A	1	R	T	-	-	-	-	#
12170	Spode Avenue, Stafford	49	40	71/72	44	39	49	49	40	5	1	A	8	R	T	-	-	-	-	#
12171	Sandon Road, Hopton	53	44	70/72	41	37	45	53	44	12	7	A	1	R	T	-	-	-	-	~
12172	Sandon Road, Hopton	55	45	69/70	41	37	45	55	46	14	9	A	3	R	T	-	-	-	-	~
12175	Marston Lane, Marston	50	40	69/70	42	42	51	51	44	9	2	A	1	R	T	-	-	-	-	OSV02-Co8
12176	Marston Lane, Marston	47	37	62/63	42	42	51	48	43	6	1	A	1	R	T	-	-	-	-	#
12177	Marston Lane, Marston	51	42	70/71	44	35	49	52	43	8	8	A	1	R	T	-	-	-	-	OSV02-Co8
12178	Marston Lane, Marston	53	43	71/73	44	35	49	53	44	9	9	A	2	R	T	-	-	-	-	OSV02-Co8
12179	Sandon Road, Hopton	39	29	53/55	58	52	54	58	52	0	0	NA	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 **									
12181	New Buildings Farm Cottage, Sandon Road, Hopton	65	55	83/84	45	41	46	65	56	20	15	S	1	R	T	-	-	-	NI	OSV02-Do6
12182	Marston Villa, Marston	57	48	74/76	44	35	49	57	48	13	13	A	3	R	T	-	-	-	-	OSV02-Co8
12183	Newbuildings Farm, Hopton	53	43	71/72	47	43	52	54	46	7	3	A	1	R	T	-	-	-	-	~
12184	Marston Cottage, Marston	60	50	77/78	47	35	49	60	50	13	15	A	2	R	T	-	-	-	-	OSV02-Co8
12186	Enson Moor House, Enson	46	36	61/63	41	36	48	47	39	6	3	A	1	R	T	-	-	-	-	#
12188	Church Farm, Marston	58	49	75/77	44	35	49	58	49	14	14	A	1	R	T	-	-	-	-	OSV02-Co8
12189	Marston Lane, Marston	57	47	75/76	42	42	51	57	48	15	6	A	1	R	T	-	-	-	-	OSV02-Co8
12190	Wayside, Marston	56	47	74/75	44	35	49	56	47	12	12	A	1	R	T	-	-	-	-	OSV02-Co8
12191	Marston Lane, Marston	55	46	74/75	42	42	51	56	47	14	5	A	1	R	T	-	-	-	-	OSV02-Co8
12192	Yarlet Lane, Marston	59	49	75/76	44	35	49	59	49	15	14	A	1	R	T	-	-	-	-	OSV02-Co8
12193	Yarlet Lane, Marston	53	44	70/71	44	35	49	54	44	10	9	A	1	R	T	-	-	-	-	OSV02-Co8
12197	Yarlet Lane, Marston	57	47	72/73	43	38	50	57	48	14	10	A	3	R	T	-	-	-	-	OSV02-Co8

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 **									
12200	Yarlet Lane, Marston	59	50	75/77	43	38	50	60	50	17	12	A	1	R	T	-	-	-	-	OSV02-Co8
12202	Yarlet Lane, Marston	56	46	70/71	43	38	50	56	47	13	9	A	1	R	T	-	-	-	-	OSV02-Co8
12203	Yarlet Lane, Marston	57	48	72/73	43	38	50	58	48	15	10	A	2	R	T	-	-	-	-	OSV02-Co8
12205	Yarlet Lane, Marston	53	43	68/69	43	38	50	53	44	10	6	A	1	R	T	-	-	-	-	OSV02-Co8
12206	Yarlet Lane, Marston	59	49	74/75	41	36	50	59	49	18	13	A	1	R	T	-	-	-	-	OSV02-Co8
12207	Yarlet Hall Farm, Yarlet	48	38	64/66	40	34	58	49	40	9	6	A	1	R	T	-	-	-	-	#
12208	Yarlet Lane, Marston	56	46	72/73	45	37	50	56	47	11	10	A	2	R	T	-	-	-	-	OSV02-Co8
12210	Yarlet School, Yarlet: Houses On-Site Near Chapel	50	40	67/68	47	41	58	52	44	5	3	A	1	R	T	-	-	-	-	~
12211	Yarlet Lane, Marston	54	45	72/73	50	45	58	56	48	6	3	A	1	R	T	-	-	-	-	OSV02-Co8
12212	Glencoe Farm, Yarlet	53	43	70/71	66	59	67	66	59	0	0	A	2	R	T	H	-	-	-	
12213	Stone Road, Yarlet	42	32	56/57	41	37	58	45	38	4	1	NA	1	R	T	-	-	-	-	#
12214	Yarlet Hall Lodge, Yarlet	58	49	75/76	57	52	67	61	54	4	2	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 **									
12215	Yarlet Bank Farm, Yarlet	55	45	72/73	62	56	67	63	56	1	0	A	1	R	T	H	-	-	-	
12216	Grove Farm, Yarlet	55	45	71/72	63	58	67	64	58	1	0	A	1	R	T	H	-	-	-	
12218	Hill Top Farm, Yarlet	55	45	71/72	68	63	67	68	63	0	0	A	1	R	T	H	-	-	-	
12219	The Old Vicarage, Yarlet	49	39	67/68	68	63	67	68	63	0	0	A	1	R	T	H	-	-	-	
12221	33 Holding, Yarlet	46	36	63/64	67	62	67	67	62	0	0	A	1	R	T	H	-	-	-	
12222	Stone Road, Yarlet	44	35	60/62	63	59	67	63	59	0	0	A	3	R	T	H	-	-	-	
12223	30 Holding, Yarlet	40	31	56/57	62	58	67	62	58	0	0	NA	5	R	T	H	-	-	-	
12227	Green Lane, Whitgreave	35	26	49/50	46	39	55	46	39	0	0	NA	3	R	T	-	-	-	-	
12229	Green Lane, Whitgreave	42	32	56/57	37	31	55	43	35	6	4	NA	1	R	T	-	-	-	-	#
12231	Green Lane, Whitgreave	36	27	51/52	44	36	59	45	36	1	0	NA	3	R	T	-	-	-	-	
12232	Green Lane, Whitgreave	47	37	64/65	47	40	59	50	42	3	2	A	1	R	T	-	-	-	-	#
12233	Green Lane, Whitgreave	56	47	71/72	55	54	59	59	54	4	1	A	14	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 **									
12248	Little Tixall Lane, Great Haywood (CD Ref.: 14/20886/OUT)	42	32	59/60	52	47	53	52	47	0	0	A	77	CD-R	T	-	-	-	-	
12249	Little Tixall Lane, Great Haywood (CD Ref.: 14/21135/OUT)	44	34	60/61	59	55	58	59	55	0	0	A	45	CD-R	T	H	-	-	-	
12251	Oldfields Crescent, Great Haywood	48	39	63/65	53	47	50	54	48	1	1	A	27	R	T	-	-	-	-	
12253	Housing Allocation (CD Ref.: Policy Stafford 2 - North of Stafford)	58	48	75/76	45	41	46	58	49	13	8	A	500	CD-R	T	-	-	-	-	~
12283	Residential Mooring At Hoo Mill Basin, Great Haywood - Trent & Mersey Canal	52	42	67/68	51	44	56	55	46	4	2	A	0	R	T	-	-	-	-	~
12284	Hoo Mill, Great Haywood	49	39	64/65	55	48	56	56	49	1	1	A	1	R	T	-	-	-	-	
12285	Elm Close, Great Haywood	44	35	61/63	52	45	51	53	45	1	0	A	20	R	T	-	-	-	-	
12286	Grove Farm, Stone (CD Ref: 13/18299/FUL)	57	47	72/73	63	58	67	64	58	1	0	A	1	CD-R	T	H	-	-	-	
12288	Yarlet Hall Cottages	49	39	67/68	40	34	58	50	41	10	7	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 **									
12289	The Mill, Mill Lane, Great Haywood	48	38	64/66	48	40	51	51	42	3	2	A	6	R	T	-	-	-	-	#
12290	Rosemary Cottage, Moreton	63	54	83/84	44	34	43	64	54	20	20	S	1	R	T	-	-	-	NI	OSV02-Co1/ OSV02-Do2
12291	Hundred Acre Farm, Green Lane, Whitgreave	46	37	61/63	47	40	59	50	42	3	2	A	1	R	T	-	-	-	-	#
12292	Beacon Farm, Beaconside, Stafford	36	26	53/54	44	39	50	45	39	1	0	NA	3	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 **										
8438(N)	Park Farm, Stafford: Bed And Breakfast / Camp Site	62	52	81/82	44	36	46	62	52	18	16	B	1	G4	T	-	-	-	-	OSV02-No3	
12002(N)	Upper Moreton Farm & Education Centre	55	46	71/73	42	34	49	55	46	13	12	B	1	G4	T	-	-	-	-	OSV02-No1	
12008(N)	Moreton House, Moreton	58	48	74/75	40	33	45	58	48	18	15	B	1	G4	T	-	-	-	-	OSV02-No2	
12044(N)	Heywood Abbey Nursing Home	43	33	58/59	39	37	50	44	38	5	1	B	1	G4	T	-	-	-	-		
12049(N)	St Johns Roman Catholic Primary School	41	31	57/58	39	32	50	43	35	4	3	B	1	G4	T	-	-	-	-		
12051(N)	St John The Baptist Church, Great Haywood	41	31	56/58	43	35	50	45	37	2	2	B	1	G3	T	-	-	-	-		
12058(N)	Anson Church Of England Primary School	40	30	55/56	47	39	50	48	40	1	1	B	1	G4	T	-	-	-	-		
12087(N)	Ingestre Riding School And Stables, Ingestre	44	34	59/60	43	35	47	47	38	4	3	B	1	G5	T	-	-	-	-		
12092(N)	St Mary The Virgin Church, Ingestre	43	33	57/58	43	35	47	46	37	3	2	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 **									
12093(N)	Ingestre Hall, Ingestre	43	33	57/58	43	35	47	46	37	3	2	B	1	G4	T	-	-	-	-	
12112(N)	Staffordshire County Showground, Offices/Suites	56	46	71/72	50	42	50	57	48	7	6	B	1	G5	T	-	-	-	-	*
12115(N)	Mod, Within Lane, Hopton	41	31	57/58	46	36	49	47	37	1	1	B	1	G5	T	-	-	-	-	
12117(N)	Mod, Within Lane, Hopton	40	30	55/56	46	36	49	47	37	1	1	B	1	G5	T	-	-	-	-	
12150(N)	St Peter's Church, Hopton	52	42	67/68	40	35	47	52	43	12	8	B	1	G3	T	-	-	-	-	*
12165(N)	Hopton Barracks East	46	37	63/64	44	39	49	48	41	4	2	B	1	G5	T	-	-	-	-	
12173(N)	Hopton Barracks West	39	29	59/60	40	35	50	42	36	2	1	B	1	G5	T	-	-	-	-	
12194(N)	Saint Leonards Church, Marston	53	44	69/70	44	35	49	54	44	10	9	B	1	G3	T	-	-	-	-	OSV02-No4
12209(N)	Yarlet School, Yarlet: Main Building	51	41	70/71	50	43	58	54	45	4	2	B	1	G4	T	-	-	-	-	*
12252(N)	Roseacre Nursery (CD Ref.: Policy/SA2/Roseacre/Nursery)	49	39	63/64	62	57	58	62	57	0	0	B	1	G4	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 **									
12255(N)	High Meadows Bed and Breakfast, Main Road, Great Haywood	42	33	59/60	48	39	53	49	40	1	1	B	1	G4	T	-	-	-	-	

### *Airborne sound 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	Number above LOAEL	Number above SOAEL	Number of impacts (number of impacts excluding those part of committed developments)		
			Minor	Moderate	Major
Residential properties	201 (704)	14 (14)	15 (15)	44 (44)	145 (646)
Non-residential properties	N/A	N/A			4 (4)
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 and visual	Socio-economic
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **					
8090(N)	Moreton Grange, Moreton	61	51	78/80	44	35	49	61	51	17	16	-	-	Y	-	-
8118(N)	Moreton House Farm	58	48	76/78	44	34	43	58	49	14	15	Y	-	-	-	-
8208(N)	Kent's Barn Farm, Hopton	54	45	68/69	41	37	45	55	45	14	8	-	-	Y	-	-
8212(N)	Marston Farm, Marston Lane	57	47	75/76	42	42	51	57	48	15	6	-	-	Y	-	-
8351(N)	Lowerhouse Farm, Hopton	57	47	72/73	41	39	48	57	47	16	8	-	-	Y	-	-
8433(N)	Canalside Farm Café & Shops, Mill Lane, Great Haywood	49	39	66/67	47	39	51	51	42	4	3	-	-	-	-	Y
8438(N)	Park Farm, Stafford: Bed And Breakfast / Camp Site	62	52	81/82	44	36	46	62	52	18	16	-	-	-	-	Y
8456(N)	Grange Farm, Yarlet	57	47	72/73	43	38	50	57	48	14	10	-	-	Y	-	-
8577(N)	Ingestre Hall, Ingestre	43	33	57/58	43	35	47	46	37	3	2	-	-	Y	-	-
12002(N)	Upper Moreton Farm & Education Centre	55	46	71/73	42	34	49	55	46	13	12	-	Y	-	-	-
12008(N)	Moreton House, Moreton	58	48	74/75	40	33	45	58	48	18	15	-	Y	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 and visual	Socio-economic
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **					
12044(N)	Heywood Abbey Nursing Home	43	33	58/59	39	37	50	44	38	5	1	-	Y	-	-	Y
12049(N)	St Johns Roman Catholic Primary School	41	31	57/58	39	32	50	43	35	4	3	-	Y	-	-	-
12050(N)	Abbey House, Great Haywood	43	33	59/60	39	37	50	45	39	6	2	-	-	Y	-	-
12051(N)	St John The Baptist Church, Great Haywood	41	31	56/58	43	35	50	45	37	2	2	-	Y	-	-	-
12056(N)	Marina, Hoo Mill Lock, Great Haywood	51	41	66/67	51	44	56	54	46	3	2	-	Y	-	-	-
12058(N)	Anson Church Of England Primary School	40	30	55/56	47	39	50	48	40	1	1	-	Y	-	-	-
12068(N)	Shugborough Hall: The Mansion	42	32	59/60	39	31	50	44	35	5	4	-	-	Y	-	-
12087(N)	Ingestre Riding School And Stables, Ingestre	44	34	59/60	43	35	47	47	38	4	3	-	Y	Y	-	Y
12092(N)	St Mary The Virgin Church, Ingestre	43	33	57/58	43	35	47	46	37	3	2	-	Y	Y	-	Y
12093(N)	Ingestre Hall, Ingestre	43	33	57/58	43	35	47	46	37	3	2	-	Y	Y	-	Y
12101(N)	Staffordshire County Showground, Horse Showing Ring	49	39	64/65	44	38	50	50	42	6	4	-	-	-	-	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 and visual	Socio-economic
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **					
12106(N)	Staffordshire County Showground, North-Western Fields Near A518	48	38	63/64	51	44	50	53	45	2	1	-	-	-	-	Y
12107(N)	Staffordshire County Showground, Indoor Showring And Annexes	60	50	80/81	45	39	50	60	50	15	11	-	-	-	-	Y
12108(N)	Staffordshire County Showground, Main Outdoor Showring	50	41	65/66	47	41	50	52	44	5	3	-	-	-	-	Y
12110(N)	Staffordshire County Showground, North-Western Fields Near A518	50	40	66/67	55	49	50	56	50	1	1	-	-	-	-	Y
12111(N)	Staffordshire County Showground, Southern Fields Near Indoor Showring	67	57	84/85	44	38	50	67	57	23	19	-	-	-	-	Y
12112(N)	Staffordshire County Showground, Offices/Suites	56	46	71/72	50	42	50	57	48	7	6	-	-	-	-	Y
12113(N)	Staffordshire County Showground, Western Fields Near A518	56	48	71/73	54	48	50	57	50	3	2	-	-	-	-	Y
12114(N)	Staffordshire County Showground, Southern Fields Near A518	65	55	80/81	53	46	50	65	55	12	9	-	-	-	-	Y
12115(N)	Mod, Within Lane, Hopton	41	31	57/58	46	36	49	47	37	1	1	-	-	-	-	-

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 and visual	Socio-economic
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **					
12117(N)	Mod, Within Lane, Hopton	40	30	55/56	46	36	49	47	37	1	1	-	-	-	-	-
12150(N)	St Peter's Church, Hopton	52	42	67/68	40	35	47	52	43	12	8	-	Y	Y	-	-
12165(N)	Hopton Barracks East	46	37	63/64	44	39	49	48	41	4	2	-	-	-	-	-
12173(N)	Hopton Barracks West	39	29	59/60	40	35	50	42	36	2	1	-	-	-	-	-
12194(N)	Saint Leonards Church, Marston	53	44	69/70	44	35	49	54	44	10	9	-	Y	Y	-	-
12209(N)	Yarlet School, Yarlet: Main Building	51	41	70/71	50	43	58	54	45	4	2	-	Y	Y	-	-
12234(N)	Park Farm, Marston	64	54	80/82	43	38	50	64	54	21	16	Y	-	-	-	-
12236(N)	The Orangery, Ingestre Hall, Ingestre	41	31	55/57	43	35	47	45	37	2	2	-	Y	-	-	-
12238(N)	Essex Bridge, Shugborough Estate	41	31	57/58	46	38	51	47	39	1	1	-	-	Y	Y	-
12239(N)	Chinese House At Shugborough Hall	45	35	61/62	40	32	51	46	37	6	5	-	-	Y	-	-
12240(N)	Staffordshire & Worcestershire Canal Great Haywood Canal Bridge 1 09	45	35	62/64	48	40	51	50	41	2	1	-	-	Y	-	-
12241(N)	Staffordshire & Worcestershire Canal	49	40	65/66	40	32	49	50	40	10	8	-	-	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 and visual	Socio-economic
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **					
12242(N)	Trent & Mersey Canal Middle Bridge 75	54	44	71/72	45	35	51	54	45	9	10	-	-	Y	-	-
12244(N)	Trent & Mersey Canal Hoomill Bridge 76	49	40	64/66	55	48	56	56	49	1	1	-	-	Y	-	-
12246(N)	Stables At Ingestre Hall, Ingestre	44	34	58/60	43	35	47	46	38	3	3	-	-	Y	-	-
12247(N)	Pavillion In Ingestre Park, Ingestre	47	38	61/62	43	35	52	49	39	6	4	-	-	Y	-	-
12250(N)	Recreational/Leisure Facilities: (CD Ref.: Policy/SA1/Cannalside/Site)	46	36	62/64	52	45	51	53	46	1	1	-	-	-	-	Y
12252(N)	Roseacre Nursery (CD Ref.: Policy/SA2/Roseacre/Nursery) (Medical Centre)	49	39	63/64	62	57	58	62	57	0	0	-	Y	-	-	Y
12255(N)	High Meadows Bed and Breakfast, Main Road, Great Haywood	42	33	59/60	48	39	53	49	40	1	1	-	-	-	-	Y
12260(N)	Tolldish Lane, Great Haywood	44	34	60/61	42	30	42	46	35	4	5	-	-	-	Y	-
12261(N)	Tolldish Lane, Great Haywood	52	42	67/68	41	31	44	52	43	11	12	-	-	-	Y	-
12262(N)	Bishton Lane, Wolseley Bridge	56	47	74/76	44	34	43	57	47	13	13	-	-	-	Y	-
12263(N)	Bishton Lane, Wolseley Bridge	56	46	71/72	42	34	49	56	46	14	12	-	-	-	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 and visual	Socio-economic
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **					
12264(N)	Hoo Mill Lane, Great Haywood	57	48	73/75	46	39	51	58	48	12	9	-	-	Y	Y	-
12265(N)	Hoo Mill Lane, Great Haywood	47	37	62/63	54	48	56	55	48	1	0	-	-	-	Y	-
12266(N)	Mill Lane, Great Haywood	55	45	73/74	39	31	51	55	46	16	15	-	-	Y	Y	-
12267(N)	Shugborough	40	30	56/57	46	39	51	47	40	1	1	-	-	-	Y	-
12269(N)	Shugborough	43	33	60/61	40	32	51	45	36	5	4	-	-	-	Y	-
12271(N)	Mill Lane, Great Haywood	49	40	65/66	40	31	50	50	40	10	9	-	-	-	Y	-
12272(N)	Bottle Lodge, Tixall	45	35	60/62	38	28	50	45	36	7	8	-	-	-	Y	-
12273(N)	Tixall Mews, Tixall	38	29	52/53	42	34	46	44	35	2	1	-	-	-	Y	-
12274(N)	Hanyards Lane, Tixall	50	40	64/65	43	35	52	51	41	8	6	-	-	-	Y	-
12275(N)	Hanyards Lane, Tixall	57	47	71/72	43	35	52	57	47	14	12	-	-	-	Y	-
12276(N)	Park House, Hopton	52	42	66/67	47	38	49	53	43	6	5	-	-	-	Y	-
12277(N)	Kings Drive, Hopton	51	41	66/67	38	32	50	51	42	13	10	-	-	-	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 and visual	Socio-economic
		Day *	Night **	Max ***	Day *	Night **	Max ***	Day *	Night **	Day *	Night **					
12278(N)	Wilmore Hill Lane, Hopton	48	38	62/64	40	39	43	49	42	9	3	-	-	-	Y	-
12279(N)	Sandon Road, Hopton	57	47	71/72	41	37	45	57	48	16	11	-	-	-	Y	-
12280(N)	Yarlet Lane, Marston	47	38	61/62	44	35	49	49	40	5	5	-	-	-	Y	-
12281(N)	Yarlet Lane, Marston	61	52	77/78	41	36	48	61	52	20	16	-	-	-	Y	-
12282(N)	Green Lane, Whitgreave	55	45	73/74	46	40	55	55	46	9	6	-	-	-	Y	-
12293(N)	Great Haywood Marina, Trent & Mersey Canal	55	46	72/73	45	38	51	56	46	11	8	-	Y	-	-	Y
12294(N)	Canalside Moorings, Great Haywood, Trent & Mersey Canal	50	40	66/67	47	39	51	52	43	5	4	-	Y	-	-	-

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