

High Speed Rail (Crewe – Manchester) Environmental Statement

Volume 5: Appendix SV-002-0MA05

Sound, noise and vibration

MA05: Risleigh to Bamfurlong

Baseline and construction sound, noise and vibration report

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Baseline and construction sound, noise and
vibration report



Department
for Transport

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

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1 Introduction

- 1.1.1 This report is an appendix to the sound, noise and vibration assessment relating to the Risley to Bamfurlong area. 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 MA05 provides the baseline and predicted levels as described above.
- 1.1.4 The third appendix is also specific to MA05, and provides detailed operational sound, noise and vibration levels, see Volume 5, Appendix SV-003-0MA05. 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 MA05, the guidance within the following documents has been considered when applying the impact and significance criteria set out in Environmental Impact Assessment Scope and Methodology Report (SMR), (see Volume 5: Appendix CT-001-00001):

- the Wigan Metropolitan Borough Council (WMBC) Local Plan Core Strategy (adopted 2013)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 WMBC and WBC³ 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. WMBC 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 Wigan Metropolitan Borough Council (2013), *Wigan Local Plan Core Strategy (Adopted 2013)*. Available online at: <https://www.wigan.gov.uk/Docs/PDF/Council/Strategies-Plans-and-Policies/Planning/Adopted-Core-Strategy.pdf>.

² Warrington Borough Council (2014), *Local Plan Core Strategy (Adopted 2014)*. Available online at: https://www.warrington.gov.uk/sites/default/files/2020-09/Local_Plan_Core_Strategy_Feb_2015.pdf.

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

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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: Risley to Bamfurlong (MA05), 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 Risley to Bamfurlong area is characterised by a mix of large and 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. There are several motorways within this community area including the M6, the M62 and the interchange between the two at junction 21a of the M6 and junction 10 of the M62. There are several busy main roads including the A580 East Lancashire Road on the south side of Lowton, the A579 Atherleigh Way through Leigh, the A58 Lily Lane and the A573 Wigan Road in the Platt Bridge and Abram area, the A573 Wigan Road through Golborne and Winwick and the A574 Warrington Road in the north-east area of Warrington. The West Coast Main Line (WCML) railway passes close to Golborne, and the northern route of the Liverpool to Manchester Line (Chat Moss) passes close to the north of Culcheth.
- 3.1.2 The community of Culcheth is characterised by sound from the A574 Warrington Road which runs through the area. Daytime free-field sound levels are typically around 60dB – 70dB and 55dB – 65dB during night-time in the area of dwellings facing the A574 Warrington Road. Further from the A574 Warrington Road, sound from distant traffic produces levels typically around 40dB – 45dB during the daytime and 35dB – 40dB during the night-time.
- 3.1.3 The communities of Lowton St Mary's, Lowton and Lowton Common are characterised by sound from the A572 Newton Road and the B5207 Church Lane/Golborne Road. These run through the town and the A580 East Lancashire Road which runs through the southern area. Closer to these existing roads, daytime sound levels are typically around 60dB – 75dB and 55dB – 65dB in the night-time. Further from these roads, sound levels are typically between 40dB – 50dB during the daytime and 30dB – 40dB during the night-time.
- 3.1.4 The community of Golborne is characterised by sound from the B5207 Church Lane/Golborne Road and the A573 Church Street and the WCML in the western areas. The south side of Lowton is characterised by sound from the A580 East Lancashire Road. Existing sound levels in the residential areas closest to the Proposed Scheme are low as they are removed from major roads and the WCML. Existing sound levels are typically 40dB during the daytime and 35dB during the night-time.
- 3.1.5 The communities of Abram, Abram Brow and Dover are characterised by sound from the A573 Warrington Road and the WCML. Existing sound levels are typically 50dB – 55dB during the daytime and 40dB – 45dB during the night-time.
- 3.1.6 The Bamfurlong and Bryn Gates area is characterised by sound from the A58 Lily Lane and the WCML. Closer to the WCML, daytime sound levels are typically around 65dB – 60dB in

the night-time. Further from the WCML roads noise levels are typically between 50dB – 65dB daytime and 40dB – 55dB 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 MA05, 17 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:

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

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

3.4 Existing baseline sound modelling

- 3.4.1 Baseline sound levels have been modelled where existing sound levels at assessment locations are dominated by transport sources which can be reliably modelled. Methodologies from the Calculation of Road Traffic Noise⁴ and the Calculation of Railway Noise⁵ 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 Risley to Bamfurlong area, noise from all major roads including the M62, the M6, the A572 Newton Road, the A573 Warrington Road/Wigan Road, the A574 Warrington Road, the A579 Winwick Lane, the A580 East Lancashire Road and the A58 Lily Lane, and railway noise from the WCML and the Liverpool to Manchester railway line (Chat Moss) 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 &

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

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

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Rural Affairs' (Defra) Noise Action Plans⁶ and trunk roads, which are likely to be resurfaced under future routine maintenance programmes, have been assumed to have a low noise surface in 2038. Assuming a low noise surface will result in a lower baseline sound level compared with other road surface types. This is conservative as a lower baseline will have the effect of increasing predicted adverse airborne noise effects during operation.

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

3.6 Baseline sound levels

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

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

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.

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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.

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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}	
617637	School Lane, Risley		46	41	39	45	39	43	53	3,A,i,b
617643	Inglewood Close, Birchwood	ML712717	49	48	42	49	42	48	71	1,A,i,a
617646	UK Waste Management (Lower Sensitivity Offices), Birchwood Way, Warrington		49	44	41	48	41	46	51	3,A,i,b
617647	Risley Remand Centre East, Warrington Road, Risley		47	42	40	47	40	45	50	3,A,i,b
617648	Clare's Farm, Warrington Road, Risley	ML712737	49	47	46	49	46	52	76	1,A,i,a
617649	Warrington Road, Risley		64	59	57	64	58	63	68	3,A,i,b
617650	Hole Mill Farm, Holcroft Lane, Culcheth		64	59	57	64	58	63	68	3,A,i,b
617652	Yew Tree Court (Office), Taylor Business Park, Risley		55	50	47	55	48	53	58	3,A,i,b
617655	New Hall Farm, Severn Road, Culcheth		40	35	33	<40	33	38	43	3,C,i,b
617656	St Lewis' Catholic Primary School, Mustard Lane, Croft		43	38	36	43	36	41	46	3,A,i,b
617657	Holcroft Lane, Culcheth		45	40	38	44	38	43	48	3,A,i,b
617658	Mustard Lane, Croft		50	45	43	50	43	48	53	3,A,i,b
617659	Mustard Lane, Croft		51	46	44	51	44	49	54	3,A,i,b
617661	Howard Road, Culcheth	ML712738	47	43	42	46	42	47	74	1,A,i,a
617662	Howard Road, Culcheth	ML712738	47	43	42	46	42	47	74	1,A,i,a

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617663	Howard Road, Culcheth	ML712738	47	43	42	46	42	47	74	1,A,i,a
617666	Severn Road, Culcheth	ML712738	47	43	42	46	42	47	74	1,A,i,a
617672	Severn Road, Culcheth	ML712738	47	43	42	46	42	47	74	1,A,i,a
617674	Severn Road, Culcheth	ML712738	47	43	42	46	42	47	74	1,A,i,a
617675	Howard Road, Culcheth	ML712738	47	43	42	46	42	47	74	1,A,i,a
617676	Severn Road, Culcheth		40	35	33	<40	33	38	43	3,C,i,b
617680	Severn Road, Culcheth	ML712738	47	43	42	46	42	47	74	1,A,i,a
617682	Downham Avenue, Culcheth		<40	<35	33	<40	33	38	43	3,C,i,b
617686	Crossfield Avenue, Culcheth		43	38	36	43	36	41	46	3,A,i,b
617689	Medway Road, Culcheth	ML712738	47	43	42	46	42	47	74	1,A,i,a
617692	Ratcliffe House Farm, Medway Road, Culcheth		42	37	34	41	35	40	45	3,A,i,b
617695	Crossfield Avenue, Culcheth		45	40	38	45	39	44	49	3,A,i,b
617699	Newchurch Lane, Culcheth		50	46	43	50	44	49	54	3,A,i,b
617702	Crossfield Avenue, Culcheth		41	36	34	41	35	40	45	3,A,i,b
617703	Wigshaw Lane, Culcheth		59	55	52	59	53	58	63	3,A,i,b
617706	Warrington Road, Culcheth		62	57	55	62	56	61	66	3,A,i,b
617708	Wigshaw Lane, Culcheth	ML712739	53	48	48	52	48	54	84	1,A,i,a
617711	Newchurch Community Primary School, Glebeland, Culcheth		53	48	46	53	47	52	57	3,A,i,b
617712	Robins Lane, Culcheth		49	44	42	49	43	48	53	3,A,i,b
617713	Pendle Gardens, Culcheth		45	41	38	45	39	44	49	3,A,i,b

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617717	Blakeley Farm, Wigshaw Lane, Culcheth		<40	<35	<30	<40	<30	35	48	3,C,i,b
617718	Glebeland, Culcheth		49	44	42	49	43	48	53	3,A,i,b
617719	Pendle Gardens, Culcheth	ML712740	47	41	40	46	40	45	80	1,A,i,a
617720	Pendle Gardens, Culcheth	ML712740	47	41	40	46	40	45	80	1,A,i,a
617721	Pendle Gardens, Culcheth	ML712739	53	48	48	52	48	54	84	1,A,i,a
617723	Pendle Gardens, Culcheth		54	50	47	54	48	53	58	3,A,i,b
617724	Pendle Gardens, Culcheth	ML712740	47	41	40	46	40	45	80	1,A,i,a
617725	Wigshaw Lane, Culcheth		57	53	50	57	50	55	60	3,A,i,b
617730	Wigshaw Lane, Culcheth		64	59	56	63	57	62	67	3,A,i,b
617742	Rilston Avenue, Culcheth		<40	35	33	<40	34	38	49	3,C,i,b
617746	Clifton Avenue, Culcheth		<40	<35	32	<40	33	38	50	3,C,i,b
617748	Brookfield Road, Culcheth		<40	<35	30	<40	31	36	51	3,C,i,b
617751	Brookfield Road, Culcheth		<40	<35	33	<40	33	38	51	3,C,i,b
617754	Kenyon Lane, Kenyon	ML712743	52	47	45	51	45	51	71	1,A,i,a
617755	Brookfield Road, Culcheth		40	35	33	<40	34	38	53	3,C,i,b
617757	Brookfield Road, Culcheth		<40	<35	32	<40	32	37	52	3,C,i,b
617758	Christian Fellowship Church, Hob Hey Lane, Culcheth		45	41	38	46	39	44	54	3,A,i,b
617760	Beechwood Lane, Culcheth		<40	<35	32	<40	33	37	53	3,C,i,b
617764	Common Lane, Culcheth		55	50	48	55	48	53	58	3,A,i,b
617767	Broseley Lane, Kenyon		62	57	55	62	56	61	66	3,A,i,b

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			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}	
617768	Broseley Lane, Kenyon		60	55	53	60	54	59	64	3,A,i,b
617769	Kenyon Lane, Kenyon		53	48	46	53	47	51	73	3,A,i,b
617771	Broseley Lane, Kenyon		51	48	46	51	46	49	72	5,A,i,b
617772	Wilton Lane, Culcheth	ML712762	59	58	57	59	57	61	91	1,A,i,a
617773	Kenyon Lane, Lowton		47	41	39	47	39	44	58	3,A,i,b
617774	Clough Farm, Wilton Lane, Culcheth		53	49	47	53	47	51	70	5,A,i,b
617775	Laylands Farm, Broseley Lane, Culcheth	ML712742	59	56	51	58	51	61	78	1,A,i,a
617776	Newton Road, Lowton and committed development (Map Book ref.: MA05/287)		54	48	45	54	46	51	56	3,A,i,b
617777	East Lancashire Road, Lowton		70	63	61	69	62	67	72	3,A,i,b
617778	East Lancashire Road, Lowton		70	64	62	70	62	67	72	3,A,i,b
617779	Newton Road, Lowton		68	62	59	68	60	65	70	3,A,i,b
617783	Rowan Avenue, Lowton		58	52	49	58	50	55	60	3,A,i,b
617784	Maple Avenue, Lowton		54	48	46	54	47	52	57	3,A,i,b
617785	Rowan Avenue, Lowton		48	41	39	47	40	45	51	3,A,i,b
617786	Cedar Avenue, Lowton		51	45	43	51	43	48	53	3,A,i,b
617788	Kings Avenue, Lowton		46	39	37	45	38	43	50	3,A,i,b
617789	Beech Avenue, Lowton		47	40	38	47	39	44	49	3,A,i,b
617790	Cedar Avenue, Lowton		50	43	41	49	41	46	51	3,A,i,b

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617791	Brancaster Drive, Lowton		48	42	39	47	40	45	50	3,A,i,b
617792	Lowton Social Club, Newton Road, Lowton		69	62	60	69	60	65	70	3,A,i,b
617793	Brancaster Drive, Lowton		45	39	36	45	37	42	50	3,A,i,b
617795	Lowton Junior & Infant School, Newton Road, Lowton		48	42	39	48	40	45	50	3,A,i,b
617796	Lowton Youth and Community Centre, Newton Road, Lowton		58	51	49	58	49	54	59	3,A,i,b
617798	Gymetc. (Lower Sensitivity Offices), Newton Road, Lowton		65	59	56	65	57	62	67	3,A,i,b
617799	Newton Road, Lowton		64	57	55	63	55	60	65	3,A,i,b
617800	Stradbroke Close, Lowton		45	39	36	45	37	42	49	3,A,i,b
617801	Moorfield Crescent, Lowton		44	38	36	44	37	42	49	3,A,i,b
617802	Planewood Gardens, Lowton		49	43	40	49	41	46	51	3,A,i,b
617803	Elm Tree Road, Lowton		43	36	34	42	35	40	48	3,A,i,b
617804	Newton Road Childrens Home, Hesketh Meadow Lane, Lowton		57	50	48	57	49	54	59	3,A,i,b
617805	Pocket Nook Lane, Lowton		47	41	39	47	39	44	51	3,A,i,b
617808	Hesketh Meadow Lane, Lowton		48	41	39	47	39	44	49	3,A,i,b
617809	Oaklands Road, Lowton		45	39	36	45	37	42	48	3,A,i,b
617811	Alder Road, Lowton		44	37	35	43	36	41	47	3,A,i,b
617812	Cherry Tree Road, Lowton		42	36	34	42	35	40	47	3,A,i,b
617813	Newton Road, Lowton		62	55	53	61	53	58	63	3,A,i,b

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617815	Waddington Close, Lowton		42	36	34	42	34	39	47	3,A,i,b
617816	Morgans Way, Lowton and committed development (Map Book ref.: MA05/088)		48	41	39	47	40	44	49	3,A,i,b
617817	Newton Road, Lowton		56	49	46	55	47	52	57	3,A,i,b
617819	Waddington Close, Lowton		44	37	35	43	36	41	47	3,A,i,b
617821	Barford Drive, Lowton	ML712722	45	40	38	44	38	45	69	1,A,i,a
617822	Newton Road, Lowton		46	40	37	46	38	43	48	3,A,i,b
617823	Lowton St Mary's C of E Primary School, Newton Road, Lowton	ML712722	45	40	38	44	38	45	69	1,A,i,a
617824	Edgerton Road		41	<35	33	41	33	38	46	3,C,i,b
617826	Barford Drive, Lowton		47	41	38	47	39	44	49	3,A,i,b
617828	Horncastle Close, Lowton		40	<35	32	<40	33	38	46	3,C,i,b
617829	Cheetham Fold, Lowton		46	39	37	45	37	42	47	3,A,i,b
617830	Lane Head Avenue, Lowton		41	<35	33	41	33	38	46	3,C,i,b
617831	Tyrer Walk, Lowton		<40	<35	31	<40	32	37	46	3,C,i,b
617832	St Mary's Church, Newton Road, Lowton		57	51	48	57	49	54	59	3,A,i,b
617833	Newton Road, Lowton		54	47	45	53	45	50	55	3,A,i,b
617834	Horncastle Close, Lowton		40	<35	32	<40	33	38	46	3,C,i,b
617835	Silsden Avenue, Lowton		54	48	46	54	46	51	56	3,A,i,b
617836	Alfred Road, Lowton		49	43	40	49	41	46	51	3,A,i,b

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617837	Newton Road, Lowton		51	45	43	51	44	49	54	3,A,i,b
617838	Alfred Road, Lowton		43	37	34	43	35	40	46	3,A,i,b
617840	Lowton Independent Methodist Church, Newton Road, Lowton		49	43	41	49	41	46	51	3,A,i,b
617841	The Pipers, Lowton		41	36	33	41	34	39	45	3,A,i,b
617842	St Nicholas Road, Lowton		43	37	34	43	35	40	46	3,A,i,b
617843	Bodden Street, Lowton		43	37	34	42	35	40	46	3,A,i,b
617844	Brook Lynn Avenue, Lowton		41	<35	33	41	33	38	45	3,C,i,b
617845	Bodden Street, Lowton		44	38	35	43	36	41	46	3,A,i,b
617847	Stone Pit Close, Lowton		41	35	33	41	34	39	45	3,A,i,b
617848	Exact Property services (Offices), Moss Industrial Estate, Leigh		45	40	37	45	38	43	48	3,A,i,b
617849	Stone Pit Close, Lowton		42	36	34	42	35	40	46	3,A,i,b
617850	Holtswell Close, Lowton		43	38	35	43	36	41	46	3,A,i,b
617851	Green House Close, Lowton		45	39	37	45	38	43	48	3,A,i,b
617852	Sandy Lane, Lowton		65	59	56	65	57	62	67	3,A,i,b
617853	Linbeck Grove, Lowton		42	37	35	42	35	40	46	3,A,i,b
617854	Ryecroft Avenue, Lowton		45	39	37	45	38	43	48	3,A,i,b
617856	Allied Infrastructure Management (Lower Sensitivity Offices), Moss Industrial Estate, Leigh		42	37	34	42	35	40	45	3,A,i,b
617857	Warren's Croft Farm, Garton Common, Lowton		45	39	37	45	38	43	48	3,A,i,b

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617859	Slag Lane, Lowton		61	55	53	61	54	59	64	3,A,i,b
617860	Slag Lane, Lowton		49	44	41	49	42	47	52	3,A,i,b
617861	Garton Common, Lowton		45	39	37	45	38	43	48	3,A,i,b
617862	Belmont Avenue, Golborne	ML712748	46	41	41	45	41	48	74	1,A,i,a
617864	Slag Lane, Lowton		66	60	58	65	59	64	69	3,A,i,b
617865	Marmion Close, Lowton		42	37	34	42	35	40	48	3,A,i,b
617868	Scott Road, Lowton		<40	<35	<30	<40	<30	34	52	3,C,i,b
617870	Scott Road, Lowton		<40	<35	<30	<40	<30	35	48	3,C,i,b
617872	Rothwell Road, Golborne	ML712748	46	41	41	45	41	48	74	1,A,i,a
617873	Apple Dell Avenue, Golborne		<40	<35	32	<40	32	37	53	3,C,i,b
617874	Slag Lane, Lowton		69	64	62	69	63	68	73	3,A,i,b
617875	Golborne High School, Lowton Road, Golborne	ML712748	46	41	41	45	41	48	74	1,A,i,a
617876	Scott Road, Lowton		<40	<35	32	<40	33	38	49	3,C,i,b
617878	Scott Road, Lowton		<40	<35	<30	<40	31	36	49	3,C,i,b
617880	Pendle Road, Golborne		<40	<35	32	<40	32	37	54	3,C,i,b
617881	Lowton Road, Golborne		<40	<35	33	<40	33	37	55	3,C,i,b
617883	Haddon Road, Lowton		<40	<35	32	<40	32	37	53	3,C,i,b
617884	Haddon Road, Lowton		<40	<35	<30	<40	<30	34	54	3,C,i,b
617885	Haddon Road, Lowton		<40	<35	<30	<40	31	35	53	3,C,i,b
617886	Ashton Road, Golborne		65	61	60	65	60	62	87	5,A,i,b

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617887	Saddle Tree Fold, Lowton		47	41	39	47	40	45	50	3,A,i,b
617888	Slag Lane, Lowton		49	44	41	49	42	47	52	3,A,i,b
617889	Wigan Road, Golborne		55	51	49	55	49	53	72	3,A,i,b
617890	Slag Lane, Lowton		<40	<35	<30	<40	<30	34	48	3,C,i,b
617891	Lightshaw Lane, Golborne	ML712750	44	38	38	44	38	45	70	1,A,i,a
617892	Wigan Road, Golborne		50	45	43	49	43	48	64	3,A,i,b
617894	Locker Lane, Ashton-in-Makerfield	ML712731	51	46	44	50	44	50	69	1,A,i,a
617895	Aye Bridge Road, Abram		47	46	47	47	47	50	77	5,A,i,b
617896	Riding Lane, Ashton-in-Makerfield		58	53	50	58	52	57	62	3,A,i,b
617897	Crankwood Road, Abram		46	42	41	46	41	44	68	5,A,i,b
617898	Warrington Road, Abram		54	50	48	54	49	52	72	3,A,i,b
617899	Warrington Road, Abram		70	65	63	70	63	68	73	3,A,i,b
617900	Crown Wood Court, Bamfurlong		47	41	40	46	41	43	68	5,A,i,b
617901	Kinterbury Street, Bamfurlong		43	42	42	43	42	44	71	5,A,i,b
617902	Abram Bryn Gates Primary School, Lily Lane, Abram		58	51	49	58	50	55	67	3,A,i,b
617903	Lily Lane, Bamfurlong		66	59	57	66	58	63	68	3,A,i,b
617904	Church of the Good Shepherd, Lily Lane, Abram		65	58	56	65	57	61	66	3,A,i,b
617905	Lily Lane, Bamfurlong		58	58	59	58	59	62	89	4,A,i,b
617906	Lily Lane, Bamfurlong		47	45	46	47	46	49	76	5,A,i,b
617908	Warrington Road, Abram		52	47	45	52	46	51	67	3,A,i,b

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617909	Lily Lane, Bamfurlong		65	62	63	64	63	65	92	5,A,i,b
617910	Lily Lane, Bamfurlong		46	45	45	46	45	48	75	5,A,i,b
617913	Warrington Road, Abram		51	46	44	51	45	49	68	3,A,i,b
617914	Dorothy Walk, Bamfurlong		62	61	63	62	63	66	93	5,A,i,b
617915	Winstanley Road, Bamfurlong		47	44	44	47	45	47	74	5,A,i,b
617916	Lily Lane, Bamfurlong		69	65	65	69	65	66	93	5,A,i,b
617918	Winstanley Road, Bamfurlong		60	60	61	60	61	64	91	4,A,i,b
617919	Bodmin Drive, Platt Bridge		58	51	49	57	49	54	64	3,A,i,b
617920	Portland Close, Platt Bridge	ML712732	54	52	49	54	49	59	85	1,A,i,a
617921	Stratton Drive, Platt Bridge		59	59	60	59	60	63	90	4,A,i,b
617922	St John's C. of E. Primary School, Simpkin Street, Abram	ML712726	47	40	38	46	38	47	76	1,A,i,a
617923	Warrington Road, Abram		47	42	40	47	41	45	65	3,A,i,b
617924	Tram Street, Platt Bridge		57	51	49	57	49	54	66	3,A,i,b
617925	Warrington Road, Abram		67	62	60	67	61	66	71	3,A,i,b
617927	Holy Family Catholic Primary School, Wigan Street, Platt Bridge		41	37	36	41	37	38	64	5,A,i,b
617950	Emerald Drive, Croft		43	38	36	42	36	41	46	3,A,i,b
617951	Mustard Lane, Croft		55	50	48	56	49	54	59	3,A,i,b
617952	Heath Lane, Croft		43	39	36	43	37	42	47	3,A,i,b
617953	Wigshaw Lane, Culcheth		62	57	54	62	55	60	65	3,A,i,b
617954	Kenyon Farm, Heath Lane, Croft		<40	<35	<30	<40	<30	33	48	3,C,i,b

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617955	Hill Top Farm, Heath Lane, Croft		<40	<35	<30	<40	<30	34	48	3,C,i,b
617956	Sandy Lane, Lowton		47	41	39	47	40	45	50	3,A,i,b
617957	Sandy Lane, Lowton		44	38	36	44	37	42	47	3,A,i,b
617958	Sandy Lane, Lowton		56	50	48	56	49	54	59	3,A,i,b
617959	Belle Vue, Lowton		44	38	36	43	36	41	46	3,A,i,b
617960	Slag Lane, Lowton	ML712747	52	52	48	51	48	51	72	1,A,i,a
617961	Green Lane, Lowton		44	38	36	44	37	42	47	3,A,i,b
617962	Byrom Lane, Lowton		53	47	44	52	45	50	55	3,A,i,b
617963	Byrom Lane, Lowton		45	40	37	45	38	43	48	3,A,i,b
617966	Green Meadow Independent Primary School and First Steps Day Nursery, Robson Way, Lowton		41	35	33	41	34	38	46	3,A,i,b
617967	Stradbroke Close, Lowton		46	40	38	46	38	43	49	3,A,i,b
617968	Warrington Road, Abram		45	41	38	45	39	44	54	3,A,i,b
617969	Warrington Road, Abram		46	42	40	46	41	44	66	3,A,i,b
617970	Portland Close, Platt Bridge	ML712732	54	52	49	54	49	59	85	1,A,i,a
617971	Lily Lane, Bamfurlong		45	43	44	45	44	47	74	5,A,i,b
617973	Epsom Drive, Bamfurlong		46	44	45	46	45	48	75	5,A,i,b
617977	Porlock Close, Platt Bridge	ML712753	47	45	42	47	42	51	80	1,A,i,a
617978	Warrington Road, Risley		45	40	38	44	38	43	48	3,A,i,b
617983	Thrilmere Avenue, Abram		43	39	37	43	37	41	60	3,A,i,b
617984	Warrington Road, Abram		51	47	45	51	45	50	67	3,A,i,b

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617985	Elm Road, Abram		<40	<35	31	<40	32	34	57	5,C,i,b
617986	Warrington Road, Abram		44	40	39	44	39	42	65	5,A,i,b
617987	Warrington Road, Abram		47	43	43	47	43	45	70	5,A,i,b
617989	Warrington Road (Offices), Culcheth		52	48	45	52	45	50	55	3,A,i,b
617990	Kaye Avenue, Culcheth		42	37	35	42	36	41	46	3,A,i,b
617991	Warrington Road, Culcheth		68	64	61	68	62	67	72	3,A,i,b
617992	Chatburn Court, Warrington Road, Culcheth		61	56	54	61	55	60	65	3,A,i,b
617997	Ridgeway, Lowton		44	38	36	44	36	41	48	3,A,i,b
617999	Ullswater Road, Golborne		42	36	34	41	35	39	54	3,A,i,b
618003	Stonechat Close, Lowton		42	36	34	42	35	40	47	3,A,i,b
618004	Redmain Grove, Lowton		41	36	33	41	34	39	47	3,A,i,b
618008	Smithy Garage (Lower Sensitivity Offices), Church Lane, Culcheth		45	40	37	44	38	43	48	3,A,i,b
618009	Arcon Construction Supplies (Lower Sensitivity Offices), Leacroft Road, Birchwood		76	71	69	75	69	74	79	3,A,i,b
618010	Bamfurlong Police Station (Office), Bryn Gates Lane, Bamfurlong		42	37	37	42	37	38	65	5,A,i,b
618011	Newchurch Parish Church, Church Lane, Culcheth		42	37	35	41	35	40	46	3,A,i,b
618012	St Catherine's Roman Catholic Primary School, Cranham Avenue, Lowton		43	37	35	43	35	40	48	3,A,i,b

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618013	Warrington Road, Abram		53	49	47	53	48	52	71	3,A,i,b
618014	Lowton Church of England High School, Newton Road, Lowton		46	41	39	46	39	44	49	3,A,i,b
618015	Warrington Road, Risley		58	53	51	58	52	57	62	3,A,i,b
618016	Fieldfare Close, Lowton		43	37	35	43	36	41	49	3,A,i,b
618017	Sundial House, Warrington Road, Culcheth		47	43	40	48	41	46	51	3,A,i,b
618035	Newchurch Old Rectory, Culcheth		57	52	50	57	51	56	61	3,A,i,b
618067	Rockingham Close, Birchwood		49	44	42	48	42	47	52	3,A,i,b
618068	Rowan Avenue, Lowton		65	59	57	65	57	62	67	3,A,i,b
618069	Abbotsford Close, Lowton		43	38	36	43	37	41	49	3,A,i,b
618070	Burley Avenue, Lowton		41	35	33	41	34	39	50	3,A,i,b
618071	Lowton Road, Golborne		60	53	51	59	52	57	62	3,A,i,b
618072	Warrington Road, Abram		51	46	44	51	45	49	66	3,A,i,b
618073	Warrington Road, Abram		50	45	43	50	44	49	60	3,A,i,b
618074	Finchdale Gardens, Lowton		44	39	36	44	37	42	49	3,A,i,b
618075	The Limes, Culcheth		44	39	37	45	39	44	51	3,A,i,b
618076	Ellesmere Road, Culcheth		47	43	40	47	41	46	51	3,A,i,b
618080	Slag Lane, Lowton	ML712747	52	52	48	51	48	51	72	1,A,i,a
618081	Balmer's Farm, Wigan Road, Golborne		53	50	49	53	49	51	76	5,A,i,b
618082	Warrington Road, Abram		56	51	49	56	50	54	70	3,A,i,b

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618083	Rothwells Farm (Residential), Lowton		42	39	38	42	38	39	66	5,A,i,b
618084	Rothwells Farm (Residential), Lowton		<40	35	34	<40	35	37	62	5,C,i,b
618085	Rothwells Farm (Residential), Lowton		<40	<35	33	<40	34	36	60	5,C,i,b
618086	Rothwells Farm (Residential), Lowton		40	37	35	<40	36	38	62	5,C,i,b
618087	Rothwells Farm (Residential), Lowton		<40	<35	33	<40	34	37	58	5,C,i,b
618088	Hesketh Meadow Lane, Lowton		42	36	34	42	35	40	47	3,A,i,b
618089	Hesketh Meadow Lane, Lowton		42	35	33	41	34	39	47	3,A,i,b
618110	Taylor Business Park (Lower Sensitivity Offices), Risley		41	37	34	41	35	40	45	3,A,i,b
618111	Lowton Road, Golborne		45	40	39	45	39	42	65	5,A,i,b
618119	72 Slag Lane, Lowton (Livestock)	ML712747	52	52	48	51	48	51	72	1,A,i,b
618120	Aye Bridge Farm (Livestock)		47	47	48	47	48	50	77	5,A,i,b
618121	Abram Flashes SSSI ⁷		<40	36	35	<40	35	37	62	5,C,i,b
618122	Abram Flashes SSSI		54	48	47	54	48	51	74	3,A,i,b
618123	Abram Flashes SSSI		44	40	40	44	40	41	68	5,A,i,b
618124	Abram Flashes SSSI		46	46	47	46	47	50	77	5,A,i,b

⁷ Site of Special Scientific Interest.

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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}	
618125	Bryn Marsh & Ince Moss SSSI		48	48	49	48	49	52	79	4,A,i,b
618126	Bryn Marsh & Ince Moss SSSI		43	43	43	43	43	46	73	4,A,i,b
618127	Rixton Moss		<40	<35	<30	<40	<30	32	54	5,C,i,b
618128	Rixton Moss		43	40	36	43	36	40	60	5,A,i,b
618129	Silver Lane Ponds		40	36	33	<40	33	38	43	3,C,i,b
618130	Silver Lane Ponds		42	37	35	41	35	40	45	3,A,i,b
618131	Holcroft Moss		48	43	41	47	41	46	52	3,A,i,b
618132	Holcroft Moss		49	44	42	48	42	47	52	3,A,i,b
618133	Holcroft Moss		51	46	44	50	44	49	54	3,A,i,b
618135	Three Sisters Wetlands		<40	<35	<30	<40	<30	32	59	5,C,i,b
618136	Edge Green Common		40	37	36	<40	36	37	64	5,C,i,b
618137	Edge Green		48	48	49	48	49	52	79	5,A,i,b
618138	Horrocks Flash		46	45	45	46	45	48	75	4,A,i,b
618139	Pennington Flash		42	36	33	42	34	39	44	3,A,i,b
618140	Pennington Flash		40	<35	32	<40	33	38	43	3,C,i,b
618141	Abram Flashes SSSI		55	50	48	54	49	53	70	3,A,i,b
618142	Abram Flashes SSSI		<40	<35	<30	<40	<30	33	55	5,C,i,b
618143	Abram Flashes SSSI		<40	<35	32	<40	32	35	59	5,C,i,b
618144	Ponds near Lightshaw Lane		<40	<35	<30	<40	<30	34	56	5,C,i,b
618145	Lightshaw Lime Beds		<40	<35	32	<40	32	36	55	3,C,i,b
618146	Park Lane Colliery		<40	<35	34	<40	34	36	61	5,C,i,b

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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}	
618200	Wigshaw Lane, Culcheth		49	44	42	49	43	48	53	3,A,i,b
618201	Robins Lane, Culcheth		46	41	39	45	39	44	49	3,A,i,b
618209	Warrington Road, Risley		64	59	57	64	58	63	68	3,A,i,b
618210	Wigshaw Lane, Culcheth		68	64	61	68	62	67	72	3,A,i,b
618211	Stradbroke Close, Lowton		45	38	36	44	37	42	49	3,A,i,b
618212	Eldridge Court, Robson Way, Lowton		40	<35	32	<40	33	38	46	3,C,i,b
618221	Taylor Business Park (Lower Sensitivity Offices), Risley		<40	36	<30	<40	34	39	44	3,C,i,b
618222	Culcheth Linear Park, Culcheth		<40	<35	<30	<40	<30	35	50	3,C,i,b
618223	Culcheth Linear Park, Culcheth		43	38	36	42	36	41	47	3,A,i,b
618224	Bryne Marsh & Ince Moss SSSI		51	51	53	51	53	56	83	4,A,i,b
618225	Abram Flashes SSSI		<40	35	35	<40	35	36	62	5,C,i,b
618226	Abram Flashes SSSI		46	42	40	46	41	44	66	5,A,i,b
618230	Holcroft Grange Care Home, Jackson Avenue, Culcheth		43	38	36	43	37	42	48	3,A,i,b
618231	High Peak Care Home, Main Lane, Culcheth		42	37	35	42	36	41	56	3,A,i,b
618247	Warrington Road, Risley		63	58	56	63	57	62	67	3,A,i,b
618248	Warrington Road, Risley		61	56	54	61	54	59	64	3,A,i,b
618249	The Estate Office, Taylor Business Park, Risley		56	52	49	56	50	55	60	3,A,i,b
618251	Church Lane, Culcheth		<40	36	34	41	34	39	46	3,C,i,b

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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}	
618252	Warrington Road, Culcheth		62	57	55	62	56	61	66	3,A,i,b
618253	Warrington Road, Culcheth		47	42	40	47	41	46	51	3,A,i,b
618254	Pendle Gardens, Culcheth	ML712740	47	41	40	46	40	45	80	1,A,i,a
618255	Wigshaw Lane, Culcheth		42	38	35	42	36	41	48	3,A,i,b
618256	Kenyon Lane, Kenyon		64	59	56	64	58	63	68	3,A,i,b
618257	Moorfield Crescent, Lowton		43	37	35	43	35	40	49	3,A,i,b
618258	Newton Road, Lowton		62	55	53	62	53	58	63	3,A,i,b
618259	Wigan Road, Golborne		66	62	60	66	60	65	80	3,A,i,a
618260	Lily Lane, Bamfurlong		69	62	59	68	60	65	72	3,A,i,b
618261	Lily Lane, Bamfurlong		68	61	59	68	59	64	73	3,A,i,b
618263	Chatburn Court, Warrington Road, Culcheth and committed development (Map Book ref.: MA05/038)		66	61	59	66	60	65	70	3,A,i,b
618274	Wigshaw Lane, Culcheth		44	39	37	44	37	42	47	3,A,i,b
618278	Fishery, Wigshaw, Culcheth		63	58	56	63	57	62	67	3,A,i,b
618279	Fishery, Wigshaw, Culcheth		65	60	58	65	58	63	68	3,A,i,b
618280	Fishery, Wigshaw, Culcheth		52	47	45	52	45	50	55	3,A,i,b
618281	Fishery, Wigshaw, Culcheth		47	42	40	47	41	46	51	3,A,i,b
618282	Fishery, Wigshaw, Culcheth		46	42	39	46	40	45	50	3,A,i,b
618283	Fishery, Wigshaw, Culcheth		53	47	46	52	46	51	56	3,A,i,b
618284	Fishery, Wigshaw, Culcheth		51	46	44	51	45	50	55	3,A,i,b

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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 Directive⁸ and planning practice on noise⁹ 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: Risley to Bamfurlong (MA05), Section 13.

⁸ 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.

⁹ 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: Risley to Bamfurlong (MA05), 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.

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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 >55dB _{L_{pAeq}} at the façade.
L	Existing environment – low existing airborne ambient noise levels, day and evening ≤45dB, or night ≤35dB _{L_{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.

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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									
617649	Warrington Road, Risley	1.8	0.04/<0.8 ¹⁰	-/-	Site set up (vibratory roller)	A	4	R	T	-	O	D1	MA05-C-C1
617652	Yew Tree Court (Office), Taylor Business Park, Risley	0.5	0.12/0.36	-/-	GSM-R construction (vibratory roller)	NA	1	V3	T	-	-		
617695	Crossfield Avenue, Culcheth	0.2	0.04/0.20	-/-	Site set up (vibratory roller)	NA	4	R	T	-	-		
617699	Newchurch Lane, Culcheth	0.5	0.08/0.40	-/-	Site set up (vibratory roller)	A	14	R	T	-	O	D3	MA05-C-C3
617703	Wigshaw Lane, Culcheth	0.2	-/0.16	-/-	Ground stabilisation works (vibratory roller)	NA	4	R	T	-	-		
617706	Warrington Road, Culcheth	0.2	0.04/0.16	-/-	Site set up (vibratory roller)	NA	8	R	T	-	-		
617708	Wigshaw Lane, Culcheth	1.8	0.04/<0.8 ¹⁰	-/-	Site set up (vibratory roller)	A	4	R	T	-	O	D1	MA05-C-C2
617712	Robins Lane, Culcheth	0.2	0.08/0.16	-/-	Site set up (vibratory roller)	NA	1	R	T	-	-		
617713	Pendle Gardens, Culcheth	0.4	-/0.17	-/-	Finishing works (vibratory roller)	NA	5	R	T	-	-		

¹⁰ Construction methods will be selected to ensure that on a monthly basis the significant adverse effect level is not exceeded.

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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									
617721	Pendle Gardens, Culcheth	0.2	-/0.12	-/-	Finishing works (vibratory roller)	NA	2	R	T	-	-		
617725	Wigshaw Lane, Culcheth	0.2	-/0.12	-/-	Finishing works (vibratory roller)	NA	5	R	T	-	-		
617772	Wilton Lane, Culcheth	0.1	-/0.08	-/-	Finishing works (vibratory roller)	NA	6	R	T	-	-		
617786	Cedar Avenue, Lowton	0.2	0.04/0.12	-/-	Site set up (vibratory roller)	NA	30	R	T	-	-		
617791	Brancaster Drive, Lowton	0.5	0.08/0.15	-/-	Finishing works (vibratory roller)	NA	21	R	T	-	-		
617793	Brancaster Drive, Lowton	0.7	-/0.26	-/-	Finishing works (vibratory roller)	A	5	R	T	-	-	D1	~
617795	Lowton Junior & Infant School, Newton Road, Lowton	0.4	0.12/0.16	-/-	Site set up (vibratory roller)	NA	1	V3	T	-	-		
617798	Gymetc. (Lower Sensitivity Offices), Newton Road, Lowton	1	0.24/0.75	-/-	Site set up (vibratory roller)	A	1	V3	T	-	-	D <1	¹¹
617799	Newton Road, Lowton	0.3	0.08/0.24	-/-	Site set up (vibratory roller)	A	5	R	T	-	-	D <1	¹¹

¹¹ Impacts with durations of less than one month are not generally considered significant.

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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									
617800	Stradbroke Close, Lowton	0.4	-/0.28	-/-	Finishing works (vibratory roller)	A	14	R	T	-	-	D2	~
617801	Moorfield Crescent, Lowton	0.4	0.02/0.12	-/-	Finishing works (vibratory roller)	NA	44	R	T	-	-		
617804	Newton Road Childrens Home, Hesketh Meadow Lane, Lowton	0.3	0.04/0.20	-/-	Finishing works (vibratory roller)	NA	1	R	T	-	-		
617808	Hesketh Meadow Lane, Lowton	0.4	-/0.32	-/-	Site set up (vibratory roller)	A	13	R	T	-	O	D1	MA05-C-C4
617813	Newton Road, Lowton	0.2	0.04/0.12	-/-	Finishing works (vibratory roller)	NA	41	R	T	-	-		
617817	Newton Road, Lowton	0.3	0.04/0.16	-/-	Finishing works (vibratory roller)	NA	13	R	T	-	-		
617864	Slag Lane, Lowton	0.2	-/0.16	-/-	Site set up (vibratory roller)	NA	26	R	T	-	-		
617874	Slag Lane, Lowton	2	0.80/<0.8 ¹⁰	-/-	Finishing works (vibratory roller)	A	1	R	T	-	-	D <1	¹¹
617887	Saddle Tree Fold, Lowton	0.5	0.08/0.44	-/-	Site set up (vibratory roller)	A	4	R	T	-	O	D3	MA05-C-C5
617888	Slag Lane, Lowton	1.3	0.44/<0.8 ¹⁰	-/-	Road Embankment Works (vibratory roller)	A	2	R	T	-	O	D <1	¹¹
617895	Aye Bridge Road, Abram	0.2	0.04/0.20	-/-	Site set up (vibratory roller)	NA	1	R	T	-	-		

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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									
617905	Lily Lane, Bamfurlong	0.3	0.08/0.24	-/-	Site set up (vibratory roller)	A	3	R	T	-	O	D1	~
617909	Lily Lane, Bamfurlong	0.3	-/0.14	-/-	Ground stabilisation works (vibratory roller)	NA	104	R	T	-	-		
617910	Lily Lane, Bamfurlong	0.6	0.08/0.56	-/-	Site set up (vibratory roller)	A	1	R	T	-	O	D3	~
617916	Lily Lane, Bamfurlong	0.1	-/0.08	-/-	Ground stabilisation works (vibratory roller)	NA	12	R	T	-	-		
617953	Wigshaw Lane, Culcheth	1	-/0.52	-/-	Site set up (vibratory roller)	A	5	R	T	-	O	D1	~
617967	Stradbroke Close, Lowton	0.6	-/0.44	-/-	Finishing works (vibratory roller)	A	4	R	T	-	O	D1	MA05-C-C4
617978	Warrington Road, Risley	0.2	0.04/0.08	-/-	Finishing works (vibratory roller)	NA	2	R	T	-	-		
618015	Warrington Road, Risley	0.2	0.08/0.12	-/-	GSM-R construction (vibratory roller)	NA	1	R	T	-	-		
618035	Newchurch Old Rectory, Culcheth	0.4	-/0.16	-/-	Site set up (vibratory roller)	NA	1	R	T	-	-		
618080	Slag Lane, Lowton	0.2	0.04/0.12	-/-	Site set up (vibratory roller)	NA	2	R	T	-	-		
618081	Balmer's Farm, Wigan Road, Golborne	0.2	-/0.16	-/-	Site set up (vibratory roller)	NA	1	R	T	-	-		

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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									
618088	Hesketh Meadow Lane, Lowton	0.2	-/0.20	-/-	Site set up (vibratory roller)	NA	22	R	T	-	-		
618110	Taylor Business Park (Lower Sensitivity Offices), Risley	0.1	-/0.06	-/-	Site set up (vibratory roller)	NA	1	V3	T	-	-		
618200	Wigshaw Lane, Culcheth	2.0	0.04/<0.8 ¹⁰	-/-	Site set up (vibratory roller)	A	1	R	T	-	O	D1	MA05-C-C2
618201	Robins Lane, Culcheth	0.2	0.08/0.20	-/-	Site set up (vibratory roller)	NA	2	R	T	-	-		
618209	Warrington Road, Risley	2	0.04/<0.8 ¹⁰	-/-	Finishing works (vibratory roller)	A	2	R	T	-	O	D <1	¹¹
618210	Wigshaw Lane, Culcheth	2	0.04/<0.8 ¹⁰	-/-	Site set up (vibratory roller)	A	3	R	T	-	-	D1	MA05-C-C2
618211	Stradbroke Close, Lowton	0.7	0.02/0.24	-/-	Finishing works (vibratory roller)	A	4	R	T	-	-	D1	~
618221	Taylor Business Park (Lower Sensitivity Offices), Risley	0.5	-/0.16	-/-	Ground stabilisation works (vibratory roller)	NA	1	V3	T	-	-		
618247	Warrington Road, Risley	0.2	-/0.16	-/-	Site set up (vibratory roller)	NA	10	R	T	-	-		
618249	The Estate Office, Taylor Business Park, Risley	2	0.20/<0.8 ¹⁰	-/-	GSM-R construction (vibratory roller)	A	1	V3	T	-	O	D1	MA05-C-N2
618253	Warrington Road, Culcheth	0.2	0.04/0.16	-/-	Site set up (vibratory roller)	NA	20	R	T	-	-		

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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									
618254	Pendle Gardens, Culcheth	0.2	-/0.08	-/-	Finishing works (vibratory roller)	NA	17	R	T	-	-		
618257	Moorfield Crescent, Lowton	2	0.02/<0.8 ¹⁰	-/-	Finishing works (vibratory roller)	A	16	R	T	-	O	D2	MA05-C-C4
618258	Newton Road, Lowton	0.2	0.04/0.12	-/-	Site set up (vibratory roller)	NA	50	R	T	-	-		
618272	Robins Lane, Culcheth	0.3	0.12/0.20	-/-	Site set up (vibratory roller)	NA	1	R	T	-	-		
618273	Wigshaw Lane, Culcheth	0.4	-/0.16	-/-	Ground stabilisation works (vibratory roller)	NA	2	R	T	-			
618276	Wigshaw Lane, Culcheth	0.7	0.04/0.48	-/-	Finishing works (vibratory roller)	A	3	R	T	-	O	D <1	¹¹

Airborne sound: direct impacts and effects

- 4.2.7 Activities associated with the construction phases of the Proposed Scheme will generate airborne noise. The assessment of the likely impacts and significant effects as a result of the construction noise has considered the effects on:
- residential receptors, both as individual dwellings and communities; and
 - non-residential receptors, including quiet areas.
- 4.2.8 For each type of receptor, the typical and highest monthly $L_{Aeq,T}$ noise levels from construction activities have been calculated at the façade of all assessment locations. This is subject to the screening distances identified and based upon supplied plant information from engineers.
- 4.2.9 The results, impact criteria and significance criteria for the assessment of the Proposed Scheme at residential and non-residential receptors are presented in Table 5 and Table 6 respectively. Explanation of the information within Table 5 and Table 6 is provided in Volume 5, Appendix SV-001-00000, with the additional notes presented in Table 3.

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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												
617637	School Lane, Risley	50/53[A]	-/[A]	-/[A]	Day: General site works	NA	2	R	T	-	-	-	-	-		
617643	Inglewood Close, Birchwood	47/51[A]	-/[A]	-/[B]	Day: Viaduct construction	NA	25	R	T	-	-	-	-	-		
617647	Risley Remand Centre East, Warrington Road, Risley	54/61[A]	-/[A]	-/[B]	Day: Overbridge construction	NA	1	R	T	-	-	-	-	-		
617648	Clare's Farm, Warrington Road, Risley	50/54[A]	-/[A]	-/[C]	Day: Highway works	NA	1	R	T	-	-	-	-	-		
617649	Warrington Road, Risley	70/77[B]	39/41[C]	39/41[C]	Day: Overbridge construction Evening: Overbridge construction Night: Overbridge construction	S	4	R	T	H	-	D4	V	NI	MA05-C-C1	
617650	Hole Mill Farm, Holcroft Lane, Culcheth	50/53[B]	-/[C]	-/[C]	Day: Underbridge construction	NA	1	R	T	H	-	-	-	-		
617655	New Hall Farm, Severn Road, Culcheth	53/59[A]	-/[A]	-/[A]	Day: Earthworks	NA	1	R	T	-	-	-	-	-		

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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											
617657	Holcroft Lane, Culcheth	52/56[A]	-/[A]	-/[A]	Day: Pond construction	NA	14	R	T	-	-	-	-	-	
617658	Mustard Lane, Croft	50/54[A]	-/[A]	-/[B]	Day: Pond construction	NA	12	R	T	-	-	-	-	-	
617659	Mustard Lane, Croft	51/55[A]	-/[A]	-/[B]	Day: Pond construction	NA	5	R	T	-	-	-	-	-	
617661	Howard Road, Culcheth	52/58[A]	-/[A]	-/[B]	Day: Earthworks	NA	34	R	T	-	-	-	-	-	
617662	Howard Road, Culcheth	47/53[A]	-/[A]	-/[B]	Day: Earthworks	NA	31	R	T	-	-	-	-	-	
617663	Howard Road, Culcheth	50/55[A]	-/[A]	-/[B]	Day: Earthworks	NA	26	R	T	-	-	-	-	-	
617666	Severn Road, Culcheth	51/56[A]	-/[A]	-/[B]	Day: Pond construction	NA	26	R	T	-	-	-	-	-	
617672	Severn Road, Culcheth	49/54[A]	-/[A]	-/[B]	Day: Pond construction	NA	20	R	T	-	-	-	-	-	
617674	Severn Road, Culcheth	48/52[A]	-/[A]	-/[B]	Day: Earthworks	NA	29	R	T	-	-	-	-	-	
617675	Howard Road, Culcheth	45/50[A]	-/[A]	-/[B]	Day: Earthworks	NA	58	R	T	-	-	-	-	-	
617676	Severn Road, Culcheth	47/53[A]	-/[A]	-/[A]	Day: Earthworks	NA	24	R	T	-	-	-	-	-	
617680	Severn Road, Culcheth	50/54[A]	-/[A]	-/[B]	Day: Pond construction	NA	35	R	T	-	-	-	-	-	

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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											
617682	Downham Avenue, Culcheth	46/52[A]	-/[A]	-/[A]	Day: Earthworks	NA	40	R	T	-	-	-	-	-	
617686	Crossfield Avenue, Culcheth	59/63[A]	-/[A]	-/[A]	Day: General site works	NA	40	R	T	-	-	-	-	-	
617689	Medway Road, Culcheth	49/55[A]	-/[A]	-/[B]	Day: Pond construction	NA	26	R	T	-	-	-	-	-	
617692	Ratcliffe House Farm, Medway Road, Culcheth	49/55[A]	-/[A]	-/[A]	Day: Pond construction	NA	1	R	T	-	-	-	-	-	
617695	Crossfield Avenue, Culcheth	61/66[A]	-/[A]	-/[A]	Day: General site works	A	4	R	T	-	-	D5	-	-	MA05-C-C3
617699	Newchurch Lane, Culcheth	65/70[A]	-/32[A]	-/32[B]	Day: General site works Evening: Overbridge construction Night: Overbridge construction	A	14	R	T	-	-	D14	V	-	MA05-C-C3
617702	Crossfield Avenue, Culcheth	53/57[A]	-/[A]	-/[A]	Day: General site works	NA	16	R	T	-	-	-	-	-	
617703	Wigshaw Lane, Culcheth	59/65[A]	-/[C]	-/[C]	Day: Earthworks	A	4	R	T	H	-	-	-	-	

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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											
617706	Warrington Road, Culcheth	61/67[B]	-/30[C]	-/30[C]	Day: Pond construction Evening: Overbridge construction Night: Overbridge construction	NA	8	R	T	H	-	-	-	-	
617708	Wigshaw Lane, Culcheth	68/74[A]	39/39[A]	39/39[C]	Day: Overbridge construction Evening: Overbridge construction Night: Overbridge construction	A	4	R	T	-	-	D11	V	-	MA05-C-C2
617712	Robins Lane, Culcheth	59/65[A]	-/-[A]	-/-[B]	Day: Earthworks	A	1	R	T	-	-	-	-	-	
617713	Pendle Gardens, Culcheth	67/72[A]	35/36[A]	35/36[A]	Day: Overbridge construction Evening: Overbridge construction Night: Overbridge construction	A	5	R	T	-	-	D10	-	-	MA05-C-C3
617717	Blakeley Farm, Wigshaw Lane, Culcheth	58/64[A]	-/-[A]	-/-[A]	Day: Overbridge construction	NA	1	R	T	-	-	-	-	-	

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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											
617718	Glebeland, Culcheth	60/66[A]	-/[A]	-/[B]	Day: Pond construction	A	11	R	T	-	-	D3	-	-	MA05-C-C3
617719	Pendle Gardens, Culcheth	59/64[A]	-/[A]	-/[B]	Day: Overbridge construction	NA	12	R	T	-	-	-	-	-	
617720	Pendle Gardens, Culcheth	56/61[A]	-/[A]	-/[B]	Day: Overbridge construction	NA	4	R	T	-	-	-	-	-	
617721	Pendle Gardens, Culcheth	59/64[A]	-/[A]	-/[C]	Day: Overbridge construction	NA	2	R	T	-	-	-	-	-	
617723	Pendle Gardens, Culcheth	50/56[A]	-/[B]	-/[C]	Day: Pond construction	NA	33	R	T	-	-	-	-	-	
617724	Pendle Gardens, Culcheth	48/52[A]	-/[A]	-/[B]	Day: Overbridge construction	NA	88	R	T	-	-	-	-	-	
617725	Wigshaw Lane, Culcheth	59/64[A]	-/30[B]	-/30[C]	Day: Overbridge construction Evening: Overbridge construction Night: Overbridge construction	NA	5	R	T	H	-	-	-	-	
617730	Wigshaw Lane, Culcheth	53/59[B]	-/[C]	-/[C]	Day: Overbridge construction	NA	8	R	T	H	-	-	-	-	
617742	Rilston Avenue, Culcheth	53/57[A]	-/[A]	-/[A]	Day: Pond construction	NA	62	R	T	-	-	-	-	-	
617746	Clifton Avenue, Culcheth	51/56[A]	-/[A]	-/[A]	Day: Pond construction	NA	26	R	T	-	-	-	-	-	

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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											
617748	Brookfield Road, Culcheth	52/57[A]	-/[A]	-/[A]	Day: Overbridge construction	NA	17	R	T	-	-	-	-	-	
617751	Brookfield Road, Culcheth	51/55[A]	-/[A]	-/[A]	Day: Overbridge construction	NA	40	R	T	-	-	-	-	-	
617754	Kenyon Lane, Kenyon	49/53[A]	-/[A]	-/[C]	Day: General site works	NA	17	R	T	-	-	-	-	-	
617755	Brookfield Road, Culcheth	54/58[A]	-/[A]	-/[A]	Day: Overbridge construction	NA	10	R	T	-	-	-	-	-	
617757	Brookfield Road, Culcheth	52/56[A]	-/[A]	-/[A]	Day: Overbridge construction	NA	21	R	T	-	-	-	-	-	
617760	Beechwood Lane, Culcheth	49/52[A]	-/[A]	-/[A]	Day: Pond construction	NA	17	R	T	-	-	-	-	-	
617764	Common Lane, Culcheth	50/54[A]	-/[B]	-/[C]	Day: General site works	NA	4	R	T	-	-	-	-	-	
617767	Broseley Lane, Kenyon	51/55[B]	-/[C]	-/[C]	Day: Pond construction	NA	38	R	T	H	-	-	-	-	
617768	Broseley Lane, Kenyon	51/55[B]	-/[C]	-/[C]	Day: Pond construction	NA	6	R	T	H	-	-	-	-	
617769	Kenyon Lane, Kenyon	61/66[A]	-/[A]	-/[C]	Day: General site works	A	2	R	T	-	-	D2	-	-	~
617771	Broseley Lane, Kenyon	50/53[A]	-/[A]	-/[C]	Day: Culvert construction	NA	10	R	T	-	-	-	-	-	
617772	Wilton Lane, Culcheth	53/59[A]	-/[C]	-/[C]	Day: Pond construction	NA	6	R	T	H	-	-	-	-	

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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											
617773	Kenyon Lane, Lowton	54/58[A]	-/[A]	-/[A]	Day: General site works	NA	25	R	T	-	-	-	-	-	
617774	Clough Farm, Wilton Lane, Culcheth	63/68[A]	-/[A]	-/[C]	Day: Pond construction	A	1	R	T	-	-	D8	-	-	~
617775	Laylands Farm, Broseley Lane, Culcheth	52/56[A]	-/[C]	-/[C]	Day: Pond construction	NA	3	R	T	H	-	-	-	-	
617776	Newton Road, Lowton and committed development (Map Book ref.: MA05/287)	52/55[A]	-/[A]	-/[C]	Day: General site works	NA	26	R	T	-	-	-	-	-	
617777	East Lancashire Road, Lowton	51/54[C]	-/[C]	-/[C]	Day: Overbridge construction	NA	24	R	T	H	-	-	-	-	
617778	East Lancashire Road, Lowton	50/54[C]	-/[C]	-/[C]	Day: Overbridge construction	NA	24	R	T	H	-	-	-	-	
617779	Newton Road, Lowton	48/51[C]	-/[C]	-/[C]	Day: General site works	NA	23	R	T	H	-	-	-	-	
617783	Rowan Avenue, Lowton	56/59[A]	-/[B]	-/[C]	Day: General site works	NA	138	R	T	-	-	-	-	-	
617784	Maple Avenue, Lowton	57/62[A]	-/[A]	-/[C]	Day: General site works	NA	18	R	T	-	-	-	-	-	
617785	Rowan Avenue, Lowton	49/52[A]	-/[A]	-/[A]	Day: General site works	NA	31	R	T	-	-	-	-	-	
617786	Cedar Avenue, Lowton	61/64[A]	-/[A]	-/[B]	Day: General site works	NA	30	R	T	-	-	-	-	-	

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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											
617788	Kings Avenue, Lowton	53/56[A]	-/[A]	-/[A]	Day: Culvert construction	NA	47	R	T	-	-	-	-	-	
617789	Beech Avenue, Lowton	51/55[A]	-/[A]	-/[A]	Day: Overbridge construction	NA	71	R	T	-	-	-	-	-	
617790	Cedar Avenue, Lowton	57/62[A]	-/[A]	-/[B]	Day: Overbridge construction	NA	41	R	T	-	-	-	-	-	
617791	Brancaster Drive, Lowton	62/69[A]	-/[A]	-/[A]	Day: Pond construction	A	21	R	T	-	-	D6	-	-	MA05-C-C4
617793	Brancaster Drive, Lowton	55/59[A]	-/[A]	-/[A]	Day: Overbridge construction	NA	5	R	T	-	-	-	V	-	
617799	Newton Road, Lowton	64/69[B]	32/34[C]	32/34[C]	Day: Overbridge construction Evening: Overbridge construction Night: Overbridge construction	NA	5	R	T	H	-	-	-	-	
617800	Stradbroke Close, Lowton	57/62[A]	-/[A]	-/[A]	Day: Earthworks	NA	14	R	T	-	-	-	V	-	
617801	Moorfield Crescent, Lowton	53/59[A]	-/[A]	-/[A]	Day: Pond construction	NA	44	R	T	-	-	-	-	-	
617802	Planewood Gardens, Lowton	56/60[A]	-/[A]	-/[B]	Day: Overbridge construction	NA	41	R	T	-	-	-	-	-	
617803	Elm Tree Road, Lowton	49/52[A]	-/[A]	-/[A]	Day: Earthworks	NA	61	R	T	-	-	-	-	-	

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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											
617804	Newton Road Children's Home, Hesketh Meadow Lane, Lowton	66/72[A]	35/37[B]	35/37[C]	Day: Overbridge construction Evening: Overbridge construction Night: Overbridge construction	A	1	R	T	-	-	D20	-	-	MA05-C-C4
617805	Pocket Nook Lane, Lowton	54/57[A]	-/[A]	-/[A]	Day: Earthworks	NA	7	R	T	-	-	-	-	-	
617808	Hesketh Meadow Lane, Lowton	65/71[A]	-/31[A]	-/31[A]	Day: Earthworks Evening: Overbridge construction Night: Overbridge construction	A	13	R	T	-	-	D10	V	-	MA05-C-C4
617809	Oaklands Road, Lowton	53/57[A]	-/[A]	-/[A]	Day: Earthworks	NA	34	R	T	-	-	-	-	-	
617811	Alder Road, Lowton	50/53[A]	-/[A]	-/[A]	Day: Earthworks	NA	41	R	T	-	-	-	-	-	
617812	Cherry Tree Road, Lowton	48/51[A]	-/[A]	-/[A]	Day: Earthworks	NA	61	R	T	-	-	-	-	-	
617813	Newton Road, Lowton	61/67[B]	-/30[C]	-/30[C]	Day: Earthworks Evening: Overbridge construction	A	41	R	T	H	-	-	-	-	

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Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
					Night: Overbridge construction										
617815	Waddington Close, Lowton	50/54[A]	-/[A]	-/[A]	Day: Earthworks	NA	49	R	T	-	-	-	-	-	
617816	Morgans Way, Lowton and committed development (Map Book ref.: MA05/088)	51/54[A]	-/[A]	-/[A]	Day: Earthworks	NA	91	R	T	-	-	-	-	-	
617817	Newton Road, Lowton	63/69[A]	-/30[A]	-/30[C]	Day: Earthworks Evening: Overbridge construction Night: Overbridge construction	A	13	R	T	-	-	D5	-	-	MA05-C-C4
617819	Waddington Close, Lowton	56/62[A]	-/[A]	-/[A]	Day: Earthworks	NA	23	R	T	-	-	-	-	-	
617821	Barford Drive, Lowton	48/51[A]	-/[A]	-/[A]	Day: Earthworks	NA	23	R	T	-	-	-	-	-	
617822	Newton Road, Lowton	56/62[A]	-/[A]	-/[A]	Day: Earthworks	NA	25	R	T	-	-	-	-	-	
617824	Edgerton Road	46/52[A]	-/[A]	-/[A]	Day: Earthworks	NA	202	R	T	-	-	-	-	-	
617826	Barford Drive, Lowton	48/51[A]	-/[A]	-/[A]	Day: Earthworks	NA	9	R	T	-	-	-	-	-	
617828	Horncastle Close, Lowton	54/58[A]	-/[A]	-/[A]	Day: Pond construction	NA	89	R	T	-	-	-	-	-	

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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											
617829	Cheetham Fold, Lowton	59/65[A]	-/[A]	-/[A]	Day: Earthworks	NA	1	R	T	-	-	-	-	-	
617830	Lane Head Avenue, Lowton	47/51[A]	-/[A]	-/[A]	Day: Earthworks	NA	13	R	T	-	-	-	-	-	
617831	Tyrer Walk, Lowton	54/59[A]	-/[A]	-/[A]	Day: Earthworks	NA	34	R	T	-	-	-	-	-	
617833	Newton Road, Lowton	51/56[A]	-/[A]	-/[C]	Day: Pond construction	NA	12	R	T	-	-	-	-	-	
617834	Horncastle Close, Lowton	58/64[A]	-/[A]	-/[A]	Day: Earthworks	NA	13	R	T	-	-	-	-	-	
617835	Silsden Avenue, Lowton	49/52[A]	-/[A]	-/[C]	Day: Movement of excavated material ADT	NA	294	R	T	-	-	-	-	-	
617836	Alfred Road, Lowton	46/50[A]	-/[A]	-/[B]	Day: Earthworks	NA	35	R	T	-	-	-	-	-	
617837	Newton Road, Lowton	46/50[A]	-/[A]	-/[B]	Day: Pond construction	NA	1	R	T	-	-	-	-	-	
617838	Alfred Road, Lowton	49/54[A]	-/[A]	-/[A]	Day: Earthworks	NA	26	R	T	-	-	-	-	-	
617841	The Pipers, Lowton	55/60[A]	-/[A]	-/[A]	Day: Earthworks	NA	11	R	T	-	-	-	-	-	
617842	St Nicholas Road, Lowton	48/52[A]	-/[A]	-/[A]	Day: Movement of excavated material ADT	NA	66	R	T	-	-	-	-	-	
617843	Bodden Street, Lowton	56/62[A]	-/[A]	-/[A]	Day: Earthworks	NA	22	R	T	-	-	-	-	-	

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		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
617844	Brook Lynn Avenue, Lowton	54/59[A]	-/[A]	-/[A]	Day: Earthworks	NA	71	R	T	-	-	-	-	-	
617845	Bodden Street, Lowton	52/58[A]	-/[A]	-/[A]	Day: Pond construction	NA	25	R	T	-	-	-	-	-	
617847	Stone Pit Close, Lowton	57/61[A]	-/[A]	-/[A]	Day: Earthworks	NA	11	R	T	-	-	-	-	-	
617849	Stone Pit Close, Lowton	55/60[A]	-/[A]	-/[A]	Day: Pond construction	NA	15	R	T	-	-	-	-	-	
617850	Holtswell Close, Lowton	51/55[A]	-/[A]	-/[A]	Day: Earthworks	NA	43	R	T	-	-	-	-	-	
617851	Green House Close, Lowton	46/50[A]	-/[A]	-/[A]	Day: Earthworks	NA	55	R	T	-	-	-	-	-	
617852	Sandy Lane, Lowton	50/56[C]	-/[C]	-/[C]	Day: Earthworks	NA	33	R	T	H	-	-	-	-	
617853	Linbeck Grove, Lowton	57/62[A]	-/[A]	-/[A]	Day: Highway works	NA	36	R	T	-	-	-	-	-	
617854	Ryecroft Avenue, Lowton	51/56[A]	-/[A]	-/[A]	Day: Pond construction	NA	24	R	T	-	-	-	-	-	
617857	Warren's Croft Farm, Garton Common, Lowton	64/70[A]	-/31[A]	-/31[A]	Day: Highway works Evening: Highway works Night: Highway works	A	1	R	T	-	-	D4	-	-	~

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		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
617859	Slag Lane, Lowton	53/58[B]	-/[C]	-/[C]	Day: Pond construction	NA	30	R	T	H	-	-	-	-	
617860	Slag Lane, Lowton	48/53[A]	-/[A]	-/[B]	Day: Pond construction	NA	10	R	T	-	-	-	-	-	
617861	Garton Common, Lowton	62/69[A]	-/31[A]	-/31[A]	Day: Highway works Evening: Highway works Night: Highway works	A	1	R	T	-	-	D4	-	-	~
617862	Belmont Avenue, Golborne	42/46[A]	-/[A]	-/[B]	Day: Earthworks	NA	42	R	T	-	-	-	-	-	
617864	Slag Lane, Lowton	56/62[C]	-/[C]	-/[C]	Day: Viaduct construction	NA	26	R	T	H	-	-	-	-	
617865	Marmion Close, Lowton	49/54[A]	-/[A]	-/[A]	Day: Pond construction	NA	25	R	T	-	-	-	-	-	
617868	Scott Road, Lowton	43/47[A]	-/[A]	-/[A]	Day: Earthworks	NA	12	R	T	-	-	-	-	-	
617870	Scott Road, Lowton	52/57[A]	-/[A]	-/[A]	Day: Underbridge construction	NA	8	R	T	-	-	-	-	-	
617872	Rothwell Road, Golborne	47/50[A]	-/[A]	-/[B]	Day: Earthworks	NA	30	R	T	-	-	-	-	-	
617873	Apple Dell Avenue, Golborne	48/52[A]	-/[A]	-/[A]	Day: Earthworks	NA	86	R	T	-	-	-	-	-	

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		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
617874	Slag Lane, Lowton	72/75[C]	34/36[C]	34/36[C]	Day: Viaduct construction Evening: Viaduct construction Night: Viaduct construction	NA	1	R	T	H	-	-	-	-	
617876	Scott Road, Lowton	48/53[A]	-/-[A]	-/-[A]	Day: Underbridge construction	NA	28	R	T	-	-	-	-	-	
617878	Scott Road, Lowton	52/57[A]	-/-[A]	-/-[A]	Day: Underbridge construction	NA	21	R	T	-	-	-	-	-	
617880	Pendle Road, Golborne	49/53[A]	-/-[A]	-/-[A]	Day: Earthworks	NA	43	R	T	-	-	-	-	-	
617881	Lowton Road, Golborne	50/54[A]	-/-[A]	-/-[A]	Day: Earthworks	NA	2	R	T	-	-	-	-	-	
617883	Haddon Road, Lowton	49/53[A]	-/-[A]	-/-[A]	Day: Earthworks	NA	8	R	T	-	-	-	-	-	
617884	Haddon Road, Lowton	49/53[A]	-/-[A]	-/-[A]	Day: Culvert construction	NA	32	R	T	-	-	-	-	-	
617885	Haddon Road, Lowton	52/57[A]	-/-[A]	-/-[A]	Day: Underbridge construction	NA	15	R	T	-	-	-	-	-	
617886	Ashton Road, Golborne	46/51[C]	-/-[C]	-/-[C]	Day: Highway works	NA	19	R	T	H	-	-	-	-	

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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											
617887	Saddle Tree Fold, Lowton	64/69[A]	-/30[A]	-/30[A]	Day: General site works Evening: General site works Night: General site works	A	4	R	T	-	-	D6	V	-	MA05-C-C5
617888	Slag Lane, Lowton	71/76[A]	38/38[A]	38/38[B]	Day: Underbridge construction Evening: Underbridge construction Night: Underbridge construction	S	2	R	T	-	-	D17		NI	MA05-C-C5
617889	Wigan Road, Golborne	55/62[A]	-/[B]	-/[C]	Day: Highway works	NA	6	R	T	-	-	-	-	-	
617890	Slag Lane, Lowton	51/56[A]	-/[A]	-/[A]	Day: Pond construction	NA	2	R	T	-	-	-	-	-	
617891	Lightshaw Lane, Golborne	56/61[A]	-/[A]	-/[A]	Day: Earthworks	NA	3	R	T	-	-	-	-	-	
617892	Wigan Road, Golborne	54/60[A]	-/[A]	-/[B]	Day: Highway works	NA	3	R	T	-	-	-	-	-	
617894	Locker Lane, Ashton-in-Makerfield	52/55[A]	-/[A]	-/[B]	Day: Viaduct construction	NA	8	R	T	-	-	-	-	-	

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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											
617895	Aye Bridge Road, Abram	65/68[A]	-/30[A]	-/30[C]	Day: General site works Evening: Culvert construction Night: Culvert construction	A	1	R	T	-	-	D15	-	-	~
617896	Riding Lane, Ashton-in-Makerfield	48/52[A]	-/[B]	-/[C]	Day: Earthworks	NA	29	R	T	H	-	-	-	-	
617897	Crankwood Road, Abram	57/62[A]	-/[A]	-/[B]	Day: Overbridge construction	NA	59	R	T	-	-	-	-	-	
617898	Warrington Road, Abram	60/65[A]	-/[B]	-/[C]	Day: Overbridge construction	NA	1	R	T	-	-	-	-	-	
617899	Warrington Road, Abram	49/52[C]	-/[C]	-/[C]	Day: Overbridge construction	NA	182	R	T	H	-	-	-	-	
617900	Crown Wood Court, Bamfurlong	51/57[A]	-/[A]	-/[B]	Day: Earthworks	NA	103	R	T	-	-	-	-	-	
617901	Kinterbury Street, Bamfurlong	54/59[A]	-/[A]	-/[B]	Day: Earthworks	NA	16	R	T	-	-	-	-	-	
617903	Lily Lane, Bamfurlong	48/53[C]	-/[C]	-/[C]	Day: Retaining walls construction	NA	84	R	T	H	-	-	-	-	
617905	Lily Lane, Bamfurlong	64/69[A]	-/31[C]	-/31[C]	Day: Auto transformer station GSM-R civil works Evening:	A	3	R	T	H	-	D14	V	-	~

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		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
					Earthworks Night: Earthworks										
617906	Lily Lane, Bamfurlong	56/60[A]	-/[A]	-/[C]	Day: Earthworks	NA	18	R	T	-	-	-	-	-	
617908	Warrington Road, Abram	54/60[A]	-/[A]	-/[C]	Day: Highway works	NA	103	R	T	-	-	-	-	-	
617909	Lily Lane, Bamfurlong	60/65[C]	-/[C]	-/[C]	Day: Earthworks	NA	104	R	T	H	-	-	-	-	
617910	Lily Lane, Bamfurlong	63/69[A]	-/31[A]	-/31[C]	Day: General site works Evening: General site works Night: General site works	A	1	R	T	-	-	D7	V	-	~
617913	Warrington Road, Abram	54/61[A]	-/[A]	-/[B]	Day: Highway works	NA	19	R	T	-	-	-	-	-	
617914	Dorothy Walk, Bamfurlong	57/62[B]	-/[C]	-/[C]	Day: Auto transformer station GSM-R civil works	NA	20	R	T	H	-	-	-	-	
617915	Winstanley Road, Bamfurlong	49/54[A]	-/[A]	-/[B]	Day: Highway works	NA	13	R	T	-	-	-	-	-	
617916	Lily Lane, Bamfurlong	52/59[C]	-/[C]	-/[C]	Day: Highway works	NA	12	R	T	H	-	-	-	-	

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		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
617918	Winstanley Road, Bamfurlong	52/58[B]	-/[C]	-/[C]	Day: Auto transformer station GSM-R civil works	NA	3	R	T	H	-	-	-	-	
617919	Bodmin Drive, Platt Bridge	51/58[A]	-/[B]	-/[C]	Day: Highway works	NA	16	R	T	-	-	-	-	-	
617920	Portland Close, Platt Bridge	45/52[A]	-/[B]	-/[C]	Day: Highway works	NA	48	R	T	-	-	-	-	-	
617921	Stratton Drive, Platt Bridge	46/54[A]	-/[C]	-/[C]	Day: Highway works	NA	46	R	T	H	-	-	-	-	
617923	Warrington Road, Abram	49/56[A]	-/[A]	-/[B]	Day: Highway works	NA	4	R	T	-	-	-	-	-	
617924	Tram Street, Platt Bridge	47/53[A]	-/[B]	-/[C]	Day: Highway works	NA	137	R	T	-	-	-	-	-	
617950	Emerald Drive, Croft	50/54[A]	-/[A]	-/[A]	Day: Pond construction	NA	28	R	T	-	-	-	-	-	
617951	Mustard Lane, Croft	43/48[A]	-/[B]	-/[C]	Day: Earthworks	NA	6	R	T	-	-	-	-	-	
617952	Heath Lane, Croft	46/50[A]	-/[A]	-/[A]	Day: Pond construction	NA	1	R	T	-	-	-	-	-	

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		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
617953	Wigshaw Lane, Culcheth	68/73[B]	35/38[C]	35/38[C]	Day: Overbridge construction Evening: Overbridge construction Night: Overbridge construction	A	5	R	T	H	-	D2	V	-	~
617954	Kenyon Farm, Heath Lane, Croft	48/51[A]	-/[A]	-/[A]	Day: Overbridge construction	NA	1	R	T	-	-	-	-	-	
617955	Hill Top Farm, Heath Lane, Croft	50/54[A]	-/[A]	-/[A]	Day: Overbridge construction	NA	1	R	T	-	-	-	-	-	
617956	Sandy Lane, Lowton	55/59[A]	-/[A]	-/[A]	Day: Earthworks	NA	16	R	T	-	-	-	-	-	
617957	Sandy Lane, Lowton	49/53[A]	-/[A]	-/[A]	Day: Earthworks	NA	4	R	T	-	-	-	-	-	
617958	Sandy Lane, Lowton	54/59[A]	-/[B]	-/[C]	Day: Pond construction	NA	3	R	T	-	-	-	-	-	
617959	Belle Vue, Lowton	57/60[A]	-/[A]	-/[A]	Day: General site works	NA	4	R	T	-	-	-	-	-	
617960	Slag Lane, Lowton	61/67[A]	-/[B]	-/[C]	Day: Pond construction	A	1	R	T	-	-	D2	-	-	MA05-C-C5
617961	Green Lane, Lowton	48/51[A]	-/[A]	-/[A]	Day: General site works	NA	6	R	T	-	-	-	-	-	
617962	Byrom Lane, Lowton	54/57[A]	-/[A]	-/[B]	Day: General site works	NA	11	R	T	-	-	-	-	-	

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		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
617963	Byrom Lane, Lowton	53/58[A]	-/[A]	-/[A]	Day: General site works	NA	1	R	T	-	-	-	-	-	
617967	Stradbroke Close, Lowton	63/68[A]	-/30[A]	-/30[A]	Day: Earthworks Evening: Overbridge construction Night: Overbridge construction	A	4	R	T	-	-	D7	V	-	MA05-C-C4
617968	Warrington Road, Abram	39/44[A]	-/[A]	-/[A]	Day: Highway works	NA	35	R	T	-	-	-	-	-	
617969	Warrington Road, Abram	52/59[A]	-/[A]	-/[B]	Day: Highway works	NA	58	R	T	-	-	-	-	-	
617970	Portland Close, Platt Bridge	49/58[A]	-/[B]	-/[C]	Day: Highway works	NA	19	R	T	-	-	-	-	-	
617971	Lily Lane, Bamfurlong	56/61[A]	-/[A]	-/[B]	Day: Highway works	NA	53	R	T	-	-	-	-	-	
617973	Epsom Drive, Bamfurlong	57/62[A]	-/[A]	-/[C]	Day: Highway works	NA	12	R	T	-	-	-	-	-	
617977	Porlock Close, Platt Bridge	43/48[A]	-/[A]	-/[B]	Day: Highway works	NA	230	R	T	-	-	-	-	-	
617978	Warrington Road, Risley	57/63[A]	-/[A]	-/[A]	Day: Overbridge construction	NA	2	R	T	-	-	-	-	-	
617983	Thrilmere Avenue, Abram	44/49[A]	-/[A]	-/[A]	Day: Highway works	NA	314	R	T	-	-	-	-	-	

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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											
617984	Warrington Road, Abram	54/59[A]	-/[A]	-/[C]	Day: Pond construction	NA	25	R	T	-	-	-	-	-	
617986	Warrington Road, Abram	52/57[A]	-/[A]	-/[A]	Day: Earthworks	NA	25	R	T	-	-	-	-	-	
617987	Warrington Road, Abram	56/61[A]	-/[A]	-/[B]	Day: Earthworks	NA	21	R	T	-	-	-	-	-	
617990	Kaye Avenue, Culcheth	50/54[A]	-/[A]	-/[A]	Day: Pond construction	NA	162	R	T	-	-	-	-	-	
617991	Warrington Road, Culcheth	42/46[C]	-/[C]	-/[C]	Day: Pond construction	NA	2	R	T	H	-	-	-	-	
617992	Chatburn Court, Warrington Road, Culcheth	54/60[B]	-/[C]	-/[C]	Day: Pond construction	NA	17	R	T	H	-	-	-	-	
617997	Ridgeway, Lowton	47/51[A]	-/[A]	-/[A]	Day: Earthworks	NA	351	R	T	-	-	-	-	-	
617999	Ullswater Road, Golborne	47/51[A]	-/[A]	-/[A]	Day: Pond construction	NA	1	R	T	-	-	-	-	-	
618003	Stonechat Close, Lowton	47/50[A]	-/[A]	-/[A]	Day: Highway works	NA	240	R	T	-	-	-	-	-	
618004	Redmain Grove, Lowton	47/52[A]	-/[A]	-/[A]	Day: Pond construction	NA	281	R	T	-	-	-	-	-	
618013	Warrington Road, Abram	57/61[A]	-/[A]	-/[C]	Day: Pond construction	NA	29	R	T	-	-	-	-	-	

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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											
618015	Warrington Road, Risley	68/72[A]	-/33[B]	-/33[C]	Day: Highway works Evening: Highway works Night: Highway works	A	1	R	T	H	-	D14	-	-	~
618016	Fieldfare Close, Lowton	45/49[A]	-/[A]	-/[A]	Day: Pond construction	NA	131	R	T	-	-	-	-	-	
618017	Sundial House, Warrington Road, Culcheth	47/52[A]	-/[A]	-/[B]	Day: Pond construction	NA	1	R	T	-	-	-	-	-	
618035	Newchurch Old Rectory, Culcheth	62/66[A]	-/30[B]	-/30[C]	Day: Overbridge construction Evening: Overbridge construction Night: Overbridge construction	A	1	R	T	H	-	D1	-	-	~
618067	Rockingham Close, Birchwood	53/56[A]	-/[A]	-/[B]	Day: General site works	NA	97	R	T	-	-	-	-	-	
618068	Rowan Avenue, Lowton	55/58[C]	-/[C]	-/[C]	Day: General site works	NA	35	R	T	H	-	-	-	-	
618069	Abbotsford Close, Lowton	48/53[A]	-/[A]	-/[A]	Day: Pond construction	NA	217	R	T	-	-	-	-	-	

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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											
618070	Burley Avenue, Lowton	47/52[A]	-/[A]	-/[A]	Day: Pond construction	NA	64	R	T	-	-	-	-	-	
618071	Lowton Road, Golborne	46/49[B]	-/[B]	-/[C]	Day: Earthworks	NA	38	R	T	H	-	-	-	-	
618072	Warrington Road, Abram	50/56[A]	-/[A]	-/[B]	Day: Highway works	NA	64	R	T	-	-	-	-	-	
618073	Warrington Road, Abram	44/51[A]	-/[A]	-/[B]	Day: Highway works	NA	49	R	T	-	-	-	-	-	
618074	Finchdale Gardens, Lowton	50/54[A]	-/[A]	-/[A]	Day: Earthworks	NA	196	R	T	-	-	-	-	-	
618075	The Limes, Culcheth	46/50[A]	-/[A]	-/[A]	Day: Pond construction	NA	99	R	T	-	-	-	-	-	
618076	Ellesmere Road, Culcheth	42/46[A]	-/[A]	-/[B]	Day: Pond construction	NA	77	R	T	-	-	-	-	-	
618080	Slag Lane, Lowton	61/66[A]	-/[B]	-/[C]	Day: Underbridge construction	A	2	R	T	-	-	D2	-	-	MA05-C-C5
618081	Balmer's Farm, Wigan Road, Golborne	61/65[A]	-/[B]	-/[C]	Day: Highway works	NA	1	R	T	-	-	-	-	-	
618082	Warrington Road, Abram	57/60[A]	-/[B]	-/[C]	Day: Overbridge construction	NA	11	R	T	-	-	-	-	-	
618083	Rothwells Farm (Residential), Lowton	51/57[A]	-/[A]	-/[A]	Day: Highway works	NA	35	R	T	-	-	-	-	-	
618084	Rothwells Farm (Residential), Lowton	51/55[A]	-/[A]	-/[A]	Day: Highway works	NA	36	R	T	-	-	-	-	-	

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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											
618085	Rothwells Farm (Residential), Lowton	47/52[A]	-/[A]	-/[A]	Day: Highway works	NA	118	R	T	-	-	-	-	-	
618086	Rothwells Farm (Residential), Lowton	45/48[A]	-/[A]	-/[A]	Day: Highway works	NA	47	R	T	-	-	-	-	-	
618087	Rothwells Farm (Residential), Lowton	46/50[A]	-/[A]	-/[A]	Day: Pond construction	NA	52	R	T	-	-	-	-	-	
618088	Hesketh Meadow Lane, Lowton	62/68[A]	-/[A]	-/[A]	Day: Earthworks	A	22	R	T	-	-	D4	-	-	MA05-C-C4
618089	Hesketh Meadow Lane, Lowton	54/60[A]	-/[A]	-/[A]	Day: Earthworks	NA	9	R	T	-	-	-	-	-	
618111	Lowton Road, Golborne	43/46[A]	-/[A]	-/[A]	Day: Culvert construction	NA	4	R	T	-	-	-	-	-	
618200	Wigshaw Lane, Culcheth	61/68[A]	-/30[A]	-/30[B]	Day: Earthworks Evening: Overbridge construction Night: Overbridge construction	A	1	R	T	-	-	D1	V	-	MA05-C-C2
618201	Robins Lane, Culcheth	61/66[A]	-/32[A]	-/32[A]	Day: Overbridge construction Evening: Overbridge construction	A	2	R	T	-	-	D1	-	-	MA05-C-C2

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Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact		Mitigation effect
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
					Night: Overbridge construction										
618209	Warrington Road, Risley	71/78[B]	39/41[C]	39/41[C]	Day: Overbridge construction Evening: Overbridge construction Night: Overbridge construction	S	2	R	T	H	-	D5		NI	MA05-C-C1
618210	Wigshaw Lane, Culcheth	65/71[C]	35/36[C]	35/36[C]	Day: Overbridge construction Evening: Overbridge construction Night: Overbridge construction	A	3	R	T	H	-	-	-	-	
618211	Stradbroke Close, Lowton	57/60[A]	-/-[A]	-/-[A]	Day: Earthworks	NA	4	R	T	-	-	-	-	-	
618212	Eldridge Court, Robson Way, Lowton	52/56[A]	-/-[A]	-/-[A]	Day: Earthworks	NA	42	R	T	-	-	-	-	-	
618230	Holcroft Grange Care Home, Jackson Avenue, Culcheth	49/53[A]	-/-[A]	-/-[A]	Day: Overbridge construction	NA	1	R	T	-	-	-	-	-	
618231	High Peak Care Home, Main Lane, Culcheth	46/49[A]	-/-[A]	-/-[A]	Day: Earthworks	NA	1	R	T	-	-	-	-	-	

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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											
618247	Warrington Road, Risley	58/65[B]	-/[C]	-/[C]	Day: Overbridge construction	NA	10	R	T	H	-	-	-	-	
618248	Warrington Road, Risley	51/56[B]	-/[C]	-/[C]	Day: Overbridge construction	NA	5	R	T	H	-	-	-	-	
618251	Church Lane, Culcheth	46/51[A]	-/[A]	-/[A]	Day: Overbridge construction	NA	109	R	T	-	-	-	-	-	
618252	Warrington Road, Culcheth	57/63[B]	-/[C]	-/[C]	Day: Pond construction	NA	12	R	T	H	-	-	-	-	
618253	Warrington Road, Culcheth	56/62[A]	-/[A]	-/[B]	Day: Pond construction	NA	20	R	T	-	-	-	-	-	
618254	Pendle Gardens, Culcheth	59/64[A]	-/[A]	-/[B]	Day: Overbridge construction	NA	17	R	T	-	-	-	-	-	
618255	Wigshaw Lane, Culcheth	50/56[A]	-/[A]	-/[A]	Day: Overbridge construction	NA	11	R	T	-	-	-	-	-	
618256	Kenyon Lane, Kenyon	56/61[B]	-/[C]	-/[C]	Day: General site works	NA	8	R	T	H	-	-	-	-	
618257	Moorfield Crescent, Lowton	69/72[A]	-/[A]	-/[A]	Day: Pond construction	A	16	R	T	-	-	D3	V	-	MA05-C-C4
618258	Newton Road, Lowton	56/60[B]	-/[C]	-/[C]	Day: Overbridge construction	NA	50	R	T	H	-	-	-	-	
618259	Wigan Road, Golborne	52/59[C]	-/[C]	-/[C]	Day: Highway works	NA	24	R	T	H	-	-	-	-	
618260	Lily Lane, Bamfurlong	57/62[C]	-/[C]	-/[C]	Day: Highway works	NA	14	R	T	H	-	-	-	-	

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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											
618261	Lily Lane, Bamfurlong	77/82[C]	37/41[C]	37/41[C]	Day: Highway works Evening: Highway works Night: Highway works	S	7	R	T	H	-	D2	-	NI	MA05-C-C6
618263	Chatburn Court, Warrington Road, Culcheth and committed development (Map Book ref.: MA05/038)	56/62[C]	-/[C]	-/[C]	Day: Pond construction	NA	2	R	T	H	-	-	-	-	

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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										
617646	UK Waste Management (Lower Sensitivity Offices), Birchwood Way, Warrington	45/51	-/-	3	-	Day: Underbridge construction	1	A4	T	-	-	-	-	-	
617652	Yew Tree Court (Office), Taylor Business Park, Risley	66/72	-/-	14	-	Day: Auto transformer station GSM-R civil works	1	A4	T	-	-	D30	V	-	MA05-C-N1
617656	St Lewis' Catholic Primary School, Mustard Lane, Croft	47/51	-/-	6	-	Day: Earthworks	1	A3	T	-	-	-	-	-	
617711	Newchurch Community Primary School, Glebeland, Culcheth	61/67	-/-	11	-	Day: Pond construction	1	A3	T	-	-	D29	-	-	MA05-C-N3
617758	Christian Fellowship Church, Hob Hey Lane, Culcheth	47/51	-/-	5	-	Day: Pond construction	1	A2	T	-	-	-	-	-	

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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										
617792	Lowton Social Club, Newton Road, Lowton	51/55	-/-	-	-	Day: Overbridge construction	1	A2	T	H	-	-	-	-	\$
617795	Lowton Junior & Infant School, Newton Road, Lowton	57/64	-/30	13	-	Day: Overbridge construction Night: Overbridge construction	1	A3	T	-	-	D39	-	-	MA05-C-N4
617796	Lowton Youth and Community Centre, Newton Road, Lowton	58/64	-/30	5	-	Day: Overbridge construction Night: Overbridge construction	1	A4	T	-	-	D6	-	-	MA05-C-N5
617798	Gymetc. (Lower Sensitivity Offices), Newton Road, Lowton	72/77	40/41	10	-	Day: Overbridge construction Night: Overbridge construction	1	A4	T	H	-	D19	-	-	MA05-C-N6
617823	Lowton St Mary's C of E Primary	45/49	-/-	4	-	Day: Pond construction	1	A3	T	-	-	-	-	-	

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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										
	School, Newton Road, Lowton														
617832	St Mary's Church, Newton Road, Lowton	49/52	-/-	1	-	Day: Earthworks	1	A2	T	-	-	-	-	-	
617840	Lowton Independent Methodist Church, Newton Road, Lowton	46/50	-/-	2	-	Day: Pond construction	1	A2	T	-	-	-	-	-	
617848	Exact Property services (Offices), Moss Industrial Estate, Leigh	46/49	-/-	4	-	Day: Earthworks	1	A4	T	-	-	-	-	-	
617856	Allied Infrastructure Management (Lower Sensitivity Offices), Moss Industrial Estate, Leigh	48/53	-/-	9	-	Day: Pond construction	1	A4	T	-	-	-	-	-	
617875	Golborne High School, Lowton Road, Golborne	47/51	-/-	4	-	Day: Underbridge construction	1	A3	T	-	-	-	-	-	

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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										
617902	Abram Bryn Gates Primary School, Lily Lane, Abram	50/56	-/-D	1	-	Day: Earthworks	1	A3	T	-	-	-	-	-	\$
617904	Church of the Good Shepherd, Lily Lane, Abram	49/53	-/-	-	-	Day: Earthworks	1	A2	T	H	-	-	-	-	
617927	Holy Family Catholic Primary School, Wigan Street, Platt Bridge	42/48	-/-	5	-	Day: Highway works	1	A3	T	-	-	-	-	-	
617966	Green Meadow Independent Primary School and First Steps Day Nursery, Robson Way, Lowton	49/55	-/-	11	-	Day: Pond construction	1	A3	T	-	-	D1	-	-	*
618008	Smithy Garage (Lower Sensitivity Offices), Church Lane, Culcheth	46/51	-/-	5	-	Day: Pond construction	1	A4	T	-	-	-	-	-	

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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										
618009	Arcon Construction Supplies (Lower Sensitivity Offices), Leacroft Road, Birchwood	46/51	-/-	-	-	Day: Highway works	1	A4	T	H	-	-	-	-	
618010	Bamfurlong Police Station (Office), Bryn Gates Lane, Bamfurlong	47/51	-/-	7	-	Day: Earthworks	1	A3	T	-	-	-	-	-	
618011	Newchurch Parish Church, Church Lane, Culcheth	47/51	-/-	7	-	Day: Pond construction	1	A2	T	-	-	-	-	-	
618012	St Catherine's Roman Catholic Primary School, Cranham Avenue, Lowton	46/49	-/-	5	-	Day: Pond construction	1	A3	T	-	-	-	-	-	
618014	Lowton Church of England High School, Newton Road, Lowton	48/52	-/-	5	-	Day: Overbridge construction	1	A3	T	-	-	-	-	-	

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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										
618110	Taylor Business Park (Lower Sensitivity Offices), Risley	57/62	-/-	18	-	Day: Earthworks	1	A4	T	-	-	D10	-	-	*
618221	Taylor Business Park (Lower Sensitivity Offices), Risley	61/66	-/-	23	1	Day: Earthworks	1	A4	T	-	-	D24	-	-	*
618230	Holcroft Grange Care Home, Jackson Avenue, Culcheth	49/53	-/-	8	-	Day: Overbridge construction	1	A5	T	-	-	-	-	-	
618231	High Peak Care Home, Main Lane, Culcheth	46/49	-/-	5	-	Day: Earthworks	1	A5	T	-	-	-	-	-	
618249	The Estate Office, Taylor Business Park, Risley	68/73	-/-	14	-	Day: Auto transformer station GSM-R civil works	1	A4	T	-	-	D21	V	-	MA05-C-N2
618278	Fishery, Wigshaw, Culcheth	61/67	-/32	4	-	Day: Earthworks Night: Overbridge construction	1	A5	T	H	-	-	-	-	

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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										
618279	Fishery, Wigshaw, Culcheth	68/72	34/36	5	-	Day: Overbridge construction Night: Overbridge construction	1	A5	T	H	-	-	V	-	
618280	Fishery, Wigshaw, Culcheth	59/65	-/31	10	-	Day: Pond construction Night: Overbridge construction	1	A5	T	-	-	-	-	-	
618281	Fishery, Wigshaw, Culcheth	55/61	-/-	11	-	Day: Overbridge construction	1	A5	T	-	-	-	-	-	
618282	Fishery, Wigshaw, Culcheth	56/62	-/-	13	-	Day: Pond construction	1	A5	T	-	-	-	-	-	
618283	Fishery, Wigshaw, Culcheth	61/68	-/30	12	-	Day: Earthworks Night: Earthworks	1	A5	T	-	-	-	-	-	
618284	Fishery, Wigshaw, Culcheth	59/64	-/-	10	-	Day: Highway works	1	A5	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 $\geq 3\text{dB} - < 5\text{dB}$, or $\geq 1\text{dB} - < 3\text{dB}$ where a high existing sound level is identified.
	Orange denotes a moderate impact – a change is of $\geq 5\text{dB} - < 10\text{dB}$, or $\geq 3\text{dB} - < 5\text{dB}$ where a high existing sound level is identified.
	Red denotes a major impact – a change is of $\geq 10\text{dB}$, or $\geq 5\text{dB}$ 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.

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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		
A573 Church Street	Between Lowton Road and Heath Street	R:120 NR:6	65.3	65.9	66.9	0.6	1.6	No	MA05-C-C7

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

Airborne sound levels used in other assessments

- 4.2.14 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.

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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							
617895	Aye Bridge Road, Abram	65/68	-/30	18	0	Day: General site works Night: Culvert construction	Y	-	-	-	-	-
617989	Warrington Road (Offices), Culcheth	46/50	-/-	1	0	Day: Pond construction	-	-	-	-	Y	-
618081	Balmer's Farm, Wigan Road, Golborne (Map Book ref.: MA05/35)	61/65	-/-	10	0	Day: Highway works	Y	-	-	-	-	-
618119	72 Slag Lane, Lowton (Livestock) (Map Book ref.: MA05/25)	62/68	-/-	13	0	Day: Earthworks	Y	-	-	-	-	-
618120	Aye Bridge Farm (Livestock) (Map Book ref.: MA05/36)	65/69	-/31	19	0	Day: Earthworks Night: Culvert construction	Y	-	-	-	-	-
618121	Abram Flashes SSSI	56/59	-/-	16	0	Day: General site works	-	-	-	Y	-	Y
618122	Abram Flashes SSSI	61/66	-/-	10	0	Day: Highway works	-	-	-	Y	-	Y
618123	Abram Flashes SSSI	71/76	32/36	29	1	Day: Highway works Night: Highway works	-	-	-	Y	-	Y
618124	Abram Flashes SSSI	62/68	-/-	19	0	Day: Pond construction	-	-	-	Y	-	Y
618125	Bryn Marsh & Ince Moss SSSI	39/45	-/-	1	0	Day: Highway works	-	-	-	Y	-	Y
618126	Bryn Marsh & Ince Moss SSSI	37/43	-/-	2	0	Day: Highway works	-	-	-	Y	-	Y
618127	Rixton Moss	43/47	-/-	5	0	Day: Viaduct construction	-	-	-	-	-	Y
618128	Rixton Moss	50/53	-/-	8	0	Day: General site works	-	-	-	-	-	Y

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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							
618129	Silver Lane Ponds	59/65	-/-	22	0	Day: Earthworks	-	-	-	-	-	Y
618130	Silver Lane Ponds	53/60	-/-	15	0	Day: Earthworks	-	-	-	-	-	Y
618131	Holcroft Moss	66/73	31/35	22	1	Day: Underbridge construction Night: Underbridge construction	-	-	-	-	-	Y
618132	Holcroft Moss	58/62	-/-	10	0	Day: Viaduct construction	-	-	-	-	-	Y
618133	Holcroft Moss	53/55	-/-	4	0	Day: Earthworks	-	-	-	-	-	Y
618135	Three Sisters Wetlands	41/45	-/-	4	0	Day: Earthworks	-	-	-	-	-	Y
618136	Edge Green Common	45/50	-/-	8	0	Day: Highway works	-	-	-	-	Y	Y
618137	Edge Green	53/58	-/-	8	0	Day: Highway works	-	-	-	-	-	Y
618138	Horrocks Flash	35/41	-/-	1	0	Day: Highway works	-	-	-	-	-	Y
618139	Pennington Flash	49/54	-/-	10	0	Day: General site works	-	-	-	-	-	Y
618140	Pennington Flash	48/51	-/-	9	0	Day: General site works	-	-	-	-	-	Y
618141	Abram Flashes SSSI	61/67	-/-	10	0	Day: Overbridge construction	-	-	-	Y	-	Y
618142	Abram Flashes SSSI	51/54	-/-	11	0	Day: Culvert construction	-	-	-	Y	-	Y
618143	Abram Flashes SSSI	53/56	-/-	13	0	Day: Overbridge construction	-	-	-	Y	-	Y

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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							
618144	Ponds near Lightshaw Lane	60/65	-/-	22	1	Day: Earthworks	-	-	-	-	-	Y
618145	Lightshaw Lime Beds	52/56	-/-	13	0	Day: Underbridge construction	-	-	-	-	-	Y
618146	Park Lane Colliery	54/57	-/-	14	0	Day: Overbridge construction	-	-	-	-	-	Y
618222	Culcheth Linear Park, Culcheth	60/67	-/-	24	1	Day: Overbridge construction	-	Y	-	-	-	-
618223	Culcheth Linear Park, Culcheth	90/91	40/40	45	4	Day: Pond construction Night: Overbridge construction	-	Y	-	-	-	-
618224	Bryne Marsh & Ince Moss SSSI	42/49	-/-	1	0	Day: Highway works	-	-	-	Y	-	-
618225	Abram Flashes SSSI	55/59	-/-	16	0	Day: Highway works	-	-	-	Y	-	Y
618226	Abram Flashes SSSI	58/61	-/-	12	0	Day: General site works	-	-	-	Y	-	Y

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