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HS2

High Speed Rail (Crewe – Manchester) Environmental Statement

Volume 5: Appendix SV-002-0MA04

Sound, noise and vibration

MA04: Broomedge to Glazebrook

Baseline and construction sound, noise and vibration report

M262

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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 Broomedge to Glazebrook area (MA04). 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 MA04 provides the baseline and predicted levels as described above.

1.1.4 The third appendix is also specific to MA04, and provides detailed operational sound, noise and vibration levels, see Volume 5, Appendix SV-003-0MA04. 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 MA04, 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 Metropolitan Borough Council (TMBC) Local Plan Core Strategy 2012[1]; and
- the Warrington Borough Council (WBC) Local Plan Core Strategy (adopted 2014)[2].

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 TMBC and WBC[3] 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 and WBC officers were also invited to attend baseline sound measurements in this area and witness the measurement procedures used.

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.

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

[2] Warrington Borough Council (2014), *Local Plan Core Strategy (Adopted 2014)*. Available online at: https://www.warrington.gov.uk/info/200564/planning_policy/1903/local_plan.

[3] Meetings held on 7 February 2018, 16 May 2018, 20 February 2019, 5 June 2019, 22 October 2020 and 7 July 2021.

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: Broomedge to Glazebrook (MA04), 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 Broomedge to Glazebrook 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 and local neighbourhood sources, with contributing natural and agricultural sounds.

3.1.2 There are several main roads that contribute to the sound environment within the Broomedge to Glazebrook area: the M62 and the M56; the A56 Higher Lane/Agden Brow/Lymm Road through Lymm and Broomedge; the A57 Manchester Road/Cadishead Way through Irlam, Cadishead, Hollins Green and the eastern outskirts of Warrington; and the A6144 Rushgreen Road/Birch Brook Road/Mill Lane/Bent Lane/Paddock Lane/Warburton Lane through Lymm, Rushgreen, Heatley and Partington. The Liverpool to Manchester Line (via Warrington Central) railway runs on an east to west alignment in the northern part of the study area with stations at Irlam and Glazebrook.

3.1.3 The community of Heatley is characterised by sound from the A6144 Birchbrook Road. Existing sound levels are typically 50dB during the daytime and 45dB during the night-time.

3.1.4 The community of Partington is characterised by sound from the A6144 Warburton Lane and the A57 Cadishead Way which run through the area. Existing sound levels in the residential areas closest to the Proposed Scheme are low as they are removed from major roads. Existing sound levels are typically 40dB during the daytime and 35dB during the night-time.

3.1.5 The community of Hollins Green is characterised by sound from the A57 Manchester Road. Existing sound levels in the majority of the residential areas are low as they are removed from the A57 Manchester Road and screened by intervening buildings. Existing sound levels are typically 40dB during the daytime and 35dB 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 MA04, 11 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:

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

3.3.6 An additional two 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[4] and the Calculation of Railway Noise[5] 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 Broomedge to Glazebrook area, noise from all major roads including the M62, the A57 Manchester Road/Cadishead Road, the A6144 Rushgreen Road/Birch Brook Road/Bent Lane/Paddock Lane/Warburton Lane, the B5159 Warburton Bridge Road, the B5160 Dunham

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

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

Road, and the B5212 Glazebrook Lane, and the Liverpool to Manchester Line (via Warrington Central) railway 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.

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[6] 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 normally 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 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.

[6] 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 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
  - 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
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 $L_{pAFmax,5min}$	
612890	Kids Planet (Office), Higher Lane, Lymm		70	68	64	70	65	70	75	3,A,i,b
617500	Agden Park Lane, Lymm		52	50	46	53	47	52	57	3,A,i,b
617501	Higher Lane, Lymm		63	61	57	63	58	63	68	3,A,i,b
617502	Higher Lane, Lymm		63	61	58	63	58	63	68	3,A,i,b
617503	Higher Lane, Lymm		64	62	58	64	59	64	69	3,A,i,b
617506	Agden Brow, Lymm		55	53	49	55	50	55	60	3,A,i,b
617507	Broomedge Farm Cottages, Burford Lane, Lymm		50	48	44	49	44	49	54	3,A,i,b
617510	Agden Lane Farm, Agden Lane, Lymm		53	50	46	52	47	52	57	3,A,i,b
617511	Agden Lane, Lymm		52	49	46	51	46	51	56	3,A,i,b
617515	Warrington Lane, Lymm		47	45	41	47	41	46	51	3,A,i,b
617516	Burford Lane, Lymm		44	42	38	44	39	44	49	3,A,i,b
617517	Spring Lane, Lymm		47	44	41	46	41	46	51	3,A,i,b
617518	Spring Lane, Lymm		44	42	38	44	38	43	48	3,A,i,b
617520	Lymm Marina (Lower Sensitivity Offices), Warrington Lane, Lymm		<40	<35	31	<40	31	36	41	3,C,i,b
617521	Warrington Lane, Lymm		<40	<35	31	<40	31	36	41	3,C,i,b
617523	Bradshaw Lane, Lymm		43	41	37	44	38	43	48	3,A,i,b
617524	Spring Lane, Lymm		42	37	35	42	36	41	46	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 $L_{pAFmax,5min}$	
617526	Wet Gate Lane, Lymm		<40	<35	31	<40	32	37	42	3,C,i,b
617528	Wet Gate Lane, Lymm and committed development (Map Book ref.: MA04/088)		50	45	43	49	43	48	53	3,A,i,b
617529	Wet Gate Lane, Lymm		<40	<35	30	<40	31	36	41	3,C,i,b
617530	Chaise Meadow, Lymm	ML712719	46	45	41	46	41	48	80	1,A,i,a
617531	Bollin Court (Offices), Mill Lane, Lymm	ML712719	46	45	41	46	41	48	80	1,A,i,a
617532	Boarded Barn Farm, Birchbrook Road, Lymm		50	46	43	51	45	50	55	3,A,i,b
617533	Lower Carr Green Farm, Carr Green Lane, Warburton		<40	<35	<30	<40	<30	32	37	3,C,i,b
617534	Birchbrook Road, Lymm		66	61	59	66	60	65	70	3,A,i,b
617535	Heatley House (Offices), Mill Lane, Lymm		46	41	39	46	39	44	49	3,A,i,b
617536	Bridge Farm, Carr Green Lane, Warburton		<40	<35	32	<40	33	38	43	3,C,i,b
617537	Carr Green Lane, Warburton		<40	<35	<30	<40	<30	34	39	3,C,i,b
617538	Old Mill Close, Lymm		48	43	41	48	41	46	51	3,A,i,b
617539	Dunham Road, Warburton		63	58	56	63	57	62	67	3,A,i,b
617540	Dunham Road, Warburton	ML712728	49	46	41	49	41	45	77	1,A,i,a
617541	Bent Lane, Warburton		54	49	46	53	47	52	57	3,A,i,b
617542	Dunham Road, Warburton	ML712728	49	46	41	49	41	45	77	1,A,i,a
617543	Paddock Lane, Warburton		60	55	53	60	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 $L_{pAFmax,5min}$	
617544	Rose Cottage, Paddock Lane, Warburton		68	63	61	68	62	67	72	3,A,i,b
617545	The Old Rectory, Wigsey Lane, Warburton		40	35	33	<40	33	38	43	3,C,i,b
617546	Old Church of St Werburgh, Wigsey Lane, Warburton		44	39	37	43	37	42	47	3,A,i,b
617547	Warburton Lane, Warburton		68	63	60	68	61	66	71	3,A,i,b
617548	Werburgh Close, Lymm	ML712720	49	45	40	48	40	46	73	1,A,i,a
617549	Bridge Road, Warburton		51	46	44	51	44	49	54	3,A,i,b
617550	Park Road, Warburton		<40	<35	31	<40	32	37	42	3,C,i,b
617551	Warburton Lane, Warburton		64	58	56	64	57	62	67	3,A,i,b
617552	Warburton Bridge Road, Rixton		51	46	43	50	44	49	54	3,A,i,b
617553	Warburton Park Farm Cottage, Park Road, Warburton		<40	<35	31	<40	32	37	42	3,C,i,b
617554	Lighthouse Farm, Moss Lane, Warburton		45	40	38	45	38	43	48	3,A,i,b
617555	Manchester Road, Rixton		61	56	53	60	54	59	64	3,A,i,b
617556	Brook Farm Close, Partington		54	49	46	54	47	52	57	3,A,i,b
617557	Brook Farm, Manchester Road, Rixton		58	53	50	57	51	56	61	3,A,i,b
617558	Manchester Road, Rixton		65	60	58	64	58	63	68	3,A,i,b
617559	Oak Road, Partington	ML712729	46	45	38	45	38	47	71	1,A,i,a
617560	Little Oaks Nursery, Oak Road, Partington	ML712729	46	45	38	45	38	47	71	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 $L_{pAFmax,5min}$	
617561	Oak Road, Partington		<40	<35	32	<40	33	38	43	3,C,i,b
617562	Oak Road, Partington		40	<35	33	<40	33	38	43	3,C,i,b
617563	Oak Road, Partington		<40	<35	32	<40	33	38	43	3,C,i,b
617564	Tulip Road, Partington		49	43	41	49	42	47	52	3,A,i,b
617565	Lancashire Road, Partington	ML712729	46	45	38	45	38	47	71	1,A,i,a
617566	Oak Road, Partington		<40	<35	31	<40	32	37	42	3,C,i,b
617567	Oak Road, Partington		<40	<35	32	<40	33	38	43	3,C,i,b
617568	Rixton Methodist Church, Chapel Lane, Warrington	ML712721	48	44	43	47	43	48	69	1,A,i,a
617569	Manchester Road, Rixton		66	61	59	66	60	65	70	3,A,i,b
617570	Marsh Brook Close, Rixton		46	41	39	46	40	45	50	3,A,i,b
617571	Oak Road, Partington		<40	<35	33	<40	33	38	43	3,C,i,b
617572	Cheshire Road, Partington		<40	<35	32	<40	32	37	42	3,C,i,b
617573	Manchester Road, Rixton		62	57	55	61	55	60	65	3,A,i,b
617575	Moss Side Lane, Rixton	ML712721	48	44	43	47	43	48	69	1,A,i,a
617576	Manchester Road, Rixton		62	57	55	62	56	61	66	3,A,i,b
617577	Briar Avenue, Rixton		46	41	39	45	39	44	49	3,A,i,b
617579	Elm Road, Rixton		41	37	34	41	35	40	48	3,A,i,b
617580	Cherry Walk, Partington	ML712730	48	45	40	48	40	47	73	1,A,i,a
617581	Manchester Road, RIxton		58	53	51	58	51	56	61	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 $L_{pAFmax,5min}$	
617583	St Helen's CofE Primary School, Birch Road, Rixton		42	37	35	41	35	40	48	3,A,i,b
617585	Millbank Hall Farm, Lock Lane, Partington		<40	<35	31	<40	31	36	47	3,C,i,b
617586	Dawlish Close, Rixton		53	48	47	53	48	53	58	3,A,i,b
617588	School Lane, Rixton		<40	<35	<30	<40	<30	35	49	3,C,i,b
617589	Myrtle Road, Partington	ML712730	48	45	40	48	40	47	73	1,A,i,a
617590	Manchester Road, Rixton		56	51	50	56	51	56	61	3,A,i,b
617591	St Helen's Close, Rixton		63	58	56	63	57	62	67	3,A,i,b
617592	Holly Walk, Partington	ML712730	48	45	40	48	40	47	73	1,A,i,a
617593	School Lane, Rixton		58	54	51	58	52	57	62	3,A,i,b
617594	The Weint, Rixton		47	42	40	47	41	46	51	3,A,i,b
617595	Forest Gate Academy (Primary School), Daniel Adamson Avenue, Partington		44	39	36	43	37	42	47	3,A,i,b
617596	School Lane, Rixton		42	37	35	41	35	40	49	3,A,i,b
617597	Forest Gardens, Partington		47	42	39	46	40	45	50	3,A,i,b
617598	Rixton-with-Glazebrook Community Hall, Manchester Road, Rixton		57	52	49	57	50	55	60	3,A,i,b
617599	Church of St Helen, Dam Lane, Hollinfare		53	50	47	53	48	53	58	3,A,i,b
617600	Manchester Road, Rixton		56	51	49	56	50	55	60	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 $L_{pAFmax,5min}$	
617601	Dam Lane, Rixton		48	44	41	48	41	46	51	3,A,i,b
617602	Black Swan, Rixton with Glazebrook, Warrington		53	48	45	52	46	51	56	3,A,i,b
617603	Lock Lane, Partington		49	44	41	48	42	47	52	3,A,i,b
617604	Mytholme Avenue, Cadishead		56	51	49	56	49	54	59	3,A,i,b
617606	Liverpool Road, Cadishead		57	52	50	57	50	55	60	3,A,i,b
617607	Dam Lane, Rixton		55	51	48	54	48	53	58	3,A,i,b
617608	Mytholme Avenue, Cadishead		52	47	45	51	45	50	55	3,A,i,b
617609	Liverpool Road, Cadishead		61	55	53	61	54	59	64	3,A,i,b
617610	Dam Lane, Rixton		54	50	47	53	47	52	57	3,A,i,b
617612	Dam Lane, Rixton		46	42	39	46	40	45	52	3,A,i,b
617613	EEF Ltd (Office), Glazebrook Lane, Warrington		45	40	38	45	39	44	51	3,A,i,b
617614	Rosebank Road, Cadishead		47	42	40	47	40	45	50	3,A,i,b
617615	Longfield Lodge Dental Practice (Office), Liverpool Road, Cadishead		54	48	46	54	47	52	57	3,A,i,b
617616	Glazebrook Lane, Glazebrook		68	63	61	68	62	67	72	3,A,i,a
617617	Victory Road, Cadishead		44	40	37	44	38	43	51	3,A,i,b
617618	All Creatures Veterinary Centre (Office), Glazebrook Lane, Warrington		54	49	47	53	47	52	57	3,A,i,b
617621	Carlton Way, Glazebrook		45	40	38	44	38	43	56	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 $L_{pAFmax,5min}$	
617622	Dam Lane, Rixton		63	63	57	63	57	60	87	4,A,i,b
617623	Bank Street, Glazebrook		52	47	45	52	45	50	59	3,A,i,b
617624	Bank Street, Glazebrook	ML712735	55	50	44	54	44	48	79	1,A,i,a
617625	Glazebrook Lane, Glazebrook		49	44	42	49	42	47	55	3,A,i,b
617626	Rose Cottage, Dam Head Lane, Rixton		54	53	49	54	50	54	74	5,A,i,b
617628	Bank Street, Glazebrook		50	49	43	50	43	47	74	5,A,i,b
617629	Norfolk Close, Cadishead		42	39	35	42	36	40	59	5,A,i,b
617630	Glazebrook Lane, Glazebrook		55	51	48	55	48	55	82	5,A,i,a
617631	Dam Head Lane, Glazebrook and committed development (Map Book ref.: MA04/112)		55	54	49	55	50	52	78	5,A,i,a
617632	Glazebrook Meadows, Glazebrook Lane, Glazebrook		58	54	51	58	51	56	76	5,A,i,b
617638	Glazebrook Methodist Church, Glazebrook Lane, Warrington	ML712718	50	48	43	49	43	51	79	1,A,i,a
617639	Glazebrook Lane, Glazebrook	ML712718	50	48	43	49	43	51	79	1,A,i,a
617641	Glazebrook Lane, Glazebrook		65	61	58	66	59	64	69	3,A,i,b
617642	Glazebrook Lane, Glazebrook		46	41	39	45	39	44	55	3,A,i,b
617644	Glazebrook Lane, Glazebrook		63	58	56	63	56	61	66	3,A,i,b
617645	Glazebrook Lane, Glazebrook		55	50	48	55	48	53	58	3,A,i,b
617651	Little Woolden Hall, Holcroft Lane, Culcheth		47	42	40	46	40	45	50	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 $L_{pAFmax,5min}$	
617964	Church of St Werburgh, Bent Lane, Warburton		53	49	46	53	47	52	57	3,A,i,b
617965	Hollinfare Cemetery, Dam Lane, Hollinfare		47	42	40	47	40	45	50	3,A,i,b
617998	Hamilton Avenue, Cadishead		42	37	35	42	35	40	51	3,A,i,a
618019	CDN Networks (Lower Sensitivity Offices), Warrington Lane, Lymm		<40	<35	31	<40	32	37	42	3,C,i,b
618065	Mill Lane, Lymm and committed development (Map Book ref.: MA04/127)	ML712719	46	45	41	46	41	48	80	1,A,i,a
618066	School Lane, Rixton		41	36	34	<40	34	39	49	3,C,i,b
618077	Glazebrook Lane, Glazebrook		50	45	43	50	43	48	53	3,A,i,b
618078	Dunham Road, Warburton		64	59	57	64	57	62	67	3,A,i,b
618079	Glazebrook Lane, Glazebrook		45	42	39	45	38	43	60	5,A,i,b
618094	Barns Lane, Dunham Massey		61	57	54	61	55	60	65	3,A,i,b
618112	Carr Green Lane, Warburton		<40	<35	<30	<40	<30	35	40	3,C,i,b
618116	Park Road, Warburton	ML712720	49	45	40	48	40	46	73	1,A,i,a
618117	Wet Gate Lane, Lymm		43	38	36	43	36	41	46	3,A,i,b
618118	Moss Brow Farm (Livestock)		50	46	43	50	44	49	54	3,A,i,b
618134	Little Woolden Moss		48	43	41	47	41	46	51	3,A,i,b
618202	Paddock Lane, Warburton		64	55	52	63	52	57	62	3,A,i,b
618203	Paddock Lane, Warburton		57	49	46	57	47	52	57	3,A,i,b
618204	Paddock Lane, Warburton		57	49	45	57	46	51	56	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 $L_{pAFmax,5min}$	
618205	Warburton Lane, Warburton		62	57	55	62	55	60	65	3,A,i,b
618206	Warburton Lane, Warburton		63	58	56	63	56	61	66	3,A,i,b
618207	Dunham Road, Warburton		61	57	54	61	55	60	65	3,A,i,b
618208	Warburton Lane, Warburton		56	51	49	56	49	54	59	3,A,i,b
618214	Spring Lane (Equestrian Centre), Lymm (Livestock)		44	41	37	43	38	43	48	3,A,i,b
618217	Broadoak School, Warburton Lane, Partington		51	46	43	51	44	49	54	3,A,i,b
618218	Milverton Farm, Dam Lane, Rixton		43	40	36	42	36	40	63	5,A,i,b
618220	Paddock Lane, Warburton		66	60	57	66	58	63	68	3,A,i,b
618232	Hollins Green Scout Centre, Manchester Road, Rixton		44	39	38	44	38	43	48	3,A,i,b
618240	The Drive, Lymm	ML712727	50	46	45	49	45	51	72	1,A,i,a
618243	Dam Lane, Rixton	ML712735	55	50	44	54	44	48	79	1,A,i,a
618244	Bank Street, Glazebrook	ML712735	55	50	44	54	44	48	79	1,A,i,a
618245	Glazebrook Lane, Glazebrook		60	55	53	60	53	58	63	3,A,i,b
618246	Glazebrook Lane, Glazebrook	ML712718	50	48	43	49	43	51	79	1,A,i,a
618262	Moss Hall Farm, Moss Side Lane, Rixton		<40	35	31	<40	32	35	58	5,C,i,b
618285	Lock Lane, Partington and committed development (Map Book ref.: MA04/105)		53	48	46	53	47	52	57	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 $L_{pAFmax,5min}$	
618286	North of Oak Road and West of Warburton Lane, Partington and committed development (Map Book ref.: MA04/121)		52	47	45	52	46	51	56	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[7] and planning practice on noise[8] 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: Broomedge to Glazebrook (MA04), Section 13.

[7] *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.

[8] 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: Broomedge to Glazebrook (MA04), 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 50dB$L_{pAeq,07:00 - 23:00}$, A3 building use of 50dB$L_{pAeq,07:00 - 23:00}$, and 45dB$L_{pAeq,23:00 - 07:00}$ and for A4 building. use 55dB$L_{pAeq,07:00 - 23:00}$ (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							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									
617510	Agden Lane Farm, Agden Lane, Lymm	0.6	0.16/0.60	-/-	Site set up (vibratory roller)	A	1	R	T	-	O	D3	MA04-C-C1
617511	Agden Lane, Lymm	0.7	0.12/0.64	-/-	Site set up (vibratory roller)	A	3	R	T	-	O	D3	MA04-C-C1
617515	Warrington Lane, Lymm	0.4	0.08/0.32	-/-	Site set up (vibratory roller)	A	4	R	T	-	-	D1	[9]
617524	Spring Lane, Lymm	0.3	0.04/0.20	-/-	Site set up (vibratory roller)	NA	1	R	T	-	-		
617526	Wet Gate Lane, Lymm	0.4	-/0.28	-/-	Ground stabilisation works (vibratory roller)	A	2	R	T	-	O, CT	D2	MA04-C-C2
617541	Bent Lane, Warburton	0.2	-/0.12	-/-	Site set up (vibratory roller)	NA	7	R	T	-	-		
617543	Paddock Lane, Warburton	0.3	0.08/0.28	-/-	Site set up (vibratory roller)	A	1	R	T	-	-	D3	~

[9] Activity takes place over a large area and the maximum vibration level should occur for less than one month.

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									
617544	Rose Cottage, Paddock Lane, Warburton	0.2	0.04/0.12	-/-	Site set up (vibratory roller)	NA	1	R	T	-	-		
617547	Warburton Lane, Warburton	1.6	-/<0.8[10]	-/-	Site set up (vibratory roller)	A	1	R	T	-	-	D1	~
617626	Rose Cottage, Dam Head Lane, Rixton	1.3	0.08/<0.8[10]	-/-	Site set up (vibratory roller)	A	1	R	T	-	O	D3	~
618078	Dunham Road, Warburton	0.3	0.08/0.20	-/-	Site set up (vibratory roller)	NA	1	R	T	-	-		
618117	Wet Gate Lane, Lymm	0.8	-/0.32	-/-	Ground stabilisation works (vibratory roller)	A	3	R	T	-	O, CT	D2	MA04-C-C2
618203	Paddock Lane, Warburton	0.4	-/0.28	-/-	Finishing works (vibratory roller)	A	1	R	T	-	O	D1	~
618206	Warburton Lane, Warburton	0.2	0.04/0.12	-/-	Site set up (vibratory roller)	NA	2	R	T	-	-		
618208	Warburton Lane, Warburton	0.5	0.08/0.44	-/-	Site set up (vibratory roller)	A	2	R	T	-	O	D3	~

[10] 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									
618220	Paddock Lane, Warburton	1.7	-/<0.8[10]	-/-	Site set up (vibratory roller)	A	1	R	T	-	O	D1	~

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											
617500	Agden Park Lane, Lymm	52/55[A]	-/-[B]	-/-[C]	Day: Earthworks	NA	17	R	T	-	-	-	-	-	
617501	Higher Lane, Lymm	52/55[B]	-/-[C]	-/-[C]	Day: Earthworks	NA	1	R	T	H	-	-	-	-	
617502	Higher Lane, Lymm	47/51[B]	-/-[C]	-/-[C]	Day: Highway works	NA	28	R	T	H	-	-	-	-	
617503	Higher Lane, Lymm	49/52[B]	-/-[C]	-/-[C]	Day: Viaduct construction	NA	1	R	T	H	-	-	-	-	
617506	Agden Brow, Lymm	55/57[A]	-/-[B]	-/-[C]	Day: Earthworks	NA	12	R	T	-	-	-	-	-	
617507	Broomedge Farm Cottages, Burford Lane, Lymm	53/56[A]	-/-[A]	-/-[B]	Day: Viaduct construction	NA	2	R	T	-	-	-	-	-	
617510	Agden Lane Farm, Agden Lane, Lymm	68/73[A]	30/33[B]	30/33[C]	Day: General site works Evening: General site works Night: General site works	A	1	R	T	-	-	D42	V	-	MA04-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											
617511	Agden Lane, Lymm	68/72[A]	31/34[A]	31/34[C]	Day: General site works Evening: General site works Night: General site works	A	3	R	T	-	-	D42	V	-	MA04-C-C1
617515	Warrington Lane, Lymm	65/71[A]	30/35[A]	30/35[B]	Day: Earthworks Evening: Earthworks Night: Earthworks	A	4	R	T	-	-	D16	-	-	MA04-C-C1
617516	Burford Lane, Lymm	52/55[A]	-/-[A]	-/-[A]	Day: Viaduct construction	NA	13	R	T	-	-	-	-	-	
617517	Spring Lane, Lymm	62/67[A]	-/-[A]	-/-[B]	Day: Earthworks	A	3	R	T	-	-	D5	-	-	MA04-C-C1
617518	Spring Lane, Lymm	58/62[A]	-/-[A]	-/-[A]	Day: Viaduct construction	NA	2	R	T	-	-	-	-	-	
617521	Warrington Lane, Lymm	57/62[A]	-/-[A]	-/-[A]	Day: Underbridge construction	NA	1	R	T	-	-	-	-	-	
617523	Bradshaw Lane, Lymm	52/56[A]	-/-[A]	-/-[A]	Day: Underbridge construction	NA	12	R	T	-	-	-	-	-	
617524	Spring Lane, Lymm	66/72[A]	-/-[A]	-/-[A]	Day: Underbridge construction	A	1	R	T	-	-	D18	-	-	~

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											
617526	Wet Gate Lane, Lymm	63/68[A]	-/32[A]	-/32[A]	Day: Earthworks Evening: Earthworks Night: Earthworks	A	2	R	T	-	-	D9	V, CT	-	MA04-C-C2
617528	Wet Gate Lane, Lymm and committed development (Map Book ref.: MA04/088)	53/57[A]	-/-[A]	-/-[B]	Day: Viaduct construction	A	22	R	T	-	-	-	CT	-	
617529	Wet Gate Lane, Lymm	53/56[A]	-/-[A]	-/-[A]	Day: Viaduct construction	A	3	R	T	-	-	-	CT	-	
617530	Chaise Meadow, Lymm	51/55[A]	-/-[A]	-/-[B]	Day: Overbridge construction	NA	115	R	T	-	-	-	-	-	
617532	Boarded Barn Farm, Birchbrook Road, Lymm	49/54[A]	-/-[A]	-/-[B]	Day: Overbridge construction	NA	1	R	T	-	-	-	-	-	
617533	Lower Carr Green Farm, Carr Green Lane, Warburton	53/57[A]	-/-[A]	-/-[A]	Day: Viaduct 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											
617534	Birchbrook Road, Lymm	49/53[C]	-/-[C]	-/-[C]	Day: Pond construction	NA	29	R	T	H	-	-	-	-	
617536	Bridge Farm, Carr Green Lane, Warburton	52/55[A]	-/-[A]	-/-[A]	Day: Viaduct construction	NA	1	R	T	-	-	-	-	-	
617537	Carr Green Lane, Warburton	53/57[A]	-/-[A]	-/-[A]	Day: Viaduct construction	NA	3	R	T	-	-	-	-	-	
617538	Old Mill Close, Lymm	54/60[A]	-/-[A]	-/-[B]	Day: Overbridge construction	NA	19	R	T	-	-	-	-	-	
617539	Dunham Road, Warburton	52/56[B]	-/-[C]	-/-[C]	Day: Overbridge construction	NA	2	R	T	H	-	-	-	-	
617540	Dunham Road, Warburton	53/58[A]	-/-[A]	-/-[B]	Day: Overbridge construction	NA	2	R	T	-	-	-	-	-	
617541	Bent Lane, Warburton	58/64[A]	-/-[A]	-/-[C]	Day: Overbridge construction	NA	7	R	T	-	-	-	-	-	
617542	Dunham Road, Warburton	56/61[A]	-/-[A]	-/-[B]	Day: Overbridge construction	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											
617543	Paddock Lane, Warburton	65/70[B]	-/30[C]	-/30[C]	Day: General site works Evening: General site works Night: General site works	NA	1	R	T	H	-	-	-	-	
617544	Rose Cottage, Paddock Lane, Warburton	62/67[C]	-/-[C]	-/-[C]	Day: mass haul ADT	NA	1	R	T	H	-	-	-	-	
617545	The Old Rectory, Wigsey Lane, Warburton	48/54[A]	-/-[A]	-/-[A]	Day: Overbridge construction	NA	1	R	T	-	-	-	-	-	
617547	Warburton Lane, Warburton	66/71[C]	-/33[C]	-/33[C]	Day: Overbridge construction Evening: Overbridge construction Night: Overbridge construction	NA	1	R	T	H	-	-	-	-	
617548	Werburgh Close, Lymm	55/59[A]	-/-[A]	-/-[B]	Day: General site works	NA	7	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											
617549	Bridge Road, Warburton	53/56[A]	-/-[A]	-/-[B]	Day: General site works	NA	16	R	T	-	-	-	-	-	
617550	Park Road, Warburton	56/61[A]	-/-[A]	-/-[A]	Day: Viaduct construction	NA	1	R	T	-	-	-	-	-	
617551	Warburton Lane, Warburton	53/58[B]	-/-[C]	-/-[C]	Day: Pond construction	NA	9	R	T	H	-	-	-	-	
617552	Warburton Bridge Road, Rixton	43/46[A]	-/-[A]	-/-[B]	Day: General site works	NA	1	R	T	-	-	-	-	-	
617553	Warburton Park Farm Cottage, Park Road, Warburton	58/65[A]	-/-[A]	-/-[A]	Day: Viaduct construction	NA	1	R	T	-	-	-	-	-	
617554	Lighthouse Farm, Moss Lane, Warburton	51/55[A]	-/-[A]	-/-[A]	Day: Pond construction	NA	1	R	T	-	-	-	-	-	
617555	Manchester Road, Rixton	49/53[B]	-/-[C]	-/-[C]	Day: Viaduct construction	NA	1	R	T	H	-	-	-	-	
617556	Brook Farm Close, Partington	49/53[A]	-/-[A]	-/-[C]	Day: Earthworks	NA	5	R	T	-	-	-	-	-	

Assessment location		Impact criteria				Significance criteria								
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	Significant effect
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
617557	Brook Farm, Manchester Road, Rixton	49/53[A]	-/-[B]	-/-[C]	Day: Viaduct construction	NA	1	R	T	H	-	-	-	-	
617558	Manchester Road, Rixton	49/54[C]	-/-[C]	-/-[C]	Day: Viaduct construction	NA	1	R	T	H	-	-	-	-	
617559	Oak Road, Partington	51/54[A]	-/-[A]	-/-[A]	Day: Earthworks	NA	23	R	T	-	-	-	-	-	
617561	Oak Road, Partington	52/55[A]	-/-[A]	-/-[A]	Day: General site works	NA	19	R	T	-	-	-	-	-	
617562	Oak Road, Partington	53/56[A]	-/-[A]	-/-[A]	Day: General site works	NA	10	R	T	-	-	-	-	-	
617563	Oak Road, Partington	51/55[A]	-/-[A]	-/-[A]	Day: Pond construction	NA	35	R	T	-	-	-	-	-	
617565	Lancashire Road, Partington	50/53[A]	-/-[A]	-/-[A]	Day: Pond construction	NA	71	R	T	-	-	-	-	-	
617566	Oak Road, Partington	53/56[A]	-/-[A]	-/-[A]	Day: General site works	NA	20	R	T	-	-	-	-	-	
617567	Oak Road, Partington	54/57[A]	-/-[A]	-/-[A]	Day: Viaduct construction	NA	8	R	T	-	-	-	-	-	
617569	Manchester Road, Rixton	51/57[C]	-/-[C]	-/-[C]	Day: Viaduct construction	NA	165	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											
617570	Marsh Brook Close, Rixton	49/52[A]	-/-[A]	-/-[A]	Day: General site works	NA	29	R	T	-	-	-	-	-	
617571	Oak Road, Partington	52/56[A]	-/-[A]	-/-[A]	Day: Viaduct construction	NA	20	R	T	-	-	-	-	-	
617572	Cheshire Road, Partington	50/53[A]	-/-[A]	-/-[A]	Day: Earthworks	NA	54	R	T	-	-	-	-	-	
617573	Manchester Road, Rixton	54/58[B]	-/-[C]	-/-[C]	Day: Viaduct construction	NA	11	R	T	H	-	-	-	-	
617575	Moss Side Lane, Rixton	44/47[A]	-/-[A]	-/-[B]	Day: Highway works	NA	50	R	T	-	-	-	-	-	
617576	Manchester Road, Rixton	55/59[B]	-/-[C]	-/-[C]	Day: Viaduct construction	NA	9	R	T	H	-	-	-	-	
617577	Briar Avenue, Rixton	51/53[A]	-/-[A]	-/-[A]	Day: Viaduct construction	NA	30	R	T	-	-	-	-	-	
617579	Elm Road, Rixton	46/49[A]	-/-[A]	-/-[A]	Day: Viaduct construction	NA	80	R	T	-	-	-	-	-	
617580	Cherry Walk, Partington	52/55[A]	-/-[A]	-/-[B]	Day: Viaduct construction	NA	98	R	T	-	-	-	-	-	
617581	Manchester Road, RIxton	56/61[A]	-/-[B]	-/-[C]	Day: Viaduct construction	NA	10	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											
617585	Millbank Hall Farm, Lock Lane, Partington	57/62[A]	-/-[A]	-/-[A]	Day: Viaduct construction	NA	1	R	T	-	-	-	-	-	
617586	Dawlish Close, Rixton	51/56[A]	-/-[A]	-/-[C]	Day: Viaduct construction	NA	25	R	T	-	-	-	-	-	
617588	School Lane, Rixton	46/51[A]	-/-[A]	-/-[A]	Day: Highway works	NA	41	R	T	-	-	-	-	-	
617589	Myrtle Road, Partington	50/54[A]	-/-[A]	-/-[B]	Day: Viaduct construction	NA	21	R	T	-	-	-	-	-	
617590	Manchester Road, Rixton	55/60[A]	-/-[B]	-/-[C]	Day: Viaduct construction	NA	10	R	T	H	-	-	-	-	
617591	St Helen's Close, Rixton	67/73[B]	39/42[C]	39/42[C]	Day: Highway works Evening: Highway works Night: Highway works	A	7	R	T	H	-	D2	-	-	MA04-C-C3
617592	Holly Walk, Partington	48/50[A]	-/-[A]	-/-[B]	Day: General site works	NA	217	R	T	-	-	-	-	-	
617593	School Lane, Rixton	53/58[A]	-/-[B]	-/-[C]	Day: Viaduct construction	NA	54	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											
617594	The Weint, Rixton	53/59[A]	-/-[A]	-/-[B]	Day: Viaduct construction	NA	11	R	T	-	-	-	-	-	
617596	School Lane, Rixton	53/58[A]	-/-[A]	-/-[A]	Day: Viaduct construction	NA	14	R	T	-	-	-	-	-	
617597	Forest Gardens, Partington	53/56[A]	-/-[A]	-/-[A]	Day: General site works	NA	52	R	T	-	-	-	-	-	
617600	Manchester Road, Rixton	62/68[A]	-/34[B]	-/34[C]	Day: Viaduct construction Evening: Highway works Night: Highway works	A	3	R	T	-	-	D11	-	-	MA04-C-C3
617601	Dam Lane, Rixton	56/61[A]	-/-[A]	-/-[B]	Day: Viaduct construction	NA	8	R	T	-	-	-	-	-	
617602	Black Swan, Rixton with Glazebrook, Warrington	62/67[A]	-/-[A]	-/-[C]	Day: Viaduct construction	A	1	R	T	-	-	D1	-	-	MA04-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											
617603	Lock Lane, Partington	51/54[A]	-/-[A]	-/-[B]	Day: Viaduct construction	NA	138	R	T	-	-	-	-	-	
617604	Mytholme Avenue, Cadishead	54/58[A]	-/-[B]	-/-[C]	Day: Viaduct construction	NA	12	R	T	-	-	-	-	-	
617606	Liverpool Road, Cadishead	51/56[A]	-/-[B]	-/-[C]	Day: General site works	NA	4	R	T	H	-	-	-	-	
617607	Dam Lane, Rixton	58/63[A]	-/-[B]	-/-[C]	Day: Viaduct construction	NA	4	R	T	-	-	-	-	-	
617608	Mytholme Avenue, Cadishead	54/59[A]	-/-[A]	-/-[C]	Day: Viaduct construction	NA	13	R	T	-	-	-	-	-	
617609	Liverpool Road, Cadishead	51/54[B]	-/-[C]	-/-[C]	Day: Viaduct construction	NA	18	R	T	H	-	-	-	-	
617610	Dam Lane, Rixton	60/65[A]	-/-[B]	-/-[C]	Day: Viaduct construction	NA	10	R	T	-	-	-	-	-	
617612	Dam Lane, Rixton	62/67[A]	-/-[A]	-/-[A]	Day: Viaduct construction	A	1	R	T	-	-	D6	-	-	~
617614	Rosebank Road, Cadishead	51/57[A]	-/-[A]	-/-[B]	Day: Viaduct construction	NA	16	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											
617616	Glazebrook Lane, Glazebrook	55/60[C]	-/-[C]	-/-[C]	Day: General site works	NA	6	R	T	H	-	-	-	-	
617617	Victory Road, Cadishead	52/56[A]	-/-[A]	-/-[A]	Day: Viaduct construction	NA	51	R	T	-	-	-	-	-	
617621	Carlton Way, Glazebrook	47/51[A]	-/-[A]	-/-[A]	Day: General site works	NA	55	R	T	-	-	-	-	-	
617622	Dam Lane, Rixton	56/60[B]	-/-[C]	-/-[C]	Day: General site works	NA	17	R	T	H	-	-	-	-	
617623	Bank Street, Glazebrook	53/57[A]	-/-[A]	-/-[C]	Day: General site works	NA	5	R	T	-	-	-	-	-	
617624	Bank Street, Glazebrook	58/62[A]	-/-[B]	-/-[B]	Day: Highway works	NA	17	R	T	-	-	-	-	-	
617625	Glazebrook Lane, Glazebrook	54/58[A]	-/-[A]	-/-[B]	Day: General site works	NA	26	R	T	-	-	-	-	-	
617626	Rose Cottage, Dam Head Lane, Rixton	73/78[A]	33/37[B]	33/37[C]	Day: General site works Evening: Highway works Night: Highway works	S	1	R	T	-	-	D35	V	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											
617628	Bank Street, Glazebrook	80/81[A]	42/42[A]	42/42[B]	Day: Highway works Evening: Highway works Night: Highway works	S	3	R	T	-	-	D8	-	NI	~
617629	Norfolk Close, Cadishead	48/53[A]	-/-[A]	-/-[A]	Day: Viaduct construction	NA	74	R	T	-	-	-	-	-	
617630	Glazebrook Lane, Glazebrook	52/57[A]	-/-[B]	-/-[C]	Day: Earthworks	NA	22	R	T	-	-	-	-	-	
617631	Dam Head Lane, Glazebrook and committed development (Map Book ref.: MA04/112)	57/62[A]	-/-[B]	-/-[C]	Day: General site works	NA	20	R	T	-	-	-	-	-	
617632	Glazebrook Meadows, Glazebrook Lane, Glazebrook	52/56[A]	-/-[B]	-/-[C]	Day: General site works	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											
617639	Glazebrook Lane, Glazebrook	54/59[A]	-/-[A]	-/-[B]	Day: General site works	NA	9	R	T	-	-	-	-	-	
617641	Glazebrook Lane, Glazebrook	53/57[C]	-/-[C]	-/-[C]	Day: General site works	NA	24	R	T	H	-	-	-	-	
617642	Glazebrook Lane, Glazebrook	59/63[A]	-/-[A]	-/-[A]	Day: Earthworks	NA	2	R	T	-	-	-	-	-	
617644	Glazebrook Lane, Glazebrook	51/54[B]	-/-[C]	-/-[C]	Day: General site works	NA	22	R	T	H	-	-	-	-	
617645	Glazebrook Lane, Glazebrook	52/55[A]	-/-[B]	-/-[C]	Day: Highway works	NA	5	R	T	-	-	-	-	-	
617998	Hamilton Avenue, Cadishead	48/52[A]	-/-[A]	-/-[A]	Day: Viaduct construction	NA	322	R	T	-	-	-	-	-	
618065	Mill Lane, Lymm and committed development (Map Book ref.: MA04/127)	47/50[A]	-/-[A]	-/-[B]	Day: Pond construction	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											
618066	School Lane, Rixton	53/57[A]	-/-[A]	-/-[A]	Day: Viaduct construction	NA	14	R	T	-	-	-	-	-	
618077	Glazebrook Lane, Glazebrook	59/65[A]	-/32[A]	-/32[B]	Day: Viaduct construction Evening: General site works Night: General site works	NA	1	R	T	-	-	-	-	-	
618078	Dunham Road, Warburton	62/68[B]	-/-[C]	-/-[C]	Day: General site works	NA	1	R	T	H	-	-	-	-	
618079	Glazebrook Lane, Glazebrook	61/66[A]	-/-[A]	-/-[A]	Day: General site works	A	1	R	T	-	-	D1	-	-	~
618112	Carr Green Lane, Warburton	51/55[A]	-/-[A]	-/-[A]	Day: Viaduct construction	NA	4	R	T	-	-	-	-	-	
618116	Park Road, Warburton	53/57[A]	-/-[A]	-/-[B]	Day: General site works	NA	21	R	T	-	-	-	-	-	
618117	Wet Gate Lane, Lymm	65/71[A]	-/32[A]	-/32[A]	Day: Earthworks Evening: Earthworks Night: Earthworks	A	3	R	T	-	-	D18	V, CT	-	MA04-C-C2

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											
618202	Paddock Lane, Warburton	56/61[B]	-/-[C]	-/-[C]	Day: General site works	NA	6	R	T	H	-	-	-	-	
618203	Paddock Lane, Warburton	59/66[A]	-/-[A]	-/-[C]	Day: Overbridge construction	A	1	R	T	-	-	D1	V	-	~
618204	Paddock Lane, Warburton	53/58[A]	-/-[A]	-/-[C]	Day: Pond construction	NA	4	R	T	-	-	-	-	-	
618205	Warburton Lane, Warburton	57/64[B]	-/-[C]	-/-[C]	Day: Pond construction	NA	1	R	T	H	-	-	-	-	
618206	Warburton Lane, Warburton	61/66[B]	-/-[C]	-/-[C]	Day: General site works	NA	2	R	T	H	-	-	-	-	
618207	Dunham Road, Warburton	59/65[B]	-/-[C]	-/-[C]	Day: General site works	NA	2	R	T	H	-	-	-	-	
618208	Warburton Lane, Warburton	66/71[A]	-/31[B]	-/31[C]	Day: General site works Evening: General site works Night: General site works	A	2	R	T	-	-	D37	V	-	~
618218	Milverton Farm, Dam Lane, Rixton	54/57[A]	-/-[A]	-/-[A]	Day: Earthworks	NA	6	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											
618220	Paddock Lane, Warburton	72/76[C]	33/38[C]	33/38[C]	Day: Overbridge construction Evening: Overbridge construction Night: Overbridge construction	S	1	R	T	H	-	D1	V	NI	~
618240	The Drive, Lymm	51/55[A]	-/-[A]	-/-[C]	Day: Underbridge construction	NA	32	R	T	-	-	-	-	-	
618243	Dam Lane, Rixton	57/62[A]	-/-[B]	-/-[B]	Day: General site works	NA	3	R	T	-	-	-	-	-	
618244	Bank Street, Glazebrook	57/62[A]	-/-[B]	-/-[B]	Day: General site works	NA	13	R	T	-	-	-	-	-	
618245	Glazebrook Lane, Glazebrook	50/55[B]	-/-[C]	-/-[C]	Day: General site works	NA	7	R	T	H	-	-	-	-	
618246	Glazebrook Lane, Glazebrook	53/57[A]	-/-[A]	-/-[B]	Day: General site works	NA	1	R	T	-	-	-	-	-	
618262	Moss Hall Farm, Moss Side Lane, Rixton	51/55[A]	-/-[A]	-/-[A]	Day: Viaduct construction	NA	4	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											
618285	Lock Lane, Partington and committed development (Map Book ref.: MA04/105)	53/56[A]	-/-[A]	-/-[C]	Day: General site works	NA	550	R	T	-	-	-	-	-	
618286	North of Oak Road and West of Warburton Lane, Partington and committed development (Map Book ref.: MA04/121)	52/55[A]	-/-[A]	-/-[C]	Day: Overbridge construction	NA	75	R	T	-	-	-	-	-	

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										
612890	Kids Planet (Office), Higher Lane, Lymm	43/47	-/-	-	-	Day: Earthworks	1	A4	T	H	-	-	-	-	
617520	Lymm Marina (Lower Sensitivity Offices), Warrington Lane, Lymm	61/65	-/-	22	1	Day: General site works	1	A4	T	-	-	D40	-	-	*
617531	Bollin Court (Offices), Mill Lane, Lymm	53/58	-/-	10	-	Day: Overbridge construction	1	A4	T	-	-	-	-	-	
617535	Heatley House (Offices), Mill Lane, Lymm	53/57	-/-	9	-	Day: Overbridge construction	1	A4	T	-	-	-	-	-	
617546	Old Church of St Werburgh, Wigsey Lane, Warburton	49/53	-/-	7	-	Day: Overbridge construction	1	A2	T	-	-	-	-	-	
617560	Little Oaks Nursery, Oak Road, Partington	46/49	-/-	3	-	Day: Viaduct construction	1	A3	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										
617568	Rixton Methodist Church, Chapel Lane, Warrington	47/51	-/-	3	-	Day: Viaduct construction	1	A2	T	-	-	-	-	-	
617583	St Helen's CofE Primary School, Birch Road, Rixton	50/53	-/-	9	-	Day: Viaduct construction	1	A3	T	-	-	-	-	-	
617595	Forest Gate Academy (Primary School), Daniel Adamson Avenue, Partington	50/52	-/-	6	-	Day: General site works	1	A3	T	-	-	-	-	-	
617598	Rixton-with-Glazebrook Community Hall, Manchester Road, Rixton	62/67	-/36	8	-	Day: Viaduct construction Night: Highway works	1	A2	T	-	-	D24	-	-	MA04-C-N1
617599	Church of St Helen, Dam Lane, Hollinfare	52/57	-/-	4	-	Day: Viaduct construction	1	A2	T	-	-	D5	-	-	MA04-C-N2
617613	EEF Ltd (Office), Glazebrook Lane, Warrington	58/64	-/-	16	-	Day: Viaduct construction	1	A4	T	-	-	D25	-	-	MA04-C-N3

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										
617615	Longfield Lodge Dental Practice (Office), Liverpool Road, Cadishead	48/51	-/-	1	-	Day: General site works	1	A4	T	-	-	-	-	-	
617618	All Creatures Veterinary Centre (Office), Glazebrook Lane, Warrington	52/57	-/-	3	-	Day: General site works	1	A4	T	-	-	-	-	-	
617638	Glazebrook Methodist Church, Glazebrook Lane, Warrington	56/61	-/-	9	-	Day: General site works	1	A2	T	-	-	D42	-	-	MA04-C-N4
617964	Church of St Werburgh, Bent Lane, Warburton	54/59	-/-	5	-	Day: Earthworks	1	A2	T	-	-	D9	-	-	*
617965	Hollinfare Cemetery, Dam Lane, Hollinfare	60/65	-/-	15	-	Day: Viaduct construction	1	A2	T	-	-	D50	-	-	*
618019	CDN Networks (Lower Sensitivity Offices), Warrington Lane, Lymm	53/58	-/-	15	-	Day: Highway works	1	A4	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										
618217	Broadoak School, Warburton Lane, Partington	49/52	-/-	2	-	Day: Pond construction	1	A3	T	-	-	-	-	-	
618232	Hollins Green Scout Centre, Manchester Road, Rixton	47/50	-/-	5	-	Day: Viaduct construction	1	A2	T	-	-	-	-	-	

Airborne sound: indirect effects

4.2.10 Construction road traffic associated with the construction phases of the Proposed Scheme would generate airborne noise. Based upon traffic information for the Proposed Scheme, the change in traffic noise level at a reference distance of 10m from the edge of the nearside carriageway 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 ≥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 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		
Wet Get Lane	Between Mill Lane and Spring Lane/Bradshaw Lane	R:15 NR:0	47.8	52.3	53.4	+4.5	+5.6	Yes	MA04-C-C2

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							
617543	Paddock Lane, Warburton	65/70	-/30	8	0	Day: General site works Night: General site works	Y	-	Y	-	Y	-
617642	Glazebrook Lane, Glazebrook (MA04/20)	59/63	-/-	14	0	Day: Earthworks	Y	-	-	-	Y	-
618118	Moss Brow Farm (Livestock) (MA04/7)	64/70	-/31	17	0	Day: Mass haul ADT Night: Earthworks	Y	-	-	-	-	-
618134	Little Woolden Moss	48/51	-/-	0	0	Day: Highway works	-	-	-	-	-	Y
618214	Spring Lane (Equestrian Centre), Lymm (Livestock)	62/67	-	20	0	Day: Viaduct construction	Y	-	-	-	-	-

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