In Parliament – Session 2021 - 2022

HS2

High Speed Rail (Crewe – Manchester) Environmental Statement

Volume 5: Appendix SV-002-0MA03

Sound, noise and vibration

MA03: Pickmere to Agden and Hulseheath Baseline and construction sound, noise and vibration report

M261

HS2

High Speed Rail (Crewe – Manchester) Environmental Statement

Volume 5: Appendix SV-002-0MA03

Sound, noise and vibration

MA03: Pickmere to Agden and Hulseheath Baseline and construction sound, noise and vibration report

M261

Department for Transport

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

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

Telephone: 08081 434 434

General email enquiries: HS2enquiries@hs2.org.uk

Website: www.hs2.org.uk

A report prepared for High Speed Two (HS2) Limited:

ARUP+ ERM | FOSTER + PARTNERS | JACOBS
RAMBOLL | TYPSA | COSTAIN

MWJV
Mott MacDonald | WSP

High Speed Two (HS2) Limited has actively considered the needs of blind and partially sighted people in accessing this document. The text will be made available in full on the HS2 website. The text may be freely downloaded and translated by individuals or organisations for conversion into other accessible formats. If you have other needs in this regard please contact High Speed Two (HS2) Limited.

recycle

Printed in Great Britain on paper containing at least 75% recycled fibre.

Contents

Tables

1 Introduction

1.1.1 This report is an appendix to the sound, noise and vibration assessment relating to the Pickmere to Agden and Hulseheath area (MA03). This appendix presents baseline and predicted construction sound, noise and vibration levels.

1.1.2 This appendix should be read in conjunction with:

- Volume 2, Community Area reports;
- Volume 3, Route-wide effects;
- Volume 4, Off-route effects; and
- Volume 5, Appendices.

1.1.3 There are three sound, noise and vibration appendices relevant to each community area, of which this should be considered the second. The first appendix contains an introduction to policy relevant to sound, noise and vibration and the assessment methodology, and can be found as Volume 5, Appendix SV-001-00000. This relates to all community areas. As the second appendix of the series, this report for MA03 provides the baseline and predicted levels as described above.

1.1.4 The third appendix is also specific to MA03, and provides detailed operational sound, noise and vibration levels, see Volume 5, Appendix SV-003-0MA03. This report should be read in conjunction with Map Series SV-03 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, Section 8, and in Volume 5, Appendix SV-001-00000. 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 was requested. For MA03, the guidance within the following documents has been considered when applying the impact and significance criteria set out in Environmental Impact Assessment Scope and Methodology Report (SMR), (see Volume 5: Appendix CT-001-00001):

- adopted Cheshire West and Chester Council Local Plan (Part One) Strategic Policies 2010 – 2030 (2015)[1];
- adopted Cheshire East Local Plan Strategy 2010 – 2030 (2017)[2]; and
- the Trafford Local Plan: Core Strategy (adopted 2012)[3].

2.2 Engagement

2.2.1 Details of engagement on a route-wide basis with the local and county authorities' Environmental Health Practitioners are set out in Volume 1.

2.2.2 Meetings have been held with representatives of Cheshire West and Chester Council (CWCC), Cheshire East Council (CEC) and Trafford Metropolitan Borough Council (TMBC)[4] regarding the approach taken to baseline monitoring within this area, the identification of noise and vibration sensitive receptors, the selection of assessment locations and 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 are reported in this appendix. CWCC, CEC and TMBC officers were also invited to attend baseline sound measurements in this area and witness the measurement procedures used.

[1] Cheshire West and Chester Council (2015), *Cheshire West and Cheshire Council Local Plan (Part One) Strategic Policies*. Available online at: http://consult.cheshirewestandchester.gov.uk/file/3310073.

[2] Cheshire East Council (2017), *Cheshire East Local Plan Strategy 2010 – 2030* (Adopted 2017). Available online at: https://www.cheshireeast.gov.uk/pdf/planning/local-plan/local-plan-strategy-web-version-1.pdf.

[3] Trafford Metropolitan Borough Council (2012), *Trafford Local Plan: Core Strategy*. Available online at: https://www.trafford.gov.uk/planning/strategic-planning/docs/core-strategy-adopted-final.pdf.

[4] Meetings held on 26 June 2018 with CWCC, 6 July 2018 with CEC, 28 June 2018 with TMBC and on 7 February 2018, 16 May 2018, 20 February 2019, 5 June 2019, 22 October 2020 and 7 July 2021 with the local and county authorities' Environmental Health Practitioners on a route-wide basis.

2.2.4 Local engagement, prior to and through the working draft Environmental Statement report consultation provided opportunities for local stakeholders to suggest appropriate baseline sound monitoring locations, to confirm building uses and to review 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. Further information is contained in Volume 5, Appendix SV-001-00000.

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-001-00000. Local assumptions that apply to the assessment of construction sound noise and vibration within this area are set out in Volume 2, Community Area report: Pickmere to Agden and Hulseheath (MA03), Section 13.

2.5 Limitations

2.5.1 The route-wide limitations and the approach adopted to ensure that they will not compromise the robust assessment of sound, noise and vibration are presented in Volume 5, Appendix SV-001-00000 and Volume 2.

3 Baseline

3.1 Existing acoustic environment

3.1.1 The Pickmere to Agden and Hulseheath 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. There are also overflying aircraft to and from Manchester Airport, local neighbourhood sounds, and natural and agricultural sounds.

3.1.2 There are several main roads that contribute to the sound environment near to the Proposed Scheme within the Pickmere to Agden and Hulseheath area. These include: the M6 affecting Winterbottom and Tabley; the M56 affecting Agden; the A50 Warrington Road/Knutsford Road affecting High Legh, Hoo Green and Mere; the A556 Chester Road affecting Tabley; and the A556 affecting Mere, Bucklow Hill, Hoo Green and Hulseheath as well as the A56 Lymm Road affecting Agden.

3.1.3 Sound levels close to these main transport routes are high during the daytime and are generally lower at night. Sound levels decrease with increasing distance from the main transportation routes. Manchester Airport restricts the operations permitted at night so that the aircraft noise levels are lower than during the daytime.

3.1.4 The community of Pickmere and Tabley is characterised by sound from local roads, such as the B5391 Pickmere Lane and Flittogate Lane, road traffic from the M6 and from aircraft to and from Manchester Airport. Properties close to the B5391 Pickmere Lane and in the vicinity of the M6 typically experience sound levels of 55dB – 65dB and 50dB – 60dB during the daytime and night-time respectively. At properties further away from the road, sound levels are typically 45dB – 50dB in the daytime and 40dB – 50dB at night-time.

3.1.5 The community of Winterbottom is characterised by sound from the M6 to the south and from aircraft to and from Manchester Airport. Properties facing the route of the Proposed Scheme typically experience sound levels of 50dB and 45dB during the daytime and night-time respectively.

3.1.6 The community of Hoo Green is characterised by sound from the A50 Warrington Road/Knutsford Road; local roads such as Hulseheath Lane and Hoo Green Lane; distant road traffic from the A556 to the east and from aircraft to and from Manchester Airport. Properties close to the A50 Warrington Road/Knutsford Road typically experience sound levels 60dB – 65dB and 55dB – 60dB during the daytime and night-time respectively. The properties set back from the A50 Warrington Road typically experience sound levels of 45dB – 50dB during the daytime and night-time. The properties on Hoo Green Lane typically experience sound levels of 60dB and 55dB during the daytime and night-time respectively.

3.1.7 The community of Hulseheath and further north around Agden Lane, Peacock Lane and Moss Lane is characterised by sound from the M56 and local roads as well as aircraft to and

from Manchester Airport. Properties further from the M56 and facing the route of the Proposed Scheme typically experience daytime sound levels of 45dB – 50dB in the daytime and 40dB – 45dB at night-time. Properties closer to the M56 typically experience higher sound levels of 65dB and 60dB during the daytime and night-time respectively.

3.1.8 The community of Agden is characterised by sound from the A56 Agden Brow and Lymm Road and local roads. Properties near the A56 Agden Brow and Lymm Road typically experience sound levels of 65dB and 60dB during the daytime and night-time respectively.

3.2 Existing baseline data collection methodology

3.2.1 The overall approach to baseline data collection for sound noise and vibration is described in Volume 5, Appendix SV-001-00000. In summary, the approach to defining baseline levels includes a combination of sound monitoring and – where existing sound levels at assessment locations are dominated by transport sources which can be reliably modelled – sound modelling, verified using results from sound monitoring.

3.3 Existing baseline sound measurement locations

3.3.1 The assessment of impacts has been undertaken at assessment locations that are representative of a number of dwellings or other sensitive receptors. Baseline monitoring locations have been defined in order to provide representative sound levels at assessment locations within the study area as well as to verify the baseline sound model.

3.3.2 Baseline information has been gathered incrementally through successive rounds of field surveys focused on locations where likely significant effects are forecast.

3.3.3 Where measured baseline data are required to provide representative sound levels at assessment locations, areas have been defined within which the sound climate is influenced by the same sound sources. Within each of these areas, monitoring has been undertaken together with attended observations to assist in identifying the contributing sources to the sound climate at the measurement locations.

3.3.4 Where measurements, carried out at or close to assessment locations, have been used to assist in verifying the baseline sound model, they are identified in Table 1 along with the modelled baseline for the relevant assessment location.

3.3.5 Within MA03, eight baseline measurement locations have been defined. The measurement locations are shown on the detailed maps in Volume 5, Sound, noise and vibration Map Book: Map Series SV-02 and SV-03. These measurement locations have been classified as follows:

- seven long-term measurements – unattended measurements of several days' duration; and
- one short-term measurements – unattended measurements typically of 24 hours' duration and attended measurements typically of several hours.

3.3.6 An additional 11 verification measurements have been carried out, typically close to modelled sound sources and over durations of three hours (attended) or 24 hours (unattended), to assist in verifying the baseline sound model.

3.4 Existing baseline sound modelling

3.4.1 Baseline sound levels have been modelled where existing sound levels at assessment locations are dominated by transport sources which can be reliably modelled. Methodologies from the Calculation of Road Traffic Noise[5] and the Calculation of Railway Noise[6] have been used to predict baseline levels of airborne sound from road traffic and railways respectively. The methods use input data such as traffic flows and speed to predict sound levels. As described previously, verification measurements have been carried out to assist in verifying the baseline sound model.

3.4.2 Within the Pickmere to Agden and Hulseheath area, noise from all major roads including the M56, the M6, the A50 Warrington Road/Knutsford Road, the A556 Chester Road and the A556, and approximately 25 other roads have been modelled.

3.5 Future baseline methodology

Construction

3.5.1 The assessment of noise from construction activities assumes a future construction baseline year of 2025, which represents the period immediately prior to the start of the construction period. As a reasonable worst case, it has been assumed that no change in baseline sound levels will occur between the existing baseline year of 2018[7] and the future construction baseline year of 2025.

Operation

3.5.2 Changes in road and rail traffic between 2018 and 2038 may result in changes in baseline sound levels at receptors. For modelled transportation sources, future baseline sound levels for operation (2038) have been predicted, based on, for example, expected changes in road

[5] Department of Transport Welsh Office (1988), *Calculation of Road Traffic Noise.*

[6] Department of Transport (1995), *Calculation of Railway Noise*.

[7] Baseline surveys have also been undertaken in 2019, however, these are considered to be representative of conditions in 2018.

traffic flow, composition, speed, and in some cases road surface using the methodology from the Calculation of Road Traffic Noise.

3.5.3 Changes in noise level as a result of changes in road traffic flow, composition and speed are normally small. Roads in Important Areas identified in Department for Environment, Food & Rural Affairs' (Defra) Noise Action Plans[8] and trunk roads, which are likely to be resurfaced under future routine maintenance programmes, have been assumed to have a low noise surface in 2038. Assuming a low noise surface will result in a lower baseline sound level compared with other road surface types. This is conservative as a lower baseline will have the effect of increasing predicted adverse airborne noise effects during operation.

3.5.4 For 2038, airborne noise levels from railways in Important Areas identified in Defra's Noise Action Plans are assumed, on a precautionary basis, to be controlled to a level of 65dB $L_{Aeq,18hour}$, where they are predicted to exceed this level. This is the lowest level of airborne railway noise where further mitigation would be considered within an Important Area.

3.6 Baseline sound levels

3.6.1 Baseline sound levels have been ascertained for each assessment location within this area. In some cases, they include adjustments to account for changes in baseline sound sources between the date of the existing baseline sound levels and the year of opening of the Proposed Scheme (2038). Further detail regarding the future baseline methodology is provided in Section 3.5. Baseline sound levels are presented in terms of the following key sound indicators:

- baseline levels used for the operational sound assessment:
  - $L_{pAeq,16hour}$ daytime (07:00 – 23:00) sound pressure level;
  - $L_{pAeq,8hour}$ night-time (23:00 – 07:00) sound pressure level;
  - arithmetic average of $L_{pAFmax,5min}$ night-time sound pressure level; and
  - highest $L_{pAFmax,5min}$ night-time sound pressure level.
- baseline levels used for the construction sound assessment:
  - daytime L_{pAeq} sound pressure level (Monday to Friday 07:00 – 19:00; Saturday 07:00 – 13:00);
  - evening/weekend L_{pAeq} sound pressure level (Monday to Friday 19:00 – 23:00, Saturday 13:00 – 23:00 and Sunday 07:00 – 23:00); and

[8] Department for Environment, Food & Rural Affairs (2019), *Noise Action Plan: Roads.* Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/813666/noise-action-plan-2019-roads.pdf and

Department for Environment, Food & Rural Affairs (2019), *Noise Action Plan: Agglomerations (Urban Areas).* Available online at:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/813663/noise-action-plan-2019-agglomerations.pdf.

- night-time L_{pAeq} sound pressure level (Monday to Sunday 23:00 – 07:00).

3.6.2 These values are presented in Table 1. All values are free-field. 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-001-00000. Codes contained within brackets relate to the derivation of night-time baseline noise levels where they are different to the daytime derivation method.

Table 1: Baseline sound levels

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
			For construction sound assessment (2025)			For operational sound assessment (2038)				
Reference	Area represented		Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hour}$	Night-time $L_{pAeq,8hour}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
612610	Smoker Hill Cottage, Chester Road, Plumley		45	40	38	44	39	44	49	3,A,i,b
612611	Chester Road, Tabley		60	56	54	59	54	59	64	3,A,i,b
612612	Radio Telescope, Pickmere, Knutsford	ML712604	52	48	49	52	49	55	77	1,A,i,a
612613	Providence Farm, Pickmere Lane, Pickmere	ML712604	52	48	49	52	49	55	77	1,A,i,a
612614	Garden Lane, Tabley		47	43	41	46	41	46	51	3,A,i,b
612615	Pickmere Lane, Knutsford		50	46	44	50	45	50	55	3,A,i,b
612616	Tanyard Farm, Pickmere Lane, Pickmere		54	50	48	54	49	54	59	3,A,i,b
612617	Clayhouse Farm, Flittogate Lane, Tabley		51	48	45	51	46	51	56	3,A,i,b
612618	Roses Farm, Pickmere Lane, Pickmere	ML712603	52	49	48	52	48	51	84	1,A,i,a
612619	Dunholme Farm, Pickmere Lane, Pickmere	ML712603	52	49	48	52	48	51	84	1,A,i,a
612621	Flittogate Lane, Tabley		55	51	48	54	49	54	59	3,A,i,b
612622	Pickmere Lane, Pickmere	ML712603	52	49	48	52	48	51	84	1,A,i,a
612623	Pickmere Lane, Pickmere		58	54	52	58	53	58	63	3,A,i,b
612624	Pickmere Lane, Pickmere		55	51	49	55	50	55	60	3,A,i,b
612625	Pickmere Hall Farm, Pickmere Lane, Pickmere		48	44	42	48	42	47	52	3,A,i,b
612626	Style Matters (Lower Sensitivity Office), Pickmere, Knutsford		49	45	43	49	44	49	54	3,A,i,b

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2038)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hour}$	Night-time $L_{pAeq,8hour}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
612628	Pickmere Lane, Pickmere		63	59	57	64	59	64	69	3,A,i,b
612629	Churches Farm, School Lane, Pickmere		45	41	39	45	40	45	50	3,A,i,b
612632	Frog Lane, Pickmere	ML712609	52	50	49	52	49	52	80	1,A,i,a
612633	Pickmere Lane, Pickmere		54	50	48	55	50	55	60	3,A,i,b
612635	Pickmere Lane, Pickmere		55	51	49	55	50	55	60	3,A,i,b
612636	Aston by Budworth, Northwich	ML712600	55	47	38	54	38	43	52	2,A,i,a
612638	Budworth Road, Tabley		49	44	44	49	45	50	55	3,A,i,b
612639	Budworth Road, Tabley		57	53	52	58	53	58	63	3,A,i,b
612640	Pickmere Lane, Pickmere		60	57	54	61	56	61	66	3,A,i,b
612642	Aston by Budworth, Northwich	ML712600	55	47	38	54	38	43	52	2,A,i,a
612643	Heyrose Golf Club (Wedding Venue), Budworth Road, Knutsford		45	42	40	45	40	45	50	3,A,i,b
612644	Holly Grove, Tabley		63	60	58	63	59	63	68	3,A,i,b
612645	Heyrose Lane, Over Tabley		47	44	42	47	42	47	52	3,A,i,b
612646	Old Hall Lane, Over Tabley		51	48	46	52	46	51	56	3,A,i,b
612647	Heyrose Lane, Over Tabley		46	43	41	46	41	46	51	3,A,i,b
612649	Old Hall Lane, Over Tabley		55	51	52	55	52	55	60	3,A,i,b
612652	Old Hall Lane, Over Tabley		58	57	53	59	53	57	62	5,A,i,b
612653	The Shooting Box, Old Hall Lane, Over Tabley		58	56	50	58	50	55	60	5,A,i,b
612654	Hollowood Farm, Old Hall Lane, Over Tabley		59	55	53	59	54	59	64	3,A,i,b

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2038)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hour}$	Night-time $L_{pAeq,8hour}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
612655	Bentleyhurst Farm, Mere Hall Estate, Mere		55	55	43	55	44	49	54	5,A,i,b
612656	Winterbottom Farm, Winterbottom Lane, Mere		49	46	43	49	44	49	54	3,A,i,b
612657	Winterbottom Lane, Mere		51	47	45	51	46	51	56	3,A,i,b
612658	Winterbottom Lane, Mere		50	46	44	50	45	50	55	3,A,i,b
612659	Mere Hall Estate, Mere		58	54	52	58	53	58	63	3,A,i,b
612660	The Hay Barn (Wedding Venue), Mere Hall Estate, Knutsford		50	47	45	51	46	51	56	3,A,i,b
612661	Mere Heyes, Winterbottom Lane, Mere		47	44	41	47	42	47	52	3,A,i,b
612662	Winterbottom Lane, Mere	ML712609	52	50	49	52	49	52	80	1,A,i,a
612663	Hoo Green Lane, Mere	ML712609	52	50	49	52	49	52	80	1,A,i,a
612664	Knutsford (Mere) Hotel, Warrington Road, Knutsford		66	63	61	65	60	65	70	3,A,i,b
612665	Warrington Road, Mere		67	63	61	65	60	65	70	3,A,i,b
612669	Bucklow Hill Lane, Mere		52	49	47	52	47	52	57	3,A,i,b
612670	Bowden View Lane, Mere		48	44	42	47	42	47	52	3,A,i,b
612671	Park Farm, Ditchfield Lane, High Legh	ML712606	55	53	53	54	53	51	87	1,A,i,a
612674	Warrington Road, Mere		67	64	62	66	61	66	71	3,A,i,b
612677	Mere Court Hotel, Warrington Road, Knutsford		50	46	44	49	44	49	54	3,A,i,b

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2038)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hour}$	Night-time $L_{pAeq,8hour}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
612681	Tabley Brook Kennels and Cattery (Lower Sensitivity Office), Budworth Road, Tabley		50	46	45	51	46	51	56	3,A,i,b
612682	Wrenshot Lane, High Legh		68	65	63	67	62	67	72	3,A,i,b
612687	Wrenshot House, Wrenshot Lane, High Legh	ML712608	52	50	49	51	49	51	78	1,A,i,a
612688	Chapel Lane, Bucklow Hill		60	56	54	60	55	60	65	3,A,i,b
612692	Wrenshot Cottage, Wrenshot Lane, High Legh	ML712608	52	50	49	51	49	51	78	1,A,i,a
612694	High Legh Park Golf Club (Wedding Venue), Warrington Road, High Legh	ML712607	55	52	48	55	48	58	74	1,A,i,a
612698	Woodside Farm, Wrenshot Lane, High Legh	ML712608	52	50	49	51	49	51	78	1,A,i,a
612700	Chapel Lane, Mere	ML712611	51	49	46	51	46	51	69	1,A,i,a
612704	Wrenshot Lane, High Legh	ML712608	52	50	49	51	49	51	78	1,A,i,a
612706	Chapel Lane, Mere	ML712611	51	49	46	51	46	51	69	1,A,i,a
612712	Broom Manor, Peacock Lane, High Legh	ML712611	51	49	46	51	46	51	69	1,A,i,a
612732	Runnymede, Thowler Lane, Millington	ML712611	51	49	46	51	46	51	69	1,A,i,a
612736	Five Acres, Peacock Lane, High Legh	ML712611	51	49	46	51	46	51	69	1,A,i,a
612745	Little Moss Farm, Peacock Lane, High Legh		47	43	41	47	42	47	52	3,A,i,b
612747	Moss Farm, Peacock Lane, High Legh		46	42	40	46	41	46	51	3,A,i,b
612751	Thowler Lane, Millington	ML712611	51	49	46	51	46	51	69	1,A,i,a

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2038)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hour}$	Night-time $L_{pAeq,8hour}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
612757	Moss Lane, High Legh		54	49	47	54	48	53	58	3,A,i,b
612779	Middle Moss Farm, Agden Lane, Agden		52	49	47	58[9]	59	64	69	3,A,i,b
612780	Froghall Lane, High Legh		50	46	44	50	46	51	56	3,A,i,b
612783	Boothbank Cottage, Boothbank Lane, Agden		52	49	47	55[9]	57	62	67	3,A,i,a
612796	Agden Lane, High Legh		58	54	52	63	65	70	75	3,A,i,b
612805	Froghall Lane, High Legh		68	65	62	68	63	68	73	3,A,i,b
612808	Roundstone House, Boothbank Lane, Agden		53	50	48	53	48	53	58	3,A,i,b
612820	Agden Lane, Lymm		63	60	58	64	61	66	71	3,A,i,b
612829	Hawthorn Cottage, Froghall Lane, Lymm		57	53	51	56	52	57	62	3,A,i,b
612834	Agden Lane, Lymm		52	48	46	51	46	51	56	3,A,i,b
612839	Spode Green Lane, Little Bollington		56	53	51	56	51	56	61	3,A,i,b
612842	Spode Green Lane, Little Bollington		55	51	49	54	49	54	59	3,A,i,b
612847	Spode Green Lane, Little Bollington		52	49	47	52	47	52	57	3,A,i,b
612861	Brook Cottage, Pickmere Lane, Pickmere		65	61	59	66	61	66	71	3,A,i,b
612862	Pickmere and Wincham Methodist Church, Pickmere Lane, Pickmere		68	65	63	69	64	69	74	3,A,i,b

[9] Increase in predicted baseline sound levels from 2023 to 2038 due to forecast increases in road traffic flow.

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2038)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hour}$	Night-time $L_{pAeq,8hour}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
612887	Froghall Lane, High Legh		53	50	48	53	48	53	58	3,A,i,b
612891	Brookside Cottage, Lymm Road, Little Bollington		72	70	66	71	66	71	76	3,A,i,b
612892	Hollowood Farm (Livestock), Old Hall Lane, Knutsford		60	56	54	60	55	60	65	3,A,i,b
612893	Winterbottom Farm (Livestock), Winterbottom Lane, Mere		52	48	46	52	47	52	57	3,A,i,b
613005	Chain & Conveyor (Offices), Winterbottom Lane, Knutsford		49	45	43	49	44	49	54	3,A,i,b
613037	Moss Lane, High Legh		51	47	45	52	50	55	60	3,A,i,b
613050	Hoo Green Lane, Mere		54	50	48	53	48	53	58	3,A,i,b
613052	Warrington Road, Mere		59	56	54	58	53	58	63	3,A,i,b
613074	Warrington Road, Mere		48	45	43	47	42	47	52	3,A,i,b
613075	Old Hall Lane, Over Tabley		52	48	46	52	47	52	57	3,A,i,b
613076	Agden Lane, High Legh		52	49	47	57[9]	57	62	67	3,A,i,b
613077	Agden Lane, High Legh		58	54	52	65[9]	66	71	76	3,A,i,b
613094	The Mere Day Nursery, Chester Road, Knutsford		63	60	57	65	60	65	70	5,A,i,b
613095	Agden Lane, Lymm		50	47	44	50	45	50	55	3,A,i,b
613211	Agden Hall Farm, Agden Lane, Lymm and committed development (Map Book ref.: MA03/050)		53	49	47	52	48	53	58	3,A,i,b
617504	Agden Brow, Lymm		64	62	58	64	58	63	68	3,A,i,b
617505	Agden Brow, Lymm		49	47	43	49	43	48	53	3,A,i,b

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2038)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hour}$	Night-time $L_{pAeq,8hour}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
617508	Hillside, Agden Brow		60	58	54	60	54	59	64	3,A,i,b
617509	Agden Brow, Lymm		66	64	60	66	61	66	71	3,A,i,b
617512	Lymm Road, Little Bollington		63	61	57	63	57	62	67	3,A,i,b
617513	Lymm Road, Little Bollington		63	61	57	63	57	62	67	3,A,i,b
617519	Woolstencroft Farm, Spring Lane, Lymm		44	42	38	44	38	43	48	3,A,i,b
618091	Lymm Road, Little Bollington		55	53	49	55	50	55	60	3,A,i,b
618241	Agden Brow, Lymm		52	50	46	52	47	52	57	3,A,i,b
618242	Agden Brow, Lymm		59	57	53	59	53	58	63	3,A,i,b

Table 2: Data source coding key

Code	Data source type
1	Long-term measurement location (typically seven days).
2	Short-term (typically unattended 24 hours or attended measurements of several 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.
7	Predictions from other sources (e.g. Defra noise maps).
Code	**Corrections applied**
A	Data from above source applied directly.
B	Correction applied based upon location of assessment location.
C	Minimum level cut-off applied.
Code	**Distance from measurement**
i	Data applied from a measurement / prediction 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.

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-001-00000.

4.1.3 In undertaking the assessment of sound, noise and vibration, consistent with the Environmental Impact Assessment Directive[10] and planning practice on noise[11] a differentiation between impacts, effects, adverse effects and significant effects is made. Further information is provided in Volume 5, Appendix SV-001-00000.

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 Volume 5, Sound, noise and vibration Map Book: Map Series SV-03.

4.1.5 Baseline sound level data have been collected at locations representative of the airborne sound-sensitive receptors and presented in Table 1.

4.2 Effects during construction

Introduction

4.2.1 The assessment is reported first for ground-borne sound and vibration and then for airborne sound. Under each of these headings, the results of the 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, Community Area report: Pickmere to Agden and Hulseheath (MA03), Section 13.

[10] *Directive 85/337/EEC, as amended by 97/11/EC, 2003/35/EC, 2011/92/EC and 2014/52/EU ('the EIA Directive') of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment.* Strasbourg, European Parliament and European Council.

[11] Ministry of Housing, Communities & Local Government (2019), *National Planning Practice Guidance – Noise*. Available at: https://www.gov.uk/guidance/noise--2.

Avoidance and mitigation measures

4.2.2 These are set out in, Volume 2, Community Area report: Pickmere to Agden and Hulseheath (MA03), Section 13.

Identification of impacts and effects

4.2.3 Assessment locations defined for the quantitative assessment of impacts are shown on Volume 5, Sound, noise and vibration Map Book: Map Series SV-03.

4.2.4 For each assessment location, the assessment results are presented in Table 4. Explanation of the information in Table 4 to Table 6 is provided in Volume 5: Appendix SV-001-00000, with the following additional notes in Table 3.

Table 3: Explanatory notes for assessment results – direct construction effects

Symbol	Explanation
	Where the significant effect column is highlighted in pink, then a significant effect is identified at the referenced residential community area.
	For residential receptors yellow denotes a minor ground-borne vibration impact.
	For residential receptors orange denotes a moderate ground-borne vibration impact.
	For residential receptors red denotes a major ground-borne vibration impact.
*	For residential receptors this indicates a potentially significant effect where 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. For non-residential receptors this indicates the predicted noise levels are above screening criteria 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-001-00000, Annex A, Section 1.3, these adverse effects are not considered to be significant on a community basis.
A	For residential Assessment Locations (AL) - Construction sound or vibration levels from the Proposed Scheme exceed Lowest Observed Adverse Effect Level (LOAEL): the significance criteria set out in Volume 5: Appendix SV-001-00000, Annex A, Section 1.3 are considered when establishing significant effects. For non-residential AL and external amenity spaces - Construction sound or vibration levels from the Proposed Scheme exceed the screening criteria in the SMR Section 18.
S	Sound levels from the Proposed Scheme exceed Significant Observed Adverse Effect Level (SOAEL): noise insulation (or temporary rehousing at higher noise levels) therefore provided.
NA	Sound or vibration levels from the Proposed Scheme do not exceed LOAEL, therefore generally no adverse effect.
R	Type of receptor – residential.
A1 – A4	Type of receptor (airborne sound) - (A1) large and small auditoria; concert halls, sound recording and broadcast studios and theatres, (A2) places of meeting for religious worship, courts, cinemas, lecture theatres, museums and small auditoria or halls, (A3) schools; colleges; hospitals, hotels and libraries, (A4) offices and amenity spaces.
V1 – V4	Type of receptor (ground-borne vibration) – (V1) vibration sensitive research and manufacturing; hospitals with vibration sensitive equipment/operations; universities with vibration sensitive

Symbol	Explanation
	research equipment/operations, (V2) hotels, hospital wards and education dormitories, (V3) offices, schools and places of worship, (V4) workshops.
T	Receptor design – typical.
SP	Receptor design – special.
+	The use and sensitivity of this non-residential receptor or land use is very sensitive to noise and has been included in the detailed assessment (presented in Volume 2) where there is a change less than 3dB. In each case specific information is presented in an associated footnote.
$	The impact methodology for non-residential receptors includes a screening criterion for A2 building use of $50dBL_{pAeq,07:00-23:00}$, A3 building use of $50dBL_{pAeq,07:00-23:00}$, and $45dBL_{pAeq,23:00-07:00}$ and for A4 building. use $55dBL_{pAeq,07:00-23:00}$ (except for A4 buildings containing lower sensitivity offices, in which case the relevant A and B categories from the BS5228 ABC method will be used to assess the noise impact). At the receptor denoted, the screening criteria is met but a change of 3dB or greater has not been identified and therefore no impact is identified. Further information is provided in Volume 5: Appendix SV-001-00000.
H	Existing environment – high existing airborne ambient noise levels, day >75dB, evening >65dB or night >55dBL_{pAeq} at the façade.
L	Existing environment – low existing airborne ambient noise levels, day and evening ≤45dB, or night ≤35dBL_{pAeq} at the façade.
D,E,N	Impact duration (months) – duration of impact during the day (D), evening (E) or night (N).
O, CT, V	Combined Impact: If noise or vibration 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) Volume 5: Appendix CT-002-00000.
TR	Mitigation effect - identified as likely to qualify for temporary rehousing under the draft CoCP.

Ground-borne sound and vibration

4.2.5 Activities associated with the construction phases of the Proposed Scheme will generate ground-borne sound and vibration. 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.

4.2.6 The results, impact criteria and significance criteria for the assessment of the Proposed Scheme at residential and non-residential receptors are presented in Table 4. Explanation of the information within Table 4 is provided in Volume 5, Appendix SV-001-00000, with the additional notes presented in Table 3.

Table 4: Assessment of construction induced ground-borne vibration at residential and non-residential receptors

Assessment location		Impact criteria	Significance criteria										
Reference	Area represented	Peak particle velocity (PPV) [mm/s] on foundation	Typical/highest monthly indoor vibration dose value (VDV) [m/s$^{1.75}$]		Construction activity resulting in highest forecast vibration	Type of effect	Number of properties represented	Type of receptor	Receptor design	Unique feature	Combined impact	Impact duration [m]	Significant effect
			Day 07:00 – 23:00	Night 23:00 – 07:00									
612610	Smoker Hill Cottage, Chester Road, Plumley	0.2	0.04/0.16	-/-	Site set up (vibratory roller)	NA	1	R	T	-	-		
612628	Pickmere Lane, Pickmere	0.1	0.04/0.12	-/-	Site set up (vibratory roller)	NA	2	R	T	-	-		
612633	Pickmere Lane, Pickmere	0.3	0.04/0.24	-/-	Site set up (vibratory roller)	A	3	R	T	-	O, CT	D 3	~
612638	Budworth Road, Tabley	0.3	0.08/0.25	-/-	Site set up (vibratory roller)	A	5	R	T	-	O, CT	D 3	~
612645	Heyrose Lane, Over Tabley	0.4	0.12/0.36	-/-	Embankment construction (vibratory roller)	A	2	R	T	-	O	D 3	~
612662	Winterbottom Lane, Mere	0.3	0.04/0.16	-/-	Ground stabilisation works (vibratory roller)	NA	2	R	T	-	-		
612663	Hoo Green Lane, Mere	0.2	0.08/0.16	-/-	Site set up (vibratory roller)	NA	6	R	T	-	-		
612665	Warrington Road, Mere	0.2	0.04/0.12	-/-	Site set up (vibratory roller)	NA	3	R	T	-	-		
612677	Mere Court Hotel, Warrington Road, Knutsford	0.7	0.04/0.40	-/-	Site set up (vibratory roller)	A	1	V2	T	-	O	D 1	MA03-C-N3
612681	Tabley Brook Kennels and Cattery (Lower	2	0.08/0.50	-/-	Site set up (vibratory roller)	A	1	V3	T	-	-	D 3	*

Assessment location		Impact criteria	Significance criteria										
Reference	Area represented	Peak particle velocity (PPV) [mm/s] on foundation	Typical/highest monthly indoor vibration dose value (VDV) [m/s$^{1.75}$]		Construction activity resulting in highest forecast vibration	Type of effect	Number of properties represented	Type of receptor	Receptor design	Unique feature	Combined impact	Impact duration [m]	Significant effect
			Day 07:00 – 23:00	Night 23:00 – 07:00									
	Sensitivity Office), Budworth Road, Tabley												
612706	Chapel Lane, Mere	0.2	0.12/0.12	-/-	Site set up (vibratory roller)	NA	2	R	T	-	-		
612712	Broom Manor, Peacock Lane, High Legh	0.3	0.12/0.20	-/-	Finishing works (vibratory roller)	NA	1	R	T	-	-		
612736	Five Acres, Peacock Lane, High Legh	0.4	0.16/0.24	-/-	Road embankment works (vibratory roller)	A	1	R	T	-	O, CT	D 1	~
612745	Little Moss Farm, Peacock Lane, High Legh	0.2	0.04/0.08	-/-	Road embankment works (vibratory roller)	NA	1	R	T	-	-		
612747	Moss Farm, Peacock Lane, High Legh	0.9	0.12/<0.8[12]	-/-	Site set up (vibratory roller)	A	1	R	T	-	O, CT	D 3	~
612779	Middle Moss Farm, Agden Lane, Agden	0.5	-/0.48	-/-	Site set up (vibratory roller)	A	1	R	T	-	O, CT	D 1	~
612796	Agden Lane, High Legh	0.7	0.12/0.64	-/-	Site set up (vibratory roller)	A	1	R	T	-	O	D 3	~
612834	Agden Lane, Lymm	0.2	0.04/0.12	-/-	Finishing works (vibratory roller)	NA	7	R	T	-	-		

[12] Construction methods will be selected to ensure that on a monthly basis the significant adverse effect level is not exceeded.

Assessment location		Impact criteria	Significance criteria										
Reference	Area represented	Peak particle velocity (PPV) [mm/s] on foundation	Typical/highest monthly indoor vibration dose value (VDV) [m/s$^{1.75}$]		Construction activity resulting in highest forecast vibration	Type of effect	Number of properties represented	Type of receptor	Receptor design	Unique feature	Combined impact	Impact duration [m]	Significant effect
			Day 07:00 – 23:00	Night 23:00 – 07:00									
613037	Moss Lane, High Legh	0.2	-/0.20	-/-	Site set up (vibratory roller)	NA	1	R	T	-	-		
613077	Agden Lane, High Legh	0.4	0.08/0.40	-/-	Site set up (vibratory roller)	A	1	R	T	-	O	D 3	~
617509	Agden Brow, Lymm	2	0.08/<0.8[12]	-/-	Site set up (vibratory roller)	A	2	R	T	-	-	D 3	~

Airborne sound: direct impacts and effects

4.2.7 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.

4.2.8 For each type of receptor, the typical and highest monthly $L_{Aeq,T}$ noise levels from construction activities have been calculated at the façade of all assessment locations. This is subject to the screening distances identified and based upon supplied plant information from engineers.

4.2.9 The results, impact criteria and significance criteria for the assessment of the Proposed Scheme at residential and non-residential receptors are presented in Table 5 and Table 6, respectively. Explanation of the information within Table 5 and Table 6 is provided in Volume 5, Appendix SV-001-00000, with the additional notes presented in Table 3.

Table 5: Assessment of construction noise at residential receptors

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	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 properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
612610	Smoker Hill Cottage, Chester Road, Plumley	60/65[A]	-/-[A]	-/-[A]	Day: Earthworks	NA	1	R	T	-	-	-	-	-	
612611	Chester Road, Tabley	51/53[B]	-/-[C]	-/-[C]	Day: Underbridge construction	NA	6	R	T	H	-	-	-	-	
612613	Providence Farm, Pickmere Lane, Pickmere	54/59[A]	-/-[A]	-/-[C]	Day: Underbridge construction	NA	1	R	T	-	-	-	-	-	
612614	Garden Lane, Tabley	53/56[A]	-/-[A]	-/-[B]	Day: Auto transformer station GSM-R civil works	NA	1	R	T	-	-	-	-	-	
612615	Pickmere Lane, Knutsford	49/52[A]	-/-[A]	-/-[B]	Day: Earthworks	NA	50	R	T	-	-	-	-	-	
612616	Tanyard Farm, Pickmere Lane, Pickmere	50/53[A]	-/-[B]	-/-[C]	Day: Overbridge construction	NA	1	R	T	-	-	-	-	-	
612617	Clayhouse Farm, Flittogate Lane, Tabley	52/55[A]	-/-[A]	-/-[C]	Day: Highway works	NA	1	R	T	-	-	-	-	-	
612618	Roses Farm, Pickmere Lane, Pickmere	52/56[A]	-/-[A]	-/-[C]	Day: Earthworks	NA	1	R	T	-	-	-	-	-	

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	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 properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
612619	Dunholme Farm, Pickmere Lane, Pickmere	52/54[A]	-/-[A]	-/-[C]	Day: Overbridge construction	NA	1	R	T	-	-	-	-	-	
612621	Flittogate Lane, Tabley	52/55[A]	-/-[B]	-/-[C]	Day: Highway works	NA	3	R	T	-	-	-	-	-	
612622	Pickmere Lane, Pickmere	52/56[A]	-/-[A]	-/-[C]	Day: Highway works	NA	7	R	T	-	-	-	-	-	
612623	Pickmere Lane, Pickmere	53/57[A]	-/-[B]	-/-[C]	Day: General site works	NA	4	R	T	H	-	-	-	-	
612624	Pickmere Lane, Pickmere	53/57[A]	-/-[B]	-/-[C]	Day: Highway works	NA	5	R	T	-	-	-	-	-	
612625	Pickmere Hall Farm, Pickmere Lane, Pickmere	52/56[A]	-/-[A]	-/-[B]	Day: Highway works	NA	1	R	T	-	-	-	-	-	
612628	Pickmere Lane, Pickmere	62/68[B]	-/-[C]	-/-[C]	Day: Highway works	NA	2	R	T	H	-	-	-	-	
612629	Churches Farm, School Lane, Pickmere	59/67[A]	-/-[A]	-/-[A]	Day: Highway works	A	1	R	T	-	-	D1	-	-	~
612632	Frog Lane, Pickmere	66/69[A]	-/-[B]	-/-[C]	Day: Highway works	A	2	R	T	-	-	D9	-	-	~
612633	Pickmere Lane, Pickmere	66/71[A]	-/31[B]	-/31[C]	Day: Earthworks Evening: Earthworks	A	3	R	T	-	-	D18	CT, V	-	~

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	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 properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
					Night: Earthworks[13]										
612635	Pickmere Lane, Pickmere	54/57[A]	-/-[B]	-/-[C]	Day: General site works	NA	4	R	T	-	-	-	-	-	
612638	Budworth Road, Tabley	64/68[A]	-/-[A]	-/-[B]	Day: General site works	A	5	R	T	-	-	D8	CT, V	-	MA03-C-C1
612639	Budworth Road, Tabley	58/61[A]	-/-[B]	-/-[C]	Day: General site works	NA	2	R	T	H	-	-	-	-	
612640	Pickmere Lane, Pickmere	53/56[B]	-/-[C]	-/-[C]	Day: Earthworks	NA	1	R	T	H	-	-	-	-	
612645	Heyrose Lane, Over Tabley	64/71[A]	-/33[A]	-/33[B]	Day: Earthworks Evening: Earthworks Night: Earthworks[13]	A	2	R	T	-	-	D4	V	-	~
612646	Old Hall Lane, Over Tabley	54/57[A]	-/-[A]	-/-[C]	Day: Earthworks	NA	3	R	T	-	-	-	-	-	
612647	Heyrose Lane, Over Tabley	56/61[A]	-/-[A]	-/-[B]	Day: Earthworks	NA	3	R	T	-	-	-	-	-	
612649	Old Hall Lane, Over Tabley	52/56[A]	-/-[B]	-/-[C]	Day: Earthworks	NA	2	R	T	H	-	-	-	-	

[13] Activity only includes generators for site power during extended and night-time periods; all other noise generating plant associated with this activity assumed to be daytime only.

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	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 properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
612653	The Shooting Box, Old Hall Lane, Over Tabley	63/68[A]	-/-[C]	-/-[C]	Day: Underbridge construction	A	1	R	T	H	-	D6	-	-	~
612654	Hollowood Farm, Old Hall Lane, Over Tabley	62/65[A]	-/-[C]	-/-[C]	Day: General site works	NA	1	R	T	H	-	-	-	-	
612655	Bentleyhurst Farm, Mere Hall Estate, Mere	56/60[A]	-/-[C]	-/-[B]	Day: Underbridge construction	NA	1	R	T	-	-	-	-	-	
612656	Winterbottom Farm, Winterbottom Lane, Mere	60/65[A]	-/-[A]	-/-[B]	Day: Underbridge construction	NA	1	R	T	-	-	-	-	-	
612657	Winterbottom Lane, Mere	56/60[A]	-/-[A]	-/-[C]	Day: Culvert construction	NA	4	R	T	-	-	-	-	-	
612658	Winterbottom Lane, Mere	54/58[A]	-/-[A]	-/-[B]	Day: Highway works	NA	3	R	T	-	-	-	-	-	
612659	Mere Hall Estate, Mere	54/59[A]	-/-[B]	-/-[C]	Day: Underbridge construction	NA	3	R	T	H	-	-	-	-	
612661	Mere Heyes, Winterbottom Lane, Mere	53/57[A]	-/-[A]	-/-[B]	Day: Culvert construction	NA	1	R	T	-	-	-	-	-	
612662	Winterbottom Lane, Mere	68/73[A]	32/35[B]	32/35[C]	Day: Earthworks Evening: Earthworks	A	2	R	T	-	-	D31	-	-	~

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	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 properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
					Night: Earthworks[13]										
612663	Hoo Green Lane, Mere	62/65[A]	-/-[B]	-/-[C]	Day: General site works	NA	6	R	T	-	-	-	-	-	
612665	Warrington Road, Mere	63/66[C]	-/31[C]	-/31[C]	Day: General site works Evening: Highway works Night: Highway works[13]	NA	3	R	T	H	-	-	-	-	
612669	Bucklow Hill Lane, Mere	51/54[A]	-/-[A]	-/-[C]	Day: Earthworks	NA	2	R	T	-	-	-	-	-	
612670	Bowden View Lane, Mere	60/64[A]	-/-[A]	-/-[B]	Day: General site works	NA	8	R	T	-	-	-	-	-	
612671	Park Farm, Ditchfield Lane, High Legh	53/58[A]	-/-[B]	-/-[C]	Day: Highway works	NA	1	R	T	H	-	-	-	-	
612674	Warrington Road, Mere	67/73[C]	-/35[C]	-/35[C]	Day: Highway works Evening: Highway works Night: Highway works[13]	NA	1	R	T	H	-	-	-	-	
612682	Wrenshot Lane, High Legh	57/62[C]	-/-[C]	-/-[C]	Day: Highway works	NA	2	R	T	H	-	-	-	-	

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	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 properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
612687	Wrenshot House, Wrenshot Lane, High Legh	58/62[A]	-/-[B]	-/-[C]	Day: Earthworks	NA	1	R	T	-	-	-	-	-	
612692	Wrenshot Cottage, Wrenshot Lane, High Legh	57/60[A]	-/-[B]	-/-[C]	Day: General site works	NA	1	R	T	-	-	-	-	-	
612698	Woodside Farm, Wrenshot Lane, High Legh	54/57[A]	-/-[B]	-/-[C]	Day: Culvert construction	NA	1	R	T	-	-	-	-	-	
612700	Chapel Lane, Mere	61/68[A]	-/31[A]	-/31[C]	Day: Culvert construction Evening: Culvert construction Night: Culvert construction[13]	A	5	R	T	-	-	D5	CT	-	MA03-C-C2[14]
612704	Wrenshot Lane, High Legh	55/58[A]	-/-[B]	-/-[C]	Day: Culvert construction	NA	1	R	T	-	-	-	-	-	

[14] This community extends across the boundary between the Pickmere to Agden and Hulseheath area (MA03), and the Hulseheath to Manchester Airport area (MA06), with approximately 15 properties being in the Pickmere to Agden and Hulseheath area (MA03), and approximately five properties in the Hulseheath to Manchester Airport area (MA06). For further information, see Volume 2, Community Area report: Hulseheath to Manchester Airport (MA06), Section 13 and Volume 5: Appendix SV-002-0MA06.

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	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 properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
612706	Chapel Lane, Mere	68/72[A]	-/32[A]	-/32[C]	Day: Highway works Evening: Culvert construction Night: Culvert construction[13]	A	2	R	T	-	-	D8	CT	-	MA03-C-C2[14]
612712	Broom Manor, Peacock Lane, High Legh	64/71[A]	-/32[A]	-/32[C]	Day: Highway works Evening: Earthworks Night: Earthworks[13]	A	1	R	T	-	-	D10	CT	-	MA03-C-C2[14]
612732	Runnymede, Thowler Lane, Millington	67/72[A]	31/34[A]	31/34[C]	Day: Highway works Evening: Highway works Night: Highway works[13]	A	1	R	T	-	-	D36	CT	-	MA03-C-C2[14]
612736	Five Acres, Peacock Lane, High Legh	68/74[A]	31/35[A]	31/35[C]	Day: Earthworks Evening: Earthworks Night: Earthworks[13]	A	1	R	T	-	-	D33	CT, V	-	MA03-C-C2[14]

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	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 properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
612745	Little Moss Farm, Peacock Lane, High Legh	63/67[A]	-/-[A]	-/-[B]	Day: Earthworks	A	1	R	T	-	-	D7	CT	-	MA03-C-C2[14]
612747	Moss Farm, Peacock Lane, High Legh	68/73[A]	30/33[A]	30/33[B]	Day: General site works Evening: General site works Night: General site works[13]	A	1	R	T	-	-	D34	CT, V	-	MA03-C-C2[14]
612751	Thowler Lane, Millington	61/66[A]	-/-[A]	-/-[C]	Day: Highway works	A	5	R	T	-	-	D1	-	-	MA03-C-C2[14]
612757	Moss Lane, High Legh	56/60[A]	-/-[A]	-/-[C]	Day: General site works	NA	3	R	T	-	-	-	-	-	
612779	Middle Moss Farm, Agden Lane, Agden	66/72[A]	-/34[A]	-/34[C]	Day: Highway works Evening: Highway works Night: Highway works[13]	A	1	R	T	-	-	D14	CT, V	-	~
612780	Froghall Lane, High Legh	56/60[A]	-/-[A]	-/-[B]	Day: Overbridge construction	NA	2	R	T	-	-	-	-	-	
612783	Boothbank Cottage, Boothbank Lane, Agden	58/65[A]	-/-[A]	-/-[C]	Day: Highway works	NA	1	R	T	-	-	-	-	-	

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	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 properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
612796	Agden Lane, High Legh	77/80[A]	39/42[B]	39/42[C]	Day: Highway works Evening: Highway works Night: Highway works[13]	S	1	R	T	H	-	D13	V	NI	~
612805	Froghall Lane, High Legh	53/56[C]	-/-[C]	-/-[C]	Day: General site works	NA	4	R	T	H	-	-	-	-	
612808	Roundstone House, Boothbank Lane, Agden	53/58[A]	-/-[B]	-/-[C]	Day: Overbridge construction	NA	1	R	T	-	-	-	-	-	
612820	Agden Lane, Lymm	52/56[B]	-/-[C]	-/-[C]	Day: Earthworks	NA	2	R	T	H	-	-	-	-	
612829	Hawthorn Cottage, Froghall Lane, Lymm	50/54[A]	-/-[B]	-/-[C]	Day: General site works	NA	1	R	T	H	-	-	-	-	
612834	Agden Lane, Lymm	57/63[A]	-/-[A]	-/-[C]	Day: Earthworks	NA	7	R	T	-	-	-	-	-	
612839[15]	Spode Green Lane, Little Bollington	55/58[A]	-/-[B]	-/-[C]	Day: Earthworks	NA	3	R	T	H	-	-	-	-	
612842[15]	Spode Green Lane, Little Bollington	53/57[A]	-/-[B]	-/-[C]	Day: Earthworks	NA	4	R	T	-	-	-	-	-	
612847[15]	Spode Green Lane, Little Bollington	53/56[A]	-/-[A]	-/-[C]	Day: Earthworks	NA	3	R	T	-	-	-	-	-	

[15] For this location see Volume 5, Sound, noise and vibration Map Book: map SV-03-319.

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	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 properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
612861	Brook Cottage, Pickmere Lane, Pickmere	61/64[C]	-/-[C]	-/-[C]	Day: General site works	NA	1	R	T	H	-	-	-	-	
612887	Froghall Lane, High Legh	53/57[A]	-/-[B]	-/-[C]	Day: General site works	NA	100	R	T	-	-	-	-	-	
612891	Brookside Cottage, Lymm Road, Little Bollington	52/57[C]	-/-[C]	-/-[C]	Day: Culvert construction	NA	2	R	T	H	-	-	-	-	
613037	Moss Lane, High Legh	63/69[A]	-/31[A]	-/31[C]	Day: Highway works Evening: Highway works Night: Highway works[13]	A	1	R	T	-	-	D10	-	-	~
613050	Hoo Green Lane, Mere	60/64[A]	-/-[B]	-/-[C]	Day: Highway works	NA	8	R	T	-	-	-	-	-	
613052	Warrington Road, Mere	59/63[A]	-/-[C]	-/-[C]	Day: Highway works	NA	4	R	T	H	-	-	-	-	
613074	Warrington Road, Mere	59/63[A]	-/-[A]	-/-[B]	Day: Highway works	NA	1	R	T	-	-	-	-	-	
613075	Old Hall Lane, Over Tabley	54/57[A]	-/-[A]	-/-[C]	Day: Earthworks	NA	4	R	T	-	-	-	-	-	
613076	Agden Lane, High Legh	59/64[A]	-/-[A]	-/-[C]	Day: Retaining walls construction	NA	1	R	T	-	-	-	-	-	

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	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 properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
613077	Agden Lane, High Legh	67/72[A]	-/35[B]	-/35[C]	Day: Highway works Evening: Highway works Night: Highway works[13]	A	1	R	T	H	-	D11	V	-	~
613095	Agden Lane, Lymm	54/60[A]	-/-[A]	-/-[B]	Day: Earthworks	NA	4	R	T	-	-	-	-	-	
613211	Agden Hall Farm, Agden Lane, Lymm and committed development (Map Book ref.: MA03/050)	51/56[A]	-/-[A]	-/-[C]	Day: Earthworks	NA	14	R	T	-	-	-	-	-	
617504	Agden Brow, Lymm	52/55[B]	-/-[C]	-/-[C]	Day: Earthworks	NA	17	R	T	H	-	-	-	-	
617505	Agden Brow, Lymm	54/57[A]	-/-[A]	-/-[B]	Day: Earthworks	NA	5	R	T	-	-	-	-	-	
617508	Hillside, Agden Brow	58/61[B]	-/-[C]	-/-[C]	Day: Earthworks	NA	3	R	T	H	-	-	-	-	
617509	Agden Brow, Lymm	70/75[C]	32/35[C]	32/35[C]	Day: General site works Evening: General site works Night: General site works[13]	NA	2	R	T	H	-	-	-	-	

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	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 properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
617512	Lymm Road, Little Bollington	53/58[B]	-/-[C]	-/-[C]	Day: Pond construction	NA	1	R	T	H	-	-	-	-	
617513	Lymm Road, Little Bollington	53/57[B]	-/-[C]	-/-[C]	Day: Earthworks	NA	1	R	T	H	-	-	-	-	
617519	Woolstencroft Farm, Spring Lane, Lymm	53/57[A]	-/-[A]	-/-[A]	Day: Highway works	NA	1	R	T	-	-	-	-	-	
618241	Agden Brow, Lymm	59/62[A]	-/-[B]	-/-[C]	Day: Earthworks	NA	3	R	T	-	-	-	-	-	
618242	Agden Brow, Lymm	60/64[A]	-/-[C]	-/-[C]	Day: Earthworks	NA	1	R	T	H	-	-	-	-	

Table 6: Assessment of construction noise at non-residential receptors

Assessment location		Impact criteria					Significance criteria								Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the façade		Change during month with highest noise level		Construction activity resulting in highest forecast noise levels	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Night 23:00 – 07:00	Day 07:00 – 19:00	Night 23:00 – 07:00										
612626	Style Matters (Lower Sensitivity Office), Pickmere, Knutsford	55/59	-/-	8	-	Day: Highway works	1	A4	T	-	-	-	-	-	
612643	Heyrose Golf Club (Wedding Venue), Budworth Road, Knutsford	54/57	-/-	10	-	Day: Culvert construction	1	A2	T	-	-	D31	-	-	MA03-C-N1
612664	Knutsford (Mere) Hotel, Warrington Road, Knutsford	58/61	-/-	1	-	Day: General site works	1	A3	T	H	-	-	-	-	$
612677	Mere Court Hotel, Warrington Road, Knutsford	67/73	31/35	20	-	Day: Earthworks Night: Earthworks[13]	1	A3	T	-	-	D55	V	-	MA03-C-N3
612681	Tabley Brook Kennels and Cattery (Lower Sensitivity Office), Budworth Road, Tabley	60/65	-/31	12	-	Day: General site works Night: General site works[13]	1	A4	T	-	-	-	-	-	
612694	High Legh Park Golf Club (Wedding Venue), Warrington Road, High Legh	52/55	-/-	2	-	Day: Earthworks	1	A2	T	-	-	-	-	-	$

Assessment location		Impact criteria					Significance criteria								Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the façade		Change during month with highest noise level		Construction activity resulting in highest forecast noise levels	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Night 23:00 – 07:00	Day 07:00 – 19:00	Night 23:00 – 07:00										
612862	Pickmere and Wincham Methodist Church, Pickmere Lane, Pickmere	49/51	-/-	-	-	Day: Underbridge construction	1	A2	T	H	-	-	-	-	
613005	Chain & Conveyor (Offices), Winterbottom Lane, Knutsford	56/61	-/-	10	-	Day: Culvert construction	1	A4	T	-	-	D15	-	-	MA03-C-N2
613094	The Mere Day Nursery, Chester Road, Knutsford	50/54	-/-	-	-	Day: Underbridge construction	1	A3	T	H	-	-	-	-	$

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 for a given road has been predicted. Data have 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 8.

4.2.11 Explanation of the information within Table 8 is provided in Volume 5, Appendix SV- 001-00000, with the following additional notes in Table 7.

Table 7: Explanatory notes for assessment results – indirect construction effects

Colour	Explanation
	Where the significant effect column is highlighted, then a significant effect is identified on nearby communities.
	Yellow denotes a minor impact – a change is of ≥ 3dB – <5dB, or ≥ 1dB – <3dB where a high existing sound level is identified.
	Orange denotes a moderate impact – a change is of ≥5dB – <10dB, or ≥3dB – <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.
~	When considered under the significance criteria set out in Volume 5: Appendix SV-001-00000, Annex A, Section 1.3, these adverse effects are not considered to be significant on a community basis.
*	For non-residential receptors this indicates the predicted noise levels are above screening criteria which, based upon further qualitative receptor information, (see footnote) does not give rise to a significant effect.
O, V	Combined Impact: If noise or vibration impacts from other construction activities occur at this location: onsite activities (O) or construction vibration (V).
R, NR	Number of properties affected (approx.) – identified by type of receptor: R: total number of residential (total number of residential in community). NR: total number of non-residential.

Table 8: Assessment of construction traffic noise levels

Road name	Portion of road affected	Number of properties affected (approx.)	Daytime traffic sound levels $L_{Aeq,16hour}$ dB			Change compared to current traffic sound level (dB)		Combined impact	Significant effect
			Without the Proposed Scheme (2030)	Typical month during construction	Peak month during construction	Typical month during construction	Peak month during construction		
B5391 Pickmere Lane	Between Park Lane and Flittogate Lane	R:15 (15) NR:0	65.7	66.5	66.9	0.8	1.2	-	~
B5391 Pickmere Lane	Between Flittogate Lane and Budworth Road	R:5 (0) NR:0	65.7	66.9	67.4	1.2	1.7	O, V	~
Budworth Road	Between Old Hall Lane and Cann Lane	R:12 (5) NR:0	54.9	56.2	58.2	1.3	3.3	O, V	~
Budworth Road	Between Old Hall Lane and B5391 Pickmere Lane	R:1 (0) NR:0	59.3	62.6	65.6	3.3	6.3	-	~
B5391 Pickmere Lane	Between Budworth Road and A556	R:6 (5) NR:0	66.5	67.9	68.8	1.4	2.3	-	~
B5569 Chester Road	Between the A50 and A5304 Mereside Road	R:50 (50) NR:0	59.1	60.4	63.6	1.3	4.5	-	MA03-C-C3
Warrington Road	Between A5304 Mereside Road and Clamhunger Lane	R:3 (3) NR:0	69.6	70.6	70.8	1.0	1.2	-	~

Road name	Portion of road affected	Number of properties affected (approx.)	Daytime traffic sound levels $L_{Aeq,16hour}$ dB			Change compared to current traffic sound level (dB)		Combined impact	Significant effect
			Without the Proposed Scheme (2030)	Typical month during construction	Peak month during construction	Typical month during construction	Peak month during construction		
Chapel Lane	Between B5569 Chester Road and Hulseheath Lane	R:19 (19) NR:0	50.1	55.3	58.8	5.2	8.7	-	MA06-C-C4[16]
Chapel Lane/Peacock Lane (existing)[17]	Between Hulseheath Lane and Back Lane	R:7 (7) NR:0	50.1	55.0	57.9	4.9	7.8	O	MA03-C-C2[18]
Peacock Lane (existing)[17]	Between Back Lane and Moss Lane	R:4 (4) NR:0	25.9	55.3	59.3	29.4	33.4	O, V	~
A50	Between Bucklow Hill Lane and Wrenshot Lane	R:4 (4) NR:0	68.6	69.5	70.2	0.9	1.6		-
A50	Between Wrenshot Lane and Halliwells Brow	R:3 (3) NR:0	67.3	68.2	69.1	0.9	1.8		-

[16] This community extends across the boundary between the Pickmere to Agden and Hulseheath area (MA03), and the Hulseheath to Manchester Airport area (MA06), with fewer than five properties being in the Pickmere to Agden and Hulseheath area (MA03), and approximately 20 properties in the Hulseheath to Manchester Airport area (MA06). For further information, see Volume 2, Community Area report: Hulseheath to Manchester Airport (MA06), Section 13 and Volume 5: Appendix SV-002-0MA06.

[17] Note this road is realigned during a later phase of construction. The results presented are representative of the phase which results in the greatest change in noise level to the community.

[18] This community extends across the boundary between the Pickmere to Agden and Hulseheath area (MA03), and the Hulseheath to Manchester Airport area (MA06), with approximately 10 properties being in the Pickmere to Agden and Hulseheath area (MA03), and fewer than five properties in the Hulseheath to Manchester Airport area (MA06). For further information, see Volume 2, Community Area report: Hulseheath to Manchester Airport (MA06), Section 13 and Volume 5: Appendix SV-002-0MA06.

Road name	Portion of road affected	Number of properties affected (approx.)	Daytime traffic sound levels $L_{Aeq,16hour}$ dB			Change compared to current traffic sound level (dB)		Combined impact	Significant effect
			Without the Proposed Scheme (2030)	Typical month during construction	Peak month during construction	Typical month during construction	Peak month during construction		
A50	Between West Lane and Swineyard Lane	R:2 (2) NR:0	68.2	69.0	69.7	0.8	1.5		-
A50	Between Swineyard Lane and Heath Lane	R:1 NR:0	66.9	67.9	68.0	1.0	1.1		-
A50	Between Heath Lane and Cherry Lane	R:2 (2) NR:0	67.4	68.4	68.7	1.0	1.3		-
Wrenshot Lane	Between A50 and Broad Oak Lane	R:5 (5) NR:0	53.3	54.9	56.8	1.6	3.5		-
Agden Lane/Agden Park Lane	Between Boothbank Lane and Agden Brow	R:1 NR:0	56.5	58.7	59.8	2.2	3.3	O, V	-
A56 Lymm Road	Between Reddy Lane and the Proposed Scheme	R:6 (5) NR:0	68.9	69.7	70.4	0.8	1.5		-

4.2.12 There are no non-residential properties that are likely to be affected by changes in traffic noise.

Airborne sound levels used in other assessments

4.2.13 The construction sound results contained in this document have been used by other disciplines, namely agriculture, historic environment, landscape and visual, communities and socio economics, in their assessments. This includes the information in Table 5 and Table 6. Locations of interest to these other disciplines which may not appear in Table 5 or Table 6 are presented in Table 9.

Table 9: Construction airborne sound levels for use in cross discipline assessments

Assessment location ID		Impact information					Discipline					
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the façade		Change during month with highest noise level		Construction activity resulting in highest forecast noise levels	Agriculture	Communities	Socio-economic	Ecology	Heritage	Landscape
		Day 07:00 – 19:00	Night 23:00 – 07:00	Day 07:00 – 19:00	Night 23:00 – 07:00							
612892	Hollowood Farm (Livestock), Old Hall Lane, Knutsford (MA03/17)	71/76	33/35	13	0	Day: General site works Night: General site works[13]	Y	-	-	-	-	-
612893	Winterbottom Farm (Livestock), Winterbottom Lane, Mere (MA03/20)	63/68	-/-	13	0	Day: Highway works	Y	-	-	-	-	-

hs2.org.uk

High Speed Two (HS2) Limited
Two Snowhill
Snow Hill Queensway
Birmingham B4 6GA
Freephone: 08081 434 434
Minicom: 08081 456 472
Email: HS2enquiries@hs2.org.uk