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HS2

High Speed Rail (Crewe – Manchester) Environmental Statement

Volume 5: Appendix SV-002-0MA06

Sound, noise and vibration

MA06: Hulseheath to Manchester Airport Baseline and construction sound, noise and vibration report

M264

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Department for Transport

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1 Introduction

1.1.1 This report is an appendix to the sound, noise and vibration assessment relating to the Hulseheath to Manchester Airport area (MA06). 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 MA06 provides the baseline and predicted levels as described above.

1.1.4 The third appendix is also specific to MA06, and provides detailed operational sound, noise and vibration levels, see Volume 5, Appendix SV-003-0MA06. 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 MA06, the guidance within the following documents has been considered when applying the impact and significance criteria set out in the Environmental Impact Assessment Scope and Methodology Report (SMR), (see Volume 5: Appendix CT-001-00001):

- the Trafford Local Plan: Core Strategy (adopted 2012)[1];
- adopted Cheshire East Local Plan Strategy 2010-2030 (2017)[2]; and
- adopted Manchester City Council Core Strategy 2012-2027 (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 Trafford Metropolitan Borough Council (TMBC), Cheshire East Council (CEC) and Manchester City Council (MCC)[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. TMBC, CEC and MCC officers were also invited to attend baseline sound measurements in this area and witness the measurement procedures used.

[1] 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.

[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] Manchester City Council (2012), *Manchester's Local Development Framework, Core Strategy Development Plan Document*. Available online at: http://www.manchester.gov.uk/download/downloads/id/18981/final_core_strategy.pdf.

[4] Meetings held on 16 August 2018 with MCC, 6 July 2018 with CEC and 28 June 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: Hulseheath to Manchester Airport (MA06), 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 Hulseheath to Manchester Airport area is characterised by a mix of villages, hamlets and isolated residential properties which becomes predominantly urban towards Hale in the north-east of the area along with Manchester Airport and associated commercial premises. The sound environment is generally dominated by local and distant road traffic. There are also contributions from trains, low flying aircraft to and from Manchester Airport, commercial vehicles operating around the industrial areas, and natural and agricultural sounds.

3.1.2 There are several main roads that contribute to the sound environment near to the route of the Proposed Scheme within the Hulseheath to Manchester Airport area. These include the M56 affecting Booth Bank, Ashley, Thorns Green, Ringway, Warburton Green, Hale Barns and Davenport Green; the A556, which affects Bucklow Hill; and the A538 Hale Road, which affects Hale Barns. Railway sound from the Mid-Cheshire Line also contributes to the sound environment near to the route of the Proposed Scheme within the Ashley area.

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 Booth Bank is characterised by sound from the M56 to the north, and local roads. Properties facing the route of the Proposed Scheme typically experience daytime sound levels of 50dB – 55dB and 45dB – 50dB during the night-time.

3.1.5 The community of Ashley is characterised by sound from the M56 to the north, Ashley Road, local roads, and the Mid-Cheshire Line that passes through Ashley from south to north. Properties in the centre of Ashley typically experience daytime sound levels of 55dB – 65dB and 45dB – 60dB during the night-time.

3.1.6 The community of Thorns Green is characterised by sound from the M56 to the north, local roads and aircraft to/from Manchester Airport. Properties facing the route of the Proposed Scheme typically experience daytime sound levels of 50dB – 60dB and 40dB – 55dB during the night-time.

3.1.7 The area of Hale Bank is characterised by sound from the M56 to the north, local roads and aircraft to/from Manchester Airport. Properties facing the route of the Proposed Scheme typically experience daytime sound levels of 55dB – 65dB and 50dB – 55dB during the night-time.

3.1.8 The residential areas of Warburton Green and Hale Barns are characterised by sound from the M56 to the south, the A538 Hale Road and local roads. Properties facing the M56 and the

route of the Proposed Scheme typically experience daytime sound levels of around 60dB and 55dB at night. Properties set further back within the residential area typically experience sound levels of 45dB – 55dB and 40dB – 50dB during the daytime and night-time respectively.

3.1.9 The community of Davenport Green is characterised by sound from the M56 to the south-east and local roads. Properties facing the M56 and the route of the Proposed Scheme typically experience daytime sound levels of 55dB – 70dB and 50dB – 65dB during the night-time.

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 MA06, seven 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:

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

3.3.6 An additional nine 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 Hulseheath to Manchester Airport area, noise from all major roads including the M56, the A538 Hale Road and the A556, approximately 20 other roads, and the Mid-Cheshire line 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 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 traffic flow, composition, speed, and in some cases road surface using the methodology from the Calculation of Road Traffic Noise.

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

[6] Department of Transport (1995), *Calculation of Railway 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[7] 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:
  - $L_{pAeq,16hourr}$ 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
  - night-time L_{pAeq} sound pressure level (Monday to Sunday 23:00 – 07:00).

[7] 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.

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
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 $L_{pAFmax,5min}$	
612666	Breach House Lane, Mobberley		54	54	51	54	51	56	61	7,A,i,b
612667	Breach Cottage, Breach House Lane, Mobberley	ML712707	55	52	47	54	47	51	78	1,A,i,a
612680	Sugar Brook Farm (Bed and Breakfast), Mobberley Road, Ashley		60	55	54	60	54	59	64	3,A,i,b
612683	Birtles Farm, Ashley Road, Ashley		44	41	38	44	38	43	52	3,A,i,b
612685	Lower House Farm, Mobberley Road, Ashley		44	42	38	45	39	43	60	5,A,i,b
612689	Castle Mill Lane, Ashley	ML712708	54	52	51	53	51	53	77	1,A,i,a
612690	Brickhill Lane, Ashley	ML712708	54	52	51	53	51	53	77	1,A,i,a
612693	Lamb Lane, Ashley		46	44	39	46	40	45	56	3,A,i,b
612699	Shaw Green Farm, Marsh Lane, Rostherne		45	43	39	46	40	45	50	3,A,i,b
612701	Ashley Road, Ashley		51	48	44	51	46	51	56	3,A,i,b
612702	Mill Lane, Ashley		55	54	51	55	52	56	61	5,A,i,b
612703	Hunters Close, Castle Mill Lane, Ashley		59	56	55	61	56	61	66	3,A,i,b
612705	Ashlar, Back Lane, Knutsford		45	42	38	45	39	44	49	3,A,i,b
612707	Millington Hall Lane, Millington		55	51	49	55	50	55	60	3,A,i,b
612708	Chapel House Farm, Castle Mill Lane, Ashley		55	52	49	56	51	56	61	3,A,i,b
612711	Mobberley Road, Ashley		55	51	49	55	50	55	66	3,A,i,b
612713	Back Lane Farm, Back Lane, Ashley		42	39	35	42	36	41	52	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 $L_{pAFmax,5min}$	
612714	Birkin Farm (Holiday Let), Ashley Road, Ashley		54	51	48	55	50	55	60	3,A,i,b
612716	Birkinheath Cottage, Birkinheath Lane, Ashley		48	46	42	49	43	48	53	3,A,i,b
612718	Stock Farm (Holiday Let), Ashley Road, Ashley		54	51	48	55	50	55	60	3,A,i,b
612719	Back Lane, Ashley		50	48	44	51	45	50	55	3,A,i,b
612720	Millington Hall Lane, Millington	ML712701	52	50	50	52	50	53	83	2,A,i,a
612721	School House, Back Lane, Ashley		54	51	47	54	49	54	59	3,A,i,a
612722	Hunters Moon, Rostherne Lane, Rostherne		55	54	52	54	49	54	59	3,A,i,b
612724	Briddon Weir Farm, Birkinheath Lane, Ashley		49	46	42	49	43	48	53	3,A,i,b
612725	Ashley Road, Ashley		53	51	47	54	48	52	73	5,A,i,b
612726	Castle Mill Lane, Ashley		61	58	56	63	57	62	67	3,A,i,b
612727	Bucklow Manor Care Home, Chester Road, Bucklow Hill		64	61	59	64	59	64	69	3,A,i,b
612728	Egerton Moss, Ashley		66	62	60	67	62	67	72	3,A,i,b
612729	Back Lane, Ashley		54	51	48	55	49	54	63	3,A,i,a
612730	Moss House Farm, Thowler Lane, Millington	ML712611	51	49	46	51	46	51	69	1,A,i,a
612731	Lower Thornsgreen Farm, Back Lane, Ashley		53	50	46	53	47	52	57	3,A,i,b
612735	Ashley Road, Ashley		62	59	56	63	58	63	78	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 $L_{pAFmax,5min}$	
612738	Sycamore Cottage, Ashley Road, Ashley		56	53	50	57	52	57	62	3,A,i,b
612739	Castle Mill Lane, Ashley		55	53	49	56	50	55	60	3,A,i,b
612740	Birkin House, Birkinheath Lane, Ashley		53	50	46	53	47	52	57	3,A,i,b
612741	Sunbank Lane, Ringway		57	57	52	54	48[8]	53	58	3,A,i,b
612742	St Elizabeth's Church, Ashley Road, Ashley		60	56	54	60	56	61	69	3,A,i,b
612743	Cow Lane, Ashley		66	62	60	65	59	64	69	3,A,i,a
612749	Sunbank Lane, Ringway		53	51	47	53	47	52	57	3,A,i,b
612750	Castle Mill Lane, Ashley		60	57	54	61	56	61	66	3,A,i,b
612753	Millington Lane, Millington		52	49	47	52	47	52	57	3,A,i,b
612754	Millington Hall Lane, Millington		49	45	43	49	44	49	54	3,A,i,b
612759	Mere Covert Cottage, Cherry Tree Lane, Rostherne		52	49	46	54	48	53	58	3,A,i,b
612762	Keepers Cottage, Sunbank Lane, Ringway		60	58	54	59	53	58	63	3,A,i,b
612763	Rivershill Gardens, Hale Barns		61	59	54	61	55	60	65	3,A,i,b
612764	Newhall Cottages, Millington Lane, Millington		51	47	45	51	46	51	56	3,A,i,b
612765	Haslemere Avenue, Hale Barns		59	57	53	60	53	58	63	3,A,i,b

[8] Decrease in predicted baseline sound levels from 2025 to 2038 due to forecast decreases 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 $L_{pAFmax,5min}$	
612766	Thowler Lane, Millington		52	48	46	53	51[9]	56	61	3,A,i,b
612768	The Old Office, Ashley Road, Ashley		58	55	51	58	52	57	62	3,A,i,b
612769	Ridge Avenue, Hale Barns		57	56	52	55	49	54	59	3,A,i,b
612771	Warburton Drive, Hale Drive		58	55	51	58	52	57	62	3,A,i,b
612773	Bankside, Hale Barns		55	52	48	55	49	54	59	3,A,i,b
612775	Dobb Hedge Close, Hale Barns		54	52	48	55	49	54	59	3,A,i,b
612776	Ryecroft Farm, Ashley Mill Lane, Ashley		60	57	53	60	54	59	64	3,A,i,b
612781	Cherry Tree Lane, Rostherne		58	55	53	59	54	59	64	3,A,i,b
612782	Warburton Close, Hale Barns		56	54	49	56	50	55	60	3,A,i,b
612784	Carrwood, Hale Barns		49	46	42	49	43	48	53	3,A,i,b
612787	Ashley Hall, Ashley Road, Ashley		52	49	45	52	46	51	58	3,A,i,b
612788	Green Gate, Hale Barns		52	49	45	51	45	50	55	3,A,i,b
612789	Cherry Tree House (Office), Cherry Tree Lane, Rostherne		54	51	49	55	50	55	60	3,A,i,b
612793	Tanyard Drive, Hale Barns		49	46	42	49	43	48	53	3,A,i,b
612794	Boothbank House, Millington Lane, Millington		50	47	45	50	46	51	56	3,A,i,b
612798	Marlfield Road, Hale Barns		52	50	45	52	46	51	56	3,A,i,b
612799	Marlfield Road, Hale Barns		52	49	45	52	46	51	56	3,A,i,b

[9] Increase in predicted baseline sound levels from 2025 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 $L_{pAFmax,5min}$	
612800	World Cargo Centre (Lower Sensitivity Offices), Manchester Airport, Manchester		62	60	56	63	57	62	67	3,A,i,b
612801	The Children's Adventure Farm Trust, Boothbank Lane, Agden		57	53	51	56	53	58	63	3,A,i,b
612803	Coe Lane, Millington		55	51	49	55	50	55	60	3,A,i,b
612807	Reddy Lane, Millington		53	50	47	53	49	54	59	3,A,i,b
612810	Green Gate, Hale Barns		50	48	44	50	44	49	54	3,A,i,b
612811	Burnside, Hale Barns		57	54	50	57	50	55	60	3,A,i,b
612814	World Freight Terminal, Manchester Airport, Manchester		60	58	54	61	55	60	65	3,A,i,b
612816	Manchester Airport Hotels, Runger Lane, Manchester and committed development (Map Book ref.: MA06/073)		69	67	62	69	63	68	73	3,A,i,b
612817	Burnside, Hale Barns		51	49	44	51	45	50	55	3,A,i,b
612818	Warren Drive, Hale Barns		50	47	43	50	44	49	54	3,A,i,b
612824	Hale Road, Hale Barns		58	56	51	58	52	57	62	3,A,i,b
612825	High Elm Road, Hale Barns		52	49	46	51	45	50	55	3,A,i,b
612826	Winmarith Drive, Hale Barns		48	45	41	48	42	47	52	3,A,i,b
612827	Reddy Lane, Millington		64	61	59	64	59	64	69	3,A,i,b
612830	Yarwood Heath Farm, Bow Lane, Bowdon		58	55	51	58	52	57	62	3,A,i,b
612831	Coe Lane, Millington		62	59	57	62	57	62	67	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 $L_{pAFmax,5min}$	
612832	Hasty Lane, Ringway		55	52	48	55	49	54	59	3,A,i,b
612836	Hasty Lane, Ringway		65	63	59	66	60	65	70	3,A,i,b
612843	Reddy Lane, Millington		57	53	51	57	52	57	62	3,A,i,b
612845	Pool Bank Farm, Bow Lane, Bowdon		52	50	46	53	47	52	57	3,A,i,b
612846	Rydal Drive, Hale Barns		50	48	43	50	44	49	54	3,A,i,b
612849	Brooks Drive, Hale Barns		49	47	43	50	44	49	54	3,A,i,b
612851	Reddy Lane, Little Bollington		50	47	45	50	45	50	55	3,A,i,b
612853	Thorley Lane, Ringway		63	61	56	64	58	63	68	3,A,i,b
612854	Brooks Drive, Hale Barns		51	48	44	51	45	50	55	3,A,i,b
612855	Thorley Lane, Ringway		68	65	61	67	61	66	71	3,A,i,b
612856	Shay Lane, Hale Barns		59	56	53	57	52	57	62	3,A,i,b
612858	Shay Lane, Hale Barns		65	62	59	62	58	63	68	3,A,i,b
612859	Roaring Gate Lane, Ringway		70	67	64	70	64	69	74	3,A,i,b
612860	Roaring Gate Lane, Hale		59	57	53	59	53	58	63	3,A,i,b
612880	Hale Road, Hale Barns		54	52	48	55	48	53	58	3,A,i,b
612883	Burnside, Hale Barns		55	53	49	55	49	54	59	3,A,i,b
613030	Back Lane, Ashley		49	46	42	49	43	48	53	3,A,i,b
613032	Mereside Farm Office (Lower Sensitivity Office), Millington Lane, Millington		64	60	58	65	60	65	70	3,A,i,b
613035	Mereside Farm, Millington Lane, Millington		66	62	60	66	61	66	71	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 $L_{pAFmax,5min}$	
613042	Rostherne Mere SSSI[10]		51	47	45	51	46	51	56	3,A,i,b
613043	Rostherne Mere SSSI		53	49	47	53	48	53	58	3,A,i,b
613044	Rostherne Mere SSSI		50	47	45	51	45	50	55	3,A,i,b
613045	Rostherne Mere SSSI		45	42	39	45	40	45	50	3,A,i,b
613046	Ashley Road, Ashley		64	60	57	64	60	65	70	3,A,i,b
613048	Sunbank Lane, Ringway		52	50	46	52	46	51	56	3,A,i,b
613079	Little Lodge and South Arden Lodge (Holiday Let), Mobberley Road, Ashley		57	53	51	57	51	56	61	3,A,i,b
613081	Hough Green, Ashley		57	55	50	57	51	55	80	5,A,i,b
613082	Hough Green, Ashley		55	54	49	56	50	54	81	5,A,i,b
613085	Warburton Drive, Hale Drive		51	49	44	51	45	50	55	3,A,i,b
613086	Warburton Drive, Hale Drive		52	49	45	52	46	51	56	3,A,i,b
613087	Warburton Close, Hale Barns		51	48	44	51	45	50	55	3,A,i,b
613088	Warburton Close, Hale Barns		52	50	46	52	46	51	56	3,A,i,b
613089	Hale Road, Hale Barns		53	51	46	53	47	52	57	3,A,i,b
613090	Hale Road, Hale Barns		57	55	50	57	51	56	61	3,A,i,b
613091	Hale Road, Hale Barns		56	53	49	56	50	55	60	3,A,i,b
613093	Cornmill Cottage, Pepper Street, Knutsford		67	64	61	66	61	66	71	5,A,i,b

[10] Site of Special Scientific Interest.

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 $L_{pAFmax,5min}$	
613200	Castle Mill Lane, Ashley		59	56	53	60	55	60	65	3,A,i,b
613201	Primrose Farm, Mobberley Road, Ashley		52	48	47	52	47	52	60	3,A,i,b
613202	Boundary Cottage, Mobberley Road, Ashley		60	56	54	59	54	59	70	3,A,i,b
613205	Amazon UK Services Ltd, Manchester		60	57	53	60	54	59	64	3,A,i,b
613217	Station Yard, Ashley Road, Ashley and committed development (Map Book ref.: MA06/152 and MA06/194)		59	58	52	59	52	59	86	5,A,i,b
613218	Ashley Smithy Garage (Office), Mobberley Road, Ashely and committed development (Map Book ref.: MA06/203)		57	53	51	56	51	56	68	3,A,i,b
613219	World Logisitics Hub (Lower Sensitivity Offices), Sunbank Lane and committed development (Map Book ref.: MA06/157, MA06/158, MA06/261, MA06/072 and MA06/071)		58	56	52	58	52	57	62	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[11] and planning practice on noise[12] 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: Hulseheath to Manchester Airport (MA06), Section 13.

[11] *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.

[12] Ministry of Housing, Communities & Local Government (2019), *National Planning Practice Guidance – Noise*. Available online 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: Hulseheath to Manchester Airport (MA06), 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.

Symbol	Explanation
V1 – V4	Type of receptor (ground-borne vibration) – (V1) vibration sensitive research and manufacturing; hospitals with vibration sensitive equipment/operations; universities with vibration sensitive 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 $\leq 35dBL_{pAeq}$ 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 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							Significant effect
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]	
			Day 07:00 – 23:00	Night 23:00 – 07:00									
612680	Sugar Brook Farm (Bed and Breakfast), Mobberley Road, Ashley	0.6	0.08/0.37	-/-	Site set up (vibratory roller)	A	1	V2	T	-	O	D <1	[13]
612705	Ashlar, Back Lane, Knutsford	0.2	0.04/0.16	-/-	Finishing works (vibratory roller)	NA	1	R	T	-	-		
612708	Chapel House Farm, Castle Mill Lane, Ashley	0.6	0.08/0.60	-/-	Site set up (vibratory roller)	A	1	R	T	-	O	D 3	~
612711	Mobberley Road, Ashley	0.2	0.04/0.12	-/-	Site set up (vibratory roller)	NA	2	R	T	-	-		
612713	Back Lane Farm, Back Lane, Ashley	0.7	0.04/0.48	-/-	Road embankment works (vibratory roller)	A	1	R	T	-	O	D <1	[13]
612714	Birkin Farm (Holiday Let), Ashley Road, Ashley	0.5	0.03/0.21	-/-	Sub-structure works (vibratory piling)	A	1	V2	T	-	O	D 9	

[13] Impacts with durations of less than one month are not generally considered significant.

Assessment location		Impact criteria				Significance criteria							Significant effect
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]	
			Day 07:00 – 23:00	Night 23:00 – 07:00									
612718	Stock Farm (Holiday Let), Ashley Road, Ashley	0.8	0.02/0.36	-/-	Sub-structure works (vibratory piling)	A	1	V2	T	-	O	D 9	
612730	Moss House Farm, Thowler Lane, Millington	0.8	0.12/0.72	-/-	Site set up (vibratory roller)	A	1	R	T	-	O	D 3	~
612741	Sunbank Lane, Ringway	2	0.08/<0.8[14]	-/-	Road embankment works (vibratory roller)	A	1	R	T	-	O, CT	D <1	[13]
612749	Sunbank Lane, Ringway	1.1	0.16/<0.8[14]	-/-	Site set up (vibratory roller)	A	4	R	T	-	O, CT	D <1	[13]
612762	Keepers Cottage, Sunbank Lane, Ringway	0.2	0.04/0.16	-/-	Site set up (vibratory roller)	NA	1	R	T	-	-		
612771	Warburton Drive, Hale Drive	1.5	0.04/0.66	-/-	Site set up (vibratory roller)	A	7	R	T	-	O	D <1	[13]
612782	Warburton Close, Hale Barns	0.7	0.08/0.42	-/-	Site set up (vibratory roller)	A	11	R	T	-	O	D <1	[13]

[14] 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							Significant effect
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]	
			Day 07:00 – 23:00	Night 23:00 – 07:00									
612789	Cherry Tree House (Office), Cherry Tree Lane, Rostherne	0.6	0.12/0.35	-/-	Site set up (vibratory roller)	A	1	V3	T	-	O, CT	D 1	
612798	Marlfield Road, Hale Barns	0.2	0.04/0.15	-/-	Site set up (vibratory roller)	NA	53	R	T	-	-		
612799	Marlfield Road, Hale Barns	0.3	0.04/0.17	-/-	Site set up (vibratory roller)	NA	12	R	T	-	-		
612803	Coe Lane, Millington	0.2	0.04/0.08	-/-	Finishing works (vibratory roller)	NA	2	R	T	-	-		
612811	Burnside, Hale Barns	2	0.20/<0.8[14]	-/-	Site set up (vibratory roller)	A	8	R	T	-	O	D 2	MA06-C-C2
612816	Manchester Airport Hotels, Runger Lane, Manchester and committed development (Map Book ref.: MA06/073)	0.2	0.04/0.12	-/-	Site set up (vibratory roller)	NA	1	V2	T	-	-		
612824	Hale Road, Hale Barns	0.4	0.08/0.23	-/-	Earthworks (vibratory roller)	A	14	R	T	-	O	D 3	MA06-C-C3
612832	Hasty Lane, Ringway	0.3	0.08/0.16	-/-	Earthworks (vibratory roller)	NA	7	R	T	-	-		
612854	Brooks Drive, Hale Barns	0.5	0.04/0.48	-/-	Site set up (vibratory roller)	A	3	R	T	-	O	D <1	[13]

Assessment location		Impact criteria				Significance criteria							Significant effect
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]	
			Day 07:00 – 23:00	Night 23:00 – 07:00									
612859	Roaring Gate Lane, Ringway	1.1	-/<0.8[14]	-/-	Site set up (vibratory roller)	A	1	R	T	-	-	D 6	~
612880	Hale Road, Hale Barns	0.5	0.12/0.26	-/-	Earthworks (vibratory roller)	A	1	R	T	-	O	D 3	~
612883	Burnside, Hale Barns	2	0.04/<0.8[14]	-/-	Site set up (vibratory roller)	A	13	R	T	-	O	D <1	[13]
613030	Back Lane, Ashley	0.4	0.04/0.24	-/-	Finishing works (vibratory roller)	A	1	R	T	-	O	D 2	~
613035	Mereside Farm, Millington Lane, Millington	0.2	0.04/0.08	-/-	Road embankment works (vibratory roller)	NA	1	R	T	-	-		
613048	Sunbank Lane, Ringway	0.4	0.08/0.28	-/-	Road embankment works (vibratory roller)	A	3	R	T	-	O, CT	D <1	[13]
613079	Little Lodge and South Arden Lodge (Holiday Let), Mobberley Road, Ashley	0.4	0.08/0.26	-/-	Site set up (vibratory roller)	A	1	V2	T	-	O	D 3	MA06-C-N2
613085	Warburton Drive, Hale Drive	0.2	0.04/0.12	-/-	Site set up (vibratory roller)	NA	5	R	T	-	-		

Assessment location		Impact criteria				Significance criteria							Significant effect
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]	
			Day 07:00 – 23:00	Night 23:00 – 07:00									
613086	Warburton Drive, Hale Drive	0.1	0.04/0.12	-/-	Site set up (vibratory roller)	NA	6	R	T	-	-		
613087	Warburton Close, Hale Barns	0.2	0.04/0.16	-/-	Site set up (vibratory roller)	NA	10	R	T	-	-		
613088	Warburton Close, Hale Barns	0.2	0.04/0.16	-/-	Site set up (vibratory roller)	NA	3	R	T	-	-		
613089	Hale Road, Hale Barns	0.5	0.08/0.30	-/-	Site set up (vibratory roller)	A	4	R	T	-	-	D 2	~
613090	Hale Road, Hale Barns	2	0.08/<0.8[14]	-/-	Site set up (vibratory roller)	A	2	R	T	-	O	D 2	~
613091	Hale Road, Hale Barns	0.4	0.04/0.29	-/-	Site set up (vibratory roller)	A	3	R	T	-	O	D 3	~
613200	Castle Mill Lane, Ashley	0.2	0.08/0.12	-/-	Finishing works (vibratory roller)	NA	1	R	T	-	-		

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 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											
612666	Breach House Lane, Mobberley	49/53[A]	46/46[B]	46/46[C]	Day: Railhead use Evening: Railhead use Night: Railhead use	NA	2	R	T	H	-	-	-	-	
612667	Breach Cottage, Breach House Lane, Mobberley	52/56[A]	50/50[B]	50/50[C]	Day: Railhead use Evening: Railhead use Night: Railhead use	NA	1	R	T	-	-	-	-	-	
612683	Birtles Farm, Ashley Road, Ashley	53/57[A]	50/50[A]	50/50[A]	Day: Earthworks Evening: Railhead use Night: Railhead use	A	1	R	T	-	-	- N33	-	-	~
612685	Lower House Farm, Mobberley Road, Ashley	55/58[A]	49/49[A]	49/49[A]	Day: Overbridge construction Evening: Railhead use Night: Railhead use	A	1	R	T	-	-	- N33	-	-	~
612689	Castle Mill Lane, Ashley	54/58[A]	38/38[B]	38/38[C]	Day: Highway works Evening: Railhead use Night: Railhead use	NA	4	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											
612690	Brickhill Lane, Ashley	53/58[A]	45/45[B]	45/45[C]	Day: Overbridge construction Evening: Railhead use Night: Railhead use	NA	2	R	T	H	-	-	-	-	
612693	Lamb Lane, Ashley	58/63[A]	56/56[A]	56/56[A]	Day: Highway works Evening: Railhead use Night: Railhead use	S	2	R	T	-	-	- E32 N33	-	NI	~
612699	Shaw Green Farm, Marsh Lane, Rostherne	54/60[A]	48/48[A]	48/48[A]	Day: Railhead construction Evening: Railhead use Night: Railhead use	A	1	R	T	-	-	- N33	-	-	~
612701	Ashley Road, Ashley	64/69[A]	52/52[A]	52/52[B]	Day: Railhead construction Evening: Railhead use Night: Railhead use	A	2	R	T	-	-	D1 N32	-	-	~
612702	Mill Lane, Ashley	48/53[A]	-/-[B]	-/-[C]	Day: Earthworks	NA	7	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											
612703	Hunters Close, Castle Mill Lane, Ashley	61/65[A]	-/-[C]	-/-[C]	Day: General site works	NA	1	R	T	H	-	-	-	-	
612705	Ashlar, Back Lane, Knutsford	62/69[A]	46/46[A]	46/46[A]	Day: Earthworks Evening: Railhead use Night: Railhead use	A	1	R	T	-	-	D3 N31	-	-	~
612707	Millington Hall Lane, Millington	54/58[A]	-/-[B]	-/-[C]	Day: Earthworks	NA	4	R	T	-	-	-	-	-	
612708	Chapel House Farm, Castle Mill Lane, Ashley	71/77[A]	32/34[B]	32/34[C]	Day: Highway works Evening: Railhead use Night: Railhead use	S	1	R	T	-	-	D43	V	NI	~
612711	Mobberley Road, Ashley	62/67[A]	55/55[B]	55/55[C]	Day: Highway works Evening: Railhead use Night: Railhead use	A	2	R	T	-	-	D6	-	-	~
612713	Back Lane Farm, Back Lane, Ashley	62/68[A]	45/45[A]	45/45[A]	Day: Overbridge construction Evening: Railhead use Night: Railhead use	A	1	R	T	-	-	D4	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											
612716	Birkinheath Cottage, Birkinheath Lane, Ashley	58/61[A]	54/54[A]	54/54[B]	Day: Railhead use Evening: Railhead use Night: Railhead use	A	1	R	T	-	-	- N33	-	-	~
612719	Back Lane, Ashley	57/62[A]	43/43[A]	43/43[B]	Day: Earthworks Evening: Railhead use Night: Railhead use	NA	4	R	T	-	-	-	-	-	
612720	Millington Hall Lane, Millington	53/57[A]	-/-[B]	-/-[C]	Day: Earthworks	NA	2	R	T	H	-	-	-	-	
612721	School House, Back Lane, Ashley	56/61[A]	51/51[B]	51/51[C]	Day: General site works Evening: Railhead use Night: Railhead use	NA	1	R	T	-	-	-	-	-	
612722	Hunters Moon, Rostherne Lane, Rostherne	53/57[A]	-/-[B]	-/-[C]	Day: Overbridge construction	NA	1	R	T	H	-	-	-	-	
612724	Briddon Weir Farm, Birkinheath Lane, Ashley	56/64[A]	48/48[A]	48/48[B]	Day: Railhead construction Evening: Railhead use Night: Railhead use	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											
612725	Ashley Road, Ashley	57/61[A]	54/54[B]	54/54[C]	Day: Railhead use Evening: Railhead use Night: Railhead use	NA	6	R	T	-	-	-	-	-	
612726	Castle Mill Lane, Ashley	52/58[B]	44/44[C]	44/44[C]	Day: Earthworks Evening: Railhead use Night: Railhead use	NA	2	R	T	H	-	-	-	-	
612727	Bucklow Manor Care Home, Chester Road, Bucklow Hill	51/55[B]	-/-[C]	-/-[C]	Day: Viaduct construction	NA	1	R	T	H	-	-	-	-	
612728	Egerton Moss, Ashley	56/60[C]	53/53[C]	53/53[C]	Day: Railhead use Evening: Railhead use Night: Railhead use	NA	6	R	T	H	-	-	-	-	
612729	Back Lane, Ashley	56/60[A]	52/52[B]	52/52[C]	Day: General site works Evening: Railhead use Night: Railhead use	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											
612730	Moss House Farm, Thowler Lane, Millington	71/76[A]	34/38[A]	34/38[C]	Day: Overbridge construction Evening: Overbridge construction Night: Overbridge construction[15]	S	1	R	T	-	-	D34	V	NI	MA03-C-C2[16]
612731	Lower Thornsgreen Farm, Back Lane, Ashley	58/64[A]	40/40[B]	40/40[C]	Day: Highway works Evening: Railhead use Night: Railhead use	NA	1	R	T	-	-	-	-	-	
612735	Ashley Road, Ashley	57/61[B]	55/55[C]	55/55[C]	Day: Railhead use Evening: Railhead use Night: Railhead use	NA	5	R	T	H	-	-	-	-	

[15] 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.

[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 the minority in the Hulseheath to Manchester airport area. For further information, see Volume 2, Community Area report: Pickmere to Agden and Hulseheath (MA03), Section 13 and Volume 5: Appendix SV-002-0MA03.

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											
612738	Sycamore Cottage, Ashley Road, Ashley	59/63[A]	56/56[B]	56/56[C]	Day: Railhead use Evening: Railhead use Night: Railhead use	S	1	R	T	H	-	- N33	-	NI	~
612739	Castle Mill Lane, Ashley	51/54[A]	46/46[B]	46/46[C]	Day: General site works Evening: Railhead use Night: Railhead use	NA	2	R	T	-	-	-	-	-	
612740	Birkin House, Birkinheath Lane, Ashley	60/65[A]	51/51[B]	51/51[C]	Day: Viaduct construction Evening: Railhead use Night: Railhead use	NA	1	R	T	-	-	-	-	-	
612741	Sunbank Lane, Ringway	71/76[A]	32/34[C]	32/34[C]	Day: Overbridge construction Evening: Earthworks Night: Earthworks[15]	S	1	R	T	H	-	D27	CT , V	NI	MA06-C-C1
612743	Cow Lane, Ashley	53/56[C]	50/50[C]	50/50[C]	Day: Overbridge construction Evening: Railhead use Night: Railhead use	NA	12	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											
612749	Sunbank Lane, Ringway	67/72[A]	-/33[B]	-/33[C]	Day: Earthworks Evening: Earthworks Night: Earthworks[15]	A	4	R	T	-	-	D22	V	-	MA06-C-C1
612750	Castle Mill Lane, Ashley	50/54[B]	45/45[C]	45/45[C]	Day: Overbridge construction Evening: Railhead use Night: Railhead use	NA	7	R	T	H	-	-	-	-	
612753	Millington Lane, Millington	56/60[A]	-/-[A]	-/-[C]	Day: Earthworks	NA	6	R	T	-	-	-	-	-	
612754	Millington Hall Lane, Millington	58/61[A]	-/-[A]	-/-[B]	Day: General site works	NA	3	R	T	-	-	-	-	-	
612759	Mere Covert Cottage, Cherry Tree Lane, Rostherne	82/84[A]	41/41[A]	41/41[C]	Day: Railhead construction Evening: Railhead use Night: Railhead use	S	1	R	T	-	-	D2	-	NI	~

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											
612762	Keepers Cottage, Sunbank Lane, Ringway	63/66[B]	-/30[C]	-/30[C]	Day: Box structure construction Evening: Box structure construction Night: Box structure construction[15]	NA	1	R	T	H	-	-	-	-	
612763	Rivershill Gardens, Hale Barns	59/63[B]	-/-[C]	-/-[C]	Day: Earthworks	NA	25	R	T	H	-	-	-	-	
612764	Newhall Cottages, Millington Lane, Millington	53/58[A]	-/-[A]	-/-[C]	Day: Earthworks	NA	1	R	T	-	-	-	-	-	
612765	Haslemere Avenue, Hale Barns	56/61[A]	-/-[C]	-/-[C]	Day: General site works	NA	27	R	T	H	-	-	-	-	
612766	Thowler Lane, Millington	59/64[A]	-/-[A]	-/-[C]	Day: Overbridge construction	NA	3	R	T	-	-	-	-	-	
612769	Ridge Avenue, Hale Barns	56/60[A]	-/-[C]	-/-[C]	Day: Earthworks	NA	21	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											
612771	Warburton Drive, Hale Drive	66/69[A]	-/31[C]	-/31[C]	Day: Earthworks Evening: Earthworks Night: Earthworks[15]	A	7	R	T	H	-	D21	V	-	MA06-C-C2
612773	Bankside, Hale Barns	59/63[A]	-/-[B]	-/-[C]	Day: Retaining walls construction	NA	22	R	T	-	-	-	-	-	
612775	Dobb Hedge Close, Hale Barns	53/57[A]	-/-[B]	-/-[C]	Day: Overbridge construction	NA	31	R	T	-	-	-	-	-	
612776	Ryecroft Farm, Ashley Mill Lane, Ashley	57/63[B]	48/48[C]	48/48[C]	Day: Underbridge construction Evening: Railhead use Night: Railhead use	NA	1	R	T	H	-	-	-	-	
612781	Cherry Tree Lane, Rostherne	69/76[A]	-/-[C]	-/-[C]	Day: Railhead construction	S	2	R	T	H	-	D7	-	NI	~
612782	Warburton Close, Hale Barns	65/69[A]	32/34[B]	32/34[C]	Day: Earthworks Evening: General site works Night: General site works[15]	A	11	R	T	-	-	D19	V	-	MA06-C-C2
612784	Carrwood, Hale Barns	48/51[A]	-/-[A]	-/-[B]	Day: Highway works	NA	39	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											
612787	Ashley Hall, Ashley Road, Ashley	53/56[A]	49/49[A]	49/49[C]	Day: Railhead use Evening: Railhead use Night: Railhead use	NA	1	R	T	-	-	-	-	-	
612788	Green Gate, Hale Barns	53/56[A]	-/-[A]	-/-[C]	Day: Earthworks	NA	95	R	T	-	-	-	-	-	
612793	Tanyard Drive, Hale Barns	51/54[A]	-/-[A]	-/-[B]	Day: Earthworks	NA	94	R	T	-	-	-	-	-	
612794	Boothbank House, Millington Lane, Millington	55/60[A]	-/-[A]	-/-[C]	Day: Overbridge construction	NA	1	R	T	-	-	-	-	-	
612798	Marlfield Road, Hale Barns	59/63[A]	-/31[B]	-/31[C]	Day: Earthworks Evening: General site works Night: General site works[15]	NA	53	R	T	-	-	-	-	-	
612799	Marlfield Road, Hale Barns	60/64[A]	32/34[A]	32/34[C]	Day: Earthworks Evening: Bored tunnel works Night: Bored tunnel works	NA	12	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											
612803	Coe Lane, Millington	63/67[A]	-/-[B]	-/-[C]	Day: Earthworks	A	2	R	T	-	-	D4	-	-	~
612807	Reddy Lane, Millington	51/56[A]	-/-[B]	-/-[C]	Day: Overbridge construction	NA	4	R	T	-	-	-	-	-	
612810	Green Gate, Hale Barns	51/55[A]	31/33[A]	31/33[B]	Day: Earthworks Evening: Bored tunnel works Night: Bored tunnel works	NA	70	R	T	-	-	-	-	-	
612811	Burnside, Hale Barns	69/75[A]	34/37[B]	34/37[C]	Day: General site works Evening: General site works Night: General site works[15]	A	8	R	T	H	-	D53	V	-	MA06-C-C2
612817	Burnside, Hale Barns	54/58[A]	-/-[A]	-/-[B]	Day: General site works	NA	19	R	T	-	-	-	-	-	
612818	Warren Drive, Hale Barns	52/56[A]	34/36[A]	34/36[B]	Day: Retaining walls construction Evening: Bored tunnel works Night: Bored tunnel works	NA	14	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											
612824	Hale Road, Hale Barns	62/68[A]	35/37[C]	35/37[C]	Day: Overbridge construction Evening: Bored tunnel works Night: Bored tunnel works	A	14	R	T	H	-	D4	V	-	MA06-C-C3
612825	High Elm Road, Hale Barns	52/56[A]	38/40[A]	38/40[C]	Day: Earthworks Evening: Bored tunnel works Night: Bored tunnel works	NA	80	R	T	-	-	-	-	-	
612826	Winmarith Drive, Hale Barns	50/54[A]	36/39[A]	36/39[B]	Day: Earthworks Evening: Bored tunnel works Night: Bored tunnel works	NA	59	R	T	-	-	-	-	-	
612827	Reddy Lane, Millington	50/54[B]	-/-[C]	-/-[C]	Day: General site works	NA	3	R	T	H	-	-	-	-	
612830	Yarwood Heath Farm, Bow Lane, Bowdon	57/63[A]	40/40[C]	40/40[C]	Day: Railhead construction Evening: Railhead use Night: Railhead use	NA	1	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											
612831	Coe Lane, Millington	56/59[B]	-/-[C]	-/-[C]	Day: Earthworks	NA	6	R	T	H	-	-	-	-	
612832	Hasty Lane, Ringway	64/69[A]	39/41[B]	39/41[C]	Day: Overbridge construction Evening: Bored tunnel works Night: Bored tunnel works	A	7	R	T	-	-	D15	-	-	MA06-C-C3
612836	Hasty Lane, Ringway	62/68[C]	35/36[C]	35/36[C]	Day: Earthworks Evening: General site works Night: General site works[15]	NA	2	R	T	H	-	-	-	-	
612843	Reddy Lane, Millington	54/57[A]	-/-[B]	-/-[C]	Day: General site works	NA	2	R	T	H	-	-	-	-	
612845	Pool Bank Farm, Bow Lane, Bowdon	53/57[A]	38/38[B]	38/38[C]	Day: Earthworks Evening: Railhead use Night: Railhead use	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											
612846	Rydal Drive, Hale Barns	54/59[A]	38/41[A]	38/41[B]	Day: Station construction Evening: Bored tunnel works Night: Bored tunnel works	NA	31	R	T	-	-	-	-	-	
612849	Brooks Drive, Hale Barns	59/65[A]	39/41[A]	39/41[B]	Day: Earthworks Evening: Bored tunnel works Night: Bored tunnel works	NA	30	R	T	-	-	-	-	-	
612851[17]	Reddy Lane, Little Bollington	53/56[A]	-/-[A]	-/-[C]	Day: Earthworks	NA	8	R	T	-	-	-	-	-	
612853	Thorley Lane, Ringway	54/58[B]	44/46[C]	44/46[C]	Day: Overbridge construction Evening: Bored tunnel works Night: Bored tunnel works	NA	2	R	T	H	-	-	-	-	

[17] For this location see Volume 5, Sound, noise and vibration Map Book: map SV-03-312a.

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											
612854	Brooks Drive, Hale Barns	61/68[A]	41/43[A]	41/43[B]	Day: Earthworks Evening: General site works Night: General site works[15]	A	3	R	T	-	-	D2	V	-	~
612855	Thorley Lane, Ringway	60/64[C]	48/50[C]	48/50[C]	Day: Overbridge construction Evening: Bored tunnel works Night: Bored tunnel works	NA	5	R	T	H	-	-	-	-	
612856	Shay Lane, Hale Barns	56/60[A]	43/45[C]	43/45[C]	Day: Earthworks Evening: Bored tunnel works Night: Bored tunnel works	NA	11	R	T	H	-	-	-	-	
612858	Shay Lane, Hale Barns	59/63[C]	49/51[C]	49/51[C]	Day: Earthworks Evening: Bored tunnel works Night: Bored tunnel works	NA	15	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											
612859	Roaring Gate Lane, Ringway	62/67[C]	51/53[C]	51/53[C]	Day: General site works Evening: Bored tunnel works Night: Bored tunnel works	NA	1	R	T	H	-	-	-	-	
612860	Roaring Gate Lane, Hale	56/60[A]	49/51[C]	49/51[C]	Day: General site works Evening: Bored tunnel works Night: Bored tunnel works	NA	5	R	T	H	-	-	-	-	
612880	Hale Road, Hale Barns	67/73[A]	32/35[B]	32/35[C]	Day: Overbridge construction Evening: Overbridge construction Night: Overbridge construction[15]	A	1	R	T	-	-	D41	V	-	MA06-C-C3

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											
612883	Burnside, Hale Barns	67/71[A]	33/35[B]	33/35[C]	Day: General site works Evening: General site works Night: General site works[15]	A	13	R	T	-	-	D43	V	-	MA06-C-C2
613030	Back Lane, Ashley	63/70[A]	39/40[A]	39/40[B]	Day: Earthworks Evening: Railhead use Night: Railhead use	A	1	R	T	-	-	D7	V	-	~
613035	Mereside Farm, Millington Lane, Millington	61/66[C]	-/-[C]	-/-[C]	Day: Overbridge construction	NA	1	R	T	H	-	-	-	-	
613046	Ashley Road, Ashley	57/61[B]	55/55[C]	55/55[C]	Day: Railhead use Evening: Railhead use Night: Railhead use	NA	2	R	T	H	-	-	-	-	
613048	Sunbank Lane, Ringway	64/69[A]	-/30[B]	-/30[C]	Day: Overbridge construction Evening: Earthworks Night: Earthworks[15]	A	3	R	T	-	-	D9	CT , V	-	MA06-C-C1

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											
613081	Hough Green, Ashley	55/60[A]	53/53[C]	53/53[C]	Day: Railhead use Evening: Railhead use Night: Railhead use	NA	14	R	T	H	-	-	-	-	
613082	Hough Green, Ashley	56/60[A]	53/53[B]	53/53[C]	Day: Railhead use Evening: Railhead use Night: Railhead use	NA	13	R	T	-	-	-	-	-	
613085	Warburton Drive, Hale Drive	54/58[A]	-/-[A]	-/-[B]	Day: Earthworks	NA	5	R	T	-	-	-	-	-	
613086	Warburton Drive, Hale Drive	56/60[A]	-/-[A]	-/-[C]	Day: Retaining walls construction	NA	6	R	T	-	-	-	-	-	
613087	Warburton Close, Hale Barns	54/58[A]	-/-[A]	-/-[B]	Day: Earthworks	NA	10	R	T	-	-	-	-	-	
613088	Warburton Close, Hale Barns	60/64[A]	31/33[B]	31/33[C]	Day: Earthworks Evening: Bored tunnel works Night: Bored tunnel works	NA	3	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											
613089	Hale Road, Hale Barns	59/65[A]	-/30[B]	-/30[C]	Day: General site works Evening: General site works Night: General site works[15]	NA	4	R	T	-	-	-	V	-	
613090	Hale Road, Hale Barns	68/74[A]	30/35[C]	30/35[C]	Day: General site works Evening: General site works Night: General site works[15]	A	2	R	T	H	-	D50	V	-	MA06-C-C3
613091	Hale Road, Hale Barns	63/68[A]	36/39[B]	36/39[C]	Day: Overbridge construction Evening: Bored tunnel works Night: Bored tunnel works	A	3	R	T	-	-	D15	V	-	MA06-C-C3
613200	Castle Mill Lane, Ashley	67/73[A]	33/37[C]	33/37[C]	Day: Highway works Evening: Railhead use Night: Railhead use	A	1	R	T	H	-	D22	-	-	~

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											
613201	Primrose Farm, Mobberley Road, Ashley	58/63[A]	54/54[A]	54/54[C]	Day: Earthworks Evening: Railhead use Night: Railhead use	NA	1	R	T	-	-	-	-	-	
613202	Boundary Cottage, Mobberley Road, Ashley	52/56[B]	51/51[C]	51/51[C]	Day: Railhead use Evening: Railhead use Night: Railhead use	NA	5	R	T	H	-	-	-	-	
613217	Station Yard, Ashley Road, Ashley and committed development (Map Book ref.: MA06/152 and MA06/194)	51/55[A]	51/51[C]	51/51[C]	Day: Railhead use Evening: Railhead use Night: Railhead use	NA	2	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										
612680	Sugar Brook Farm (Bed and Breakfast), Mobberley Road, Ashley	65/70	53/53	8	1	Day: General site works Night: Railhead use	1	A3	T	H	-	D44	V	-	MA06-C-N3
612714	Birkin Farm (Holiday Let), Ashley Road, Ashley	64/72	49/49	15	2	Day: Railhead construction Night: Railhead use	1	A3	T	-	-	D19	V	-	MA06-C-N2
612718	Stock Farm (Holiday Let), Ashley Road, Ashley	65/72	57/57	15	7	Day: Earthworks Night: Railhead use	1	A3	T	-	-	D93 N33	V	-	MA06-C-N2
612727	Bucklow Manor Care Home, Chester Road, Bucklow Hill	51/55	-/-	-	-	Day: Viaduct construction	1	A5	T	H	-	-	-	-	
612742	St Elizabeth's Church, Ashley Road, Ashley	57/61	55/55	3	2	Day: Railhead use Night: Railhead use	1	A2	T	H	-	-	-	-	$

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										
612768	The Old Office, Ashley Road, Ashley	54/57	50/50	1	1	Day: Railhead use Night: Railhead use	1	A4	T	H	-	-	-	-	
612789	Cherry Tree House (Office), Cherry Tree Lane, Rostherne	68/74	30/33	17	-	Day: Railhead construction Night: Retaining walls construction[15]	1	A4	T	-	-	D23	CT, V	-	MA06-C-N1
612800	World Cargo Centre (Lower Sensitivity Offices), Manchester Airport, Manchester	65/67	31/31	4	-	Day: Overbridge construction Night: General site works[15]	1	A4	T	H	-	-	-	-	
612801	The Children's Adventure Farm Trust, Boothbank Lane, Agden	52/58	-/-	2	-	Day: Highway works	1	A3	T	H	-	-	-	-	$
612814	World Freight Terminal, Manchester Airport, Manchester	53/57	-/-	1	-	Day: Earthworks	1	A4	T	H	-	-	-	-	

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										
612816	Manchester Airport Hotels, Runger Lane, Manchester and committed development (Map Book ref.: MA06/073)	64/69	-/31	2	-	Day: Retaining walls construction Night: Underbridge construction[15]	1	A3	T	H	-	-	-	-	$
613032	Mereside Farm Office (Lower Sensitivity Office), Millington Lane, Millington	64/69	-/-	4	-	Day: Overbridge construction	1	A4	T	H	-	-	-	-	
613079	Little Lodge and South Arden Lodge (Holiday Let), Mobberley Road, Ashley	63/69	55/55	10	4	Day: General site works Night: Railhead use	1	A3	T	H	-	D54 N32	V	-	MA06-C-N2
613205	Amazon UK Services Ltd, Manchester	57/62	-/31	3	-	Day: Retaining walls construction Night: General site works[15]	1	A4	T	H	-	-	-	-	$

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										
613218	Ashley Smithy Garage (Office), Mobberley Road, Ashely and committed development (Map Book ref.: MA06/203)	56/60	53/53	3	3	Day: Highway works Night: Railhead use	1	A4	T	H	-	-	-	-	$
613219	World Logisitics Hub (Lower Sensitivity Offices), Sunbank Lane and committed development (Map Book ref.: MA06/157, MA06/158, MA06/261, MA06/072 and MA06/071)	60/64	32/32	5	-	Day: Earthworks Night: General site works[15]	1	A4	T	H	-	-	-	-	

Airborne sound: indirect effects

4.2.10 Construction road and rail 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 (25m from the nearest rail for rail traffic). 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 and rail 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 ≥10dB, 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, 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).
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 or railway line name	Portion of road or railway line affected	Number of properties affected (approx.)	Daytime traffic sound levels $L_{Aeq,16hour}$ dB (for rail traffic: night-time traffic sound levels $L_{Aeq,8hour}$ 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		
Ashley Road	Between A5034 Mereside Road and Rostherne Lane	R:8 (8) NR:2	62.7	64.6	65.8	1.9	3.1		~ *[18]
Cherry Tree Lane	Between Marsh Lane and Chester Road	R:0 (0) NR:1	44.2	53.8	57.6	9.6	13.4	O, V	MA06-C-N1
Chester Road	Between Millington Lane and A556 slip road	R:0 NR:1	49.1	61.4	62.8	12.3	13.7[19]		MA06-C-N4
Rostherne Lane	Between Marsh Lane and Chester Road	R:36 (34) NR:3	47.4	50.2	51.8	2.8	4.4		MA06-C-C5 MA06-C-N5 MA06-C-N6
Reddy Lane	Between M56 underpass and A56 Lymm Road	R:4 (4) NR:0	54.9	58.4	60	3.5	5.1		-
Sunbank Lane	Between Chapel Lane and Amazon Fulfilment Centre	R:11 (11) NR:0	20.3	51.7	57.7	31.4	37.4[20]	O, V	-

[18] Non-residential receptors not likely to experience marginal exceedance.

[19] Impact likely to be smaller due to screening and influence from the A556.

[20] Impact expected to only be minor due to influence of the M56.

Road or railway line name	Portion of road or railway line affected	Number of properties affected (approx.)	Daytime traffic sound levels $L_{Aeq,16hour}$ dB (for rail traffic: night-time traffic sound levels $L_{Aeq,8hour}$ 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		
Wellfield Lane	Between Clay Lane and Grove Lane	R:5 (5) NR:0	46.4	49.0	50.5	2.6	4.1		-
M56 (eastbound)	Between Cow Lane Underpass and the M56 junction 6	R:1 NR:0	76.3	77.1	77.5	0.8	1.2		-
Chapel Lane	Between the B5569 Chester Road and Hulseheath Lane	R:19 (19) NR:0	50.1	55.3	58.8	5.2	8.7	-	MA06-C-C4[21]
Chapel Lane/Peacock Lane (existing)[22]	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[23]
Mid-Cheshire Line	North of Ashley Railhead	R:0 NR:0	61.7	-	64.1	-	2.4	-	-

[21] This community extends across the boundary between the Pickmere to Agden and Hulseheath area (MA03), and the Hulseheath to Manchester Airport area (MA06), with the majority in the Hulseheath to Manchester Airport area.

[22] 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.

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

Road or railway line name	Portion of road or railway line affected	Number of properties affected (approx.)	Daytime traffic sound levels $L_{Aeq,16hour}$ dB (for rail traffic: night-time traffic sound levels $L_{Aeq,8hour}$ 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		
Mid-Cheshire Line	South of Ashley Railhead	R:0 NR:0	61.7	-	64.1	-	2.4	-	-

4.2.12 In addition, the following non-residential properties are likely to be affected by changes in traffic noise:

- Bucklow Manor Care Home which is located adjacent to Chester Road;
- Cherry Tree House (office) which is located adjacent to Cherry Tree Lane;
- Egerton Hall which is located adjacent to Rostherne Lane; and
- Tatton Stays Holiday Lets (Virginia Cottage and Rose Cottage) which is located adjacent to Rostherne Lane.

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							
612730	Moss House Farm, Thowler Lane, Millington (MA06/1)	71/76	34/38	22	0	Day: Overbridge construction Night: Overbridge construction[15]	Y	-	-	-	-	-
613042	Rostherne Mere SSSI[10]	58/64	-/30	10	0	Day: Railhead construction Night: Railhead use	-	-	-	Y	-	-
613043	Rostherne Mere SSSI	54/58	-/-	4	0	Day: Railhead construction	-	-	-	Y	-	-
613044	Rostherne Mere SSSI	60/67	39/39	14	1	Day: Railhead construction Night: Railhead use	-	-	-	Y	-	-
613045	Rostherne Mere SSSI	49/53	37/37	6	1	Day: Railhead construction Night: Railhead use	-	-	-	Y	-	-
613093	Cornmill Cottage, Pepper Street, Knutsford	46/50	43/43	0	0	Day: Railhead use Night: Railhead use	-	-	Y	-	-	-

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