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HS2

High Speed Rail (Crewe – Manchester) Environmental Statement

Volume 5: Appendix SV-002-0MA08

Sound, noise and vibration

MA08: Manchester Piccadilly Station Baseline and construction sound, noise and vibration report

M266

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Department for Transport

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Tables

1 Introduction

1.1.1 This report is an appendix to the sound, noise and vibration assessment relating to the Manchester Piccadilly Station area (MA08). 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 MA08 provides the baseline and predicted levels as described above.

1.1.4 The third appendix is also specific to MA08, and provides detailed operational sound, noise and vibration levels, see Volume 5, Appendix SV-003-0MA08. 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 MA08, the guidance within the Adopted Manchester City Council Core Strategy 2012-2027 (2012)[1], has been considered when applying the impact and significance criteria set out in the Environmental Impact Assessment Scope and Methodology Report (SMR), (see Volume 5: Appendix CT-001-00001).

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 Manchester City Council (MCC)[2] 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. MCC 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] Manchester City Council (2012), *Manchester's Local Development Framework, Core Strategy Development Plan Document*. Available online at: https://secure.manchester.gov.uk/info/200074/planning/6573/core_strategy_2012-2027.

[2] Meetings held on 16 August 2018 with MCC, and on 7 February 2018, 16 May 2018, 20 February 2019, 5 June 2019, 22 October 2020 and 7 July 2021 with the local and county authorities' Environmental Health Practitioners on a route-wide basis.

2.3 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: Manchester Piccadilly Station (MA08), 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 Manchester Piccadilly Station area is characterised as a predominantly urban environment, being in the centre of Manchester. The sound environment is generally one of a typical city centre, influenced by:

- road traffic and Metrolink services on main through roads;
- buses, taxis and cars accessing the station area;
- existing train movements in and out of Manchester Piccadilly Station;
- fixed building services plant;
- construction activities and local neighbourhood sources including pedestrian activity;
- noise break-out from retail premises (such as shops and bars); and
- deliveries to and servicing of local businesses.

3.1.2 There are several main through roads that contribute to the sound environment within the Manchester Piccadilly Station area: the A57(M) Ring Road/Mancunian Way, the A635 Ring Road/Mancunian Way/Fairfield Street/Ashton Old Road, the A665 Chancellor Lane/Pin Mill Brow/Ring Road/Great Ancoats Street, the A662 Pollard Street, the A6 Upper Brook Street/Downing Street/London Road/Whitworth Street/Aytoun Street, and the A34 Brook Street. The Hope Valley Line and Manchester-Crewe Line (spur of the West Coast Main Line), converge at Ardwick on their approach into Manchester Piccadilly Station.

3.1.3 Sound levels close to these main transportation routes are reasonably high during the day and do not substantially reduce at night. Beyond the immediate influence of these transportation routes, sound levels are controlled by the various other sound sources described above, resulting in a relatively high sound level throughout the Manchester Piccadilly Station area. Levels up to 79dB occur during the day and up to 75dB 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 MA08, two 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 two locations were both long-term measurement locations, comprising unattended measurements of several days' duration.

3.3.6 An additional 10 verification measurements have been carried out, typically close to modelled sound sources and over durations of three hours (attended) or 24 hours (unattended), to assist in verifying the baseline sound model.

3.4 Existing baseline sound modelling

3.4.1 Baseline sound levels have been modelled where existing sound levels at assessment locations are dominated by transport sources which can be reliably modelled. Methodologies from the Calculation of Road Traffic Noise[3] and the Calculation of Railway Noise[4] 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 Manchester Piccadilly Station area, noise from all major roads and railways including the A57(M) Ring Road/Mancunian Way, the A635 Ring Road/Mancunian

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

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

Way/Fairfield Street/Ashton Old Road, the A665 Chancellor Lane/Pin Mill Brow/Ring Road/Great Ancoats Street, the A662, the A6 Upper Brook Street/Downing Street/London Road/Whitworth Street/Aytoun Street, the A34 Brook Street, the Hope Valley Line and Manchester-Crewe Line have been modelled.

3.5 Future baseline methodology

Construction

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

Operation

3.5.2 Changes in road and rail traffic between 2018 and 2038 may result in changes in baseline sound levels at receptors. For modelled transportation sources, future baseline sound levels for operation (2038) have been predicted, based on, for example, expected changes in road traffic flow, composition, speed, and in some cases road surface using the methodology from the Calculation of Road Traffic Noise.

3.5.3 Changes in noise level as a result of changes in road traffic flow, composition and speed are normally small. Roads in Important Areas identified in Department for Environment, Food & Rural Affairs' (Defra) Noise Action Plans[5] 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.

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

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

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

3.6 Baseline sound levels

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

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

3.6.2 These values are presented in Table 1. All values are free-field. The data source coding included within this table details how the baseline sound levels allocated to each assessment location have been derived. This coding is summarised in Table 2 and explained in detail in Volume 5, Appendix SV-001-00000. Codes contained within brackets relate to the derivation of night-time baseline noise levels where they are different to the daytime derivation method.

Table 1: Baseline sound levels

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2038)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hour}$	Night-time $L_{pAeq,8hour}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
615186	St. Gregory's Road, Manchester		50	49	45	51	45	46	73	5,A,i,b
615187	Union Street, Ardwick		61	59	55	61	55	59	79	5,A,i,b
615188	St. Thomas Conference Centre, Ardwick Green North, Manchester		48	46	42	48	42	47	64	5,A,i,b
615189	Brydon Avenue, Manchester		54	52	48	54	48	51	74	5,A,i,b
615190	Cotter Street, Manchester		58	56	52	58	52	56	75	5,A,i,b
615191	Brydon Avenue, Manchester		58	56	51	58	52	56	75	5,A,i,b
615192	Old School House (Offices), Thirsk Street, Manchester		59	56	52	59	53	57	73	3,A,i,b
615193	Paddock Street, Manchester		61	59	55	62	55	60	72	3,A,i,b
615194	City View House (Offices), Union Street, Manchester		58	56	52	58	52	55	78	5,A,i,b
615195	Cotter Street, Manchester		62	59	55	62	56	60	74	3,A,i,b
615196	Graphite House (Offices), Manor Street, Manchester		64	62	57	64	58	63	71	3,A,i,b
615210	Liberty Point, Berry Street, Manchester		52	50	46	52	46	50	69	5,A,i,b
615218	Sackville Street (Offices), Manchester		65	64	60	65	60	61	88	5,A,i,b
615224	Piccadilly Point, Berry Street, Manchester		57	55	51	57	52	55	77	5,A,i,b
615234	Macdonald Hotel, London Road, Manchester and committed		59	58	54	59	54	55	82	5,A,i,b

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2038)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hour}$	Night-time $L_{pAeq,8hour}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
	development (Map Book ref.: MA08/399)									
615241	Piccadilly Point, Berry Street, Manchester	ML712787	63	61	57	63	57	62	82	3,A,i,b
615242	Bombay Street, Manchester		64	62	58	65	59	64	69	3,A,i,b
615244	Echo Street, Manchester and committed development (Map Book ref.: MA08/160)		57	56	52	57	52	53	80	5,A,i,b
615247	Bainbridge House (Office), London Road, Manchester		68	66	62	68	62	67	79	3,A,i,b
615248	Whitworth Street, Manchester	ML712789	65	63	58	65	59	64	69	3,A,i,b
615251	London Road, Manchester		70	67	63	70	64	69	75	3,A,i,b
615253	Cobourg Street, Manchester		67	64	60	67	61	66	71	3,A,i,b
615258	The Manchester College, Shena Simon Campus, Chorlton Street Manchester		63	61	57	64	57	62	67	3,A,i,b
615263	London Road Fire Station (Hotel), Manchester		66	64	60	67	61	65	83	3,A,i,b
615264	Whitworth Street, Manchester		62	59	55	62	56	60	78	3,A,i,b
615266	Piccadilly Place, Manchester		41	39	35	41	36	47	74	5,A,i,b
615267	Canal Street, Manchester		53	51	47	54	48	53	65	3,A,i,b
615268	Monroes Bar Hotel, London Road, Manchester		67	65	61	67	62	66	88	5,A,i,b
615273	Tower Block Piccadilly Station (Offices), Piccadilly, Manchester		53	51	47	53	48	51	74	5,A,i,b

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2038)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hour}$	Night-time $L_{pAeq,8hour}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
615277	3 Piccadilly Place (Education), Manchester and committed development (Map Book ref.: MA08/180)		65	64	61	65	61	67	94	5,A,i,b
615278	Linton Close, Manchester		60	57	53	60	53	58	67	3,A,i,b
615279	Aytoun Street, Manchester		62	60	56	63	57	62	73	3,A,i,b
615280	Ancoats Grove, Manchester		58	55	51	58	51	56	66	3,A,i,b
615281	Staycity (Hotel), Piccadilly, Manchester		48	46	42	50	44	48	74	3,A,i,b
615282	Aeroworks (Offices), Adair Street, Manchester		57	55	50	58	52	56	68	3,A,i,b
615284	Ripley Close, Manchester		58	56	51	58	52	57	67	3,A,i,b
615285	DoubleTree by Hilton Hotel, Piccadilly Place, Manchester		61	59	54	62	56	61	78	3,A,i,b
615286	Minshull Street, Manchester and committed development (Map Book ref.: MA08/066)		58	55	52	60	54	59	73	3,A,i,b
615287	Chapeltown Street, Manchester	ML712783	56	56	52	56	52	63	87	1,A,i,a
615288	Every Street, Manchester		59	57	52	59	53	58	67	3,A,i,b
615289	Advent Way, Manchester		65	62	58	65	59	64	71	3,A,i,b
615291	Advent Way, Manchester		67	64	60	67	61	66	71	3,A,i,b
615292	Chapeltown Street, Manchester	ML712783	56	56	52	56	52	63	87	1,A,i,a
615293	Manchester Crown Court, Minshull Street, Manchester		63	62	58	63	58	61	88	5,A,i,b
615294	Advent Way, Manchester		43	41	37	43	37	41	61	5,A,i,b

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2038)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hour}$	Night-time $L_{pAeq,8hour}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
615295	Thomas Telford Basin, Manchester	ML712782	56	54	51	55	51	62	82	1,A,i,a
615296	Chapeltown Street, Manchester	ML712783	56	56	52	56	52	63	87	1,A,i,a
615297	Advent Way, Manchester		40	38	34	<40	34	39	57	5,C,i,b
615298	Holiday Inn Hotel, Aytoun Street, Manchester		64	62	57	64	58	62	81	5,A,i,b
615299	Thomas Telford Basin, Manchester	ML712782	56	54	51	55	51	62	82	1,A,i,a
615300	Malmaison Hotel, Gore Street, Manchester		65	62	58	65	59	64	73	3,A,i,b
615301	Pollard Street, Manchester		57	54	50	57	51	56	67	3,A,i,b
615302	Isaac Way, Manchester		53	50	46	53	47	52	57	3,A,i,b
615303	Native Aparthotel, Ducie Street, Manchester		50	47	43	52	45	50	67	3,A,i,b
615304	John Smeaton Court, Manchester		44	40	36	43	35	47	74	3,A,i,b
615305	Thomas Telford Basin, Manchester		45	43	39	46	40	44	69	5,A,i,b
615306	Fabrica (Offices), Great Ancoats Street, Manchester		67	65	61	68	62	67	72	3,A,i,b
615307	Fairham Walk, Manchester		49	47	43	49	43	47	64	3,A,i,b
615308	Aytoun Street, Manchester		62	61	58	61	57	62	89	5,A,i,b
615309	Rodwell Tower (Offices), Piccadilly, Manchester		59	57	53	60	54	59	70	3,A,i,b
615310	John Smeaton Court, Manchester		52	51	47	52	47	50	77	5,A,i,b
615311	Wharf Close, Manchester		60	57	53	61	55	60	65	3,A,i,b

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2038)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hour}$	Night-time $L_{pAeq,8hour}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
615312	Britannia Hotel, Portland Street, Manchester		52	50	44	57	51	56	71	3,A,i,b
615313	Ibis Hotel, Pollard Street, Manchester		69	66	62	69	63	68	73	3,A,i,b
615314	Pollard Street, Manchester		56	54	50	56	50	55	70	3,A,i,b
615315	John Smeaton Court, Manchester		43	41	37	43	37	46	73	5,A,i,b
615316	Thomas Telford Basin, Manchester		41	39	35	41	35	40	61	5,A,i,b
615317	Thomas Telford Basin, Manchester		54	51	47	55	49	54	67	3,A,i,b
615318	John Smeaton Court, Manchester		43	41	37	44	38	44	71	3,A,i,b
615319	Store Street, Manchester		61	58	54	62	56	61	66	3,A,i,b
615320	Chapeltown Street, Manchester		56	54	50	56	51	53	80	5,A,i,b
615321	Thomas Telford Basin, Manchester		46	43	39	47	41	46	62	3,A,i,b
615322	Pollard Street, Manchester		55	53	49	56	50	54	72	3,A,i,b
615323	Isaac Way, Manchester		42	40	36	42	36	40	66	5,A,i,b
615324	Wharf Close, Manchester		50	47	43	51	45	50	63	3,A,i,b
615325	William Jessop Court, Manchester		43	40	36	43	37	43	70	3,A,i,b
615326	La Reserve Aparthotel, Ducie Street, Manchester		56	54	49	57	51	56	66	3,A,i,b
615327	Westminster House (Education), 11 Portland Street, Manchester and committed development (Map Book ref.: MA08/318)		62	61	58	61	57	65	92	5,A,i,b
615328	Chapeltown Street, Manchester		61	59	55	61	55	59	84	5,A,i,b

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2038)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hour}$	Night-time $L_{pAeq,8hour}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
615329	Ducie Street, Manchester		47	45	41	49	43	47	62	3,A,i,b
615330	Premier Inn, Dale Street, Manchester		59	56	52	59	53	58	67	3,A,i,b
615331	Every Street, Manchester		56	53	49	56	50	55	64	3,A,i,b
615332	Ducie Street, Manchester		47	44	40	49	42	47	62	3,A,i,b
615333	Jutland Street, Manchester		48	45	41	49	43	48	62	3,A,i,b
615334	11 Ducie Street (Offices), Manchester		57	55	50	59	52	57	64	3,A,i,b
615335	The Grand Portland and Gardens Hotels, Manchester		49	48	45	49	45	50	77	5,A,i,b
615336	Pollard Street, Manchester		59	57	53	60	54	58	77	3,A,i,b
615337	Abode Manchester (Hotel), Piccadilly, Manchester		53	51	47	55	49	54	68	3,A,i,b
615338	James Brindley Basin, Manchester		52	50	46	52	46	51	70	3,A,i,b
615339	Jutland Street, Manchester		48	45	41	49	43	48	62	3,A,i,b
615340	Pollard Street, Manchester		41	39	35	41	35	40	58	5,A,i,b
615341	Ducie Street, Manchester	ML712770	56	50	48	55	48	56	71	2,A,i,b
615342	Paradise Wharf (Offices), Ducie Street, Manchester	ML712770	56	50	48	55	48	56	71	2,A,i,b
615343	Great Ancoats Street, Manchester and committed development (Map Book ref.: MA08/092)		61	59	55	62	55	60	72	3,A,i,b
615344	Dale Street, Manchester		60	57	53	60	54	59	65	3,A,i,b
615345	Your Smile Clinic (Healthcare), Dale Street, Manchester		54	52	48	55	49	54	64	3,A,i,b

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2038)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hour}$	Night-time $L_{pAeq,8hour}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
615346	Ducie Street, Manchester		48	45	41	49	42	47	58	3,A,i,b
615347	Piccadilly (Offices), Manchester		59	57	53	61	55	60	68	3,A,i,b
615348	Great Ancoats Street, Manchester		67	65	61	68	61	66	71	3,A,i,b
615349	Great Ancoats Street, Manchester		60	58	54	60	54	59	75	3,A,i,b
615350	Ducie House (Offices), Ducie Street, Manchester		61	58	54	63	56	61	66	3,A,i,b
615351	Brewer Street, Manchester		48	45	41	49	42	47	59	3,A,i,b
615352	Hilton Street, Manchester		48	45	41	49	42	47	62	3,A,i,b
615353	Spindle Mews, Manchester		54	53	49	55	49	52	75	5,A,i,b
615354	Lizard Street (Offices), Manchester		61	58	54	62	56	61	66	3,A,i,b
615355	Dale Street, Manchester		60	58	53	62	56	61	66	3,A,i,b
615356	Staycity - Northern Quarters Aparthotel, Laystall Street, Manchester and committed development (Map Book ref.: MA08/216)		51	48	44	52	45	50	55	3,A,i,b
615357	Fourways House (Offices), Hilton Street, Manchester		<40	37	32	<40	33	38	61	3,C,i,b
615358	Brewer Street, Manchester		49	47	43	51	44	49	55	3,A,i,b
615359	Tariff Street, Manchester		47	44	40	49	43	48	62	3,A,i,b
615360	Cheetwood House, Dale Street, Manchester and committed development (Map Book ref.: MA08/222)		67	65	60	59	52	57	64	3,A,i,b

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2038)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hour}$	Night-time $L_{pAeq,8hour}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
615361	Tariff Street, Manchester		49	46	42	50	44	49	56	3,A,i,b
615362	Hatters Hostel, Newton Street, Manchester		60	58	52	62	56	61	66	3,A,i,b
615363	Hilton Street, Manchester		60	60	56	61	55	60	65	3,A,i,b
615364	University of Manchester Pariser Building, Sackville Street, Manchester		45	43	39	45	39	43	69	5,A,i,b
615365	MSS Tower (University), Sackville Street, Manchester		64	62	58	64	58	63	73	3,A,i,b
615366	Piccadilly (Hotel), Manchester and committed development (Map Book ref.: MA08/089)	ML712790	60	57	53	61	55	60	70	3,A,i,b
615367	Old Mill Street, Manchester		56	54	50	56	50	55	72	3,A,i,b
615369	Vesta Street, Manchester		56	54	50	56	50	54	75	5,A,i,b
615370	Portland Street (College), Manchester		52	51	48	51	47	53	80	5,A,i,b
615381	University of Manchester Ferranti Building, Sackville Street Campus, Manchester		45	43	39	46	40	44	65	3,A,i,b
615382	University of Manchester The Mill, Sackville Street Campus, Manchester		55	53	49	55	49	53	72	5,A,i,b
615383	University of Manchester Paper Science Building, Sackville Street Campus, Manchester		53	52	48	53	48	56	83	5,A,i,b
615384	University of Manchester Morton Lab, Sackville Street Campus, Manchester		61	59	55	61	55	60	72	3,A,i,b

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2038)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hour}$	Night-time $L_{pAeq,8hour}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
615385	University of Manchester Renold Building, Altrincham Street, Manchester		62	62	58	62	58	61	88	4,A,i,b
615386	University of Manchester Barnes Wallis Building, Sackville Street Campus, Manchester		60	60	56	60	56	57	84	5,A,i,b
615387	University of Manchester Moffat Building, Sackville Street Campus, Manchester		61	59	55	60	55	58	85	5,A,i,b
615388	University of Manchester Sackville Street Building, Sackville Street, Manchester		60	57	53	60	54	59	69	3,A,i,b
615391	Motel One (Hotel), London Road, Manchester		64	63	59	64	60	67	94	5,A,i,b
615393	Transport for Greater Manchester (Offices), Piccadilly, Manchester		62	61	58	62	58	70	97	5,A,i,b
615402	Fairfield Street, Manchester		65	62	58	65	59	64	73	3,A,i,b
616003	Chapeltown Street, Manchester		57	57	54	57	54	61	88	4,A,i,b
616004	Store Street, Manchester		56	54	49	57	51	56	61	3,A,i,b
616005	Dakota Manchester (Hotel), Ducie Street, Manchester		54	51	47	56	49	54	62	3,A,i,b
616007	Ducie Street, Manchester and committed development (Map Book ref.: MA08/098)		55	52	48	57	50	55	60	3,A,i,b
616504	4 Piccadilly Place (Offices), Manchester		66	66	63	66	63	69	96	4,A,i,b

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2038)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hour}$	Night-time $L_{pAeq,8hour}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
616506	George House Trust, Ardwick Green North, Manchester		50	49	44	50	45	46	73	5,A,i,b
616507	Manchester Chinese Centre, Ardwick Green, Manchester		50	49	45	50	45	47	72	5,A,i,b
616742	Spirit Studios (Recording studios and classes), Downing Street, Manchester		70	67	63	70	64	69	74	3,A,i,b
616743	Keenan Properties (Office), Ardwick Green South, Manchester		69	66	62	69	63	68	73	3,A,i,b
616744	City End (Student accommodation), Hamsell Road, Manchester		68	66	62	69	62	67	72	3,A,i,b
616745	City End (Student accommodation), Hamsell Road, Manchester		54	52	47	54	48	53	63	3,A,i,b
616746	City End (Student accommodation), Hamsell Road, Manchester		49	46	42	49	43	47	62	3,A,i,b
616747	Medlock Primary School, Wadeson Road, Manchester		57	54	50	57	51	56	67	3,A,i,b
616748	Astra Travel (Offices), Ardwick Green South		68	66	61	68	62	67	72	3,A,i,b
616749	Wadeson Road, Manchester		61	58	54	61	55	60	65	3,A,i,b
616750	Harehill Close, Manchester		58	56	52	59	53	58	63	3,A,i,b
616751	Wadeson Road, Manchester		59	56	52	59	53	58	63	3,A,i,b
616752	Mosscot Walk, Manchester		55	53	48	55	49	54	62	3,A,i,b
616753	Wadeson Road, Manchester		56	53	49	56	50	55	62	3,A,i,b
616754	Brownslow Walk, Manchester		54	52	48	55	49	53	63	3,A,i,b
616755	Skerry Close, Manchester		53	51	46	53	47	52	62	3,A,i,b

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2038)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hour}$	Night-time $L_{pAeq,8hour}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
616756	Blackhill Close, Manchester		52	50	46	53	46	51	62	3,A,i,b
616757	Grosvenor Street, Manchester		56	54	49	57	51	56	62	3,A,i,b
616758	Deanwater Close, Manchester		51	49	45	51	45	50	62	3,A,i,b
616759	Hanworth Close, Manchester		53	50	46	53	47	52	62	3,A,i,b
616760	Lockton Close, Manchester		63	60	56	64	58	63	68	3,A,i,b
616761	Lockton Close, Manchester		63	61	56	64	57	62	67	3,A,i,b
616762	Skerry Close, Manchester		49	46	42	49	43	47	62	3,A,i,b
616763	Balsam Close, Manchester		50	47	43	50	44	48	64	3,A,i,b
616764	Maplin Close, Manchester		50	47	43	50	44	48	64	3,A,i,b
616765	Deanwater Close, Manchester		50	48	44	50	44	49	61	3,A,i,b
616766	Skerry Close, Manchester		48	45	41	48	42	46	61	3,A,i,b
616767	Hardshaw Close, Manchester		46	44	40	47	41	45	61	3,A,i,b
616768	Haymans Walk, Manchester		48	45	41	48	42	46	62	3,A,i,b
616769	Kincardine Court, Manchester		50	47	43	50	44	48	62	3,A,i,b
616770	Mawson Road, Manchester		50	48	44	51	44	49	61	3,A,i,b
616771	Milnrow Close, Manchester		52	50	45	53	46	51	61	3,A,i,b
616772	Silkin Court, Manchester		53	51	46	53	47	52	63	3,A,i,b
616773	Stockland Close, Manchester		49	47	43	50	43	48	60	3,A,i,b
616774	Wai Yin Society Centre, Justin Close, Manchester		51	48	44	51	45	50	58	3,A,i,b
616775	Stockland Close, Manchester		50	48	44	51	45	50	60	3,A,i,b

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2038)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hour}$	Night-time $L_{pAeq,8hour}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
616776	The Salvation Army Manchester Central Corps, Grosvenor St, Manchester		58	55	51	60	54	59	64	3,A,i,b
616777	Build Staff (Office), Grosvenor Street, Manchester		56	53	49	58	52	57	62	3,A,i,b
616778	Litcham Close, Manchester		58	55	50	60	53	58	63	3,A,i,b
616779	Flat block on Lamport Close, Manchester		62	60	55	63	56	61	66	3,A,i,b
616780	Lockton Close, Manchester		57	54	50	57	51	56	63	3,A,i,b
616781	Flat block on Lockton Close, Manchester		60	58	54	61	55	60	65	3,A,i,b
616782	Penfield Close, Manchester		60	56	52	61	55	60	65	3,A,i,b
616783	Mancroft Walk, Manchester		58	55	51	58	52	57	62	3,A,i,b
616784	Grosvenor Street, Manchester		59	56	52	61	55	60	65	3,A,i,b
616785	Penfield Close, Manchester		53	50	46	54	48	53	60	3,A,i,b
616786	Litcham Close, Manchester		55	52	48	57	50	55	62	3,A,i,b
616787	Pendulum Hotel, Sackville Street, Manchester		62	59	55	64	57	62	72	3,A,i,b
616788	Great Ancoats Street, Manchester		62	60	56	62	55	60	65	3,A,i,b
616789	Balsam Close, Manchester		47	45	41	47	41	46	63	5,A,i,b
616790	New Islington Medical Practice, Manchester		62	59	55	62	55	60	66	3,A,i,b

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2038)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hour}$	Night-time $L_{pAeq,8hour}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
616791	PHA Model and Casting Management, Tanzaro House (Offices), Ardwick Green, Manchester		58	55	51	58	52	57	63	3,A,i,b
616792	Tanzaro House (Offices), Ardwick Green North, Manchester		54	51	47	54	48	53	60	3,A,i,b
616793	TCA Showroom (Office), Ardwick Green North, Manchester		56	53	49	56	50	55	60	3,A,i,b
616794	Cotter Street, Manchester		54	52	48	54	48	52	72	5,A,i,b
616795	A G I Solicitors (Office), Ardwick Green North, Manchester		55	53	49	55	49	54	63	3,A,i,b
616796	Kiss the Light (Office), Ducie Street, Manchester		62	59	55	63	57	62	67	3,A,i,b
616797	Eternal Life Sanctuary (Church), Lomax Street, Manchester		59	56	52	58	52	57	62	3,A,i,b
616798	USE (Offices), Manchester		56	54	50	56	50	55	64	3,A,i,b
616799	Great Ancoats Street, Manchester		69	66	62	69	62	67	72	3,A,i,b
616800	Bainbridge House (Office), London Road, Manchester		68	66	62	68	62	67	72	3,A,i,b
616801	Macdonald Hotel, London Road, Manchester and Committed Development (Map Book ref.: MA08/399)	ML712792	64	62	58	64	58	62	83	5,A,i,b
616802	Piccadilly Point, Berry Street, Manchester		52	50	46	52	46	50	70	5,A,i,b
616803	Liberty Point, Berry Street, Manchester		51	49	45	52	46	50	67	3,A,i,b

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2038)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hour}$	Night-time $L_{pAeq,8hour}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
616804	DoubleTree by Hilton Hotel, Piccadilly Place, Manchester		62	59	55	62	56	61	74	3,A,i,b
616805	Store Street, Manchester		66	64	60	67	60	65	70	3,A,i,b
616806	Ducie Street, Manchester		60	57	52	61	55	60	65	3,A,i,b
616807	Paradise Wharf (Offices), Ducie Street, Manchester		56	53	48	57	51	56	62	3,A,i,b
616809	Dakota Manchester (Hotel), Ducie Street, Manchester		56	53	49	58	51	56	61	3,A,i,b
616814	Great Ancoats Street, Manchester		67	65	60	67	61	66	71	3,A,i,b
616815	Great Ancoats Street, Manchester		61	58	54	61	54	59	69	3,A,i,b
616816	Old Mill Street, Manchester		63	60	56	63	57	62	67	3,A,i,b
616817	Great Ancoats Street, Manchester and committed development (Map Book ref.: MA08/092)		64	61	57	64	58	63	69	3,A,i,b
616818	James Brindley Basin, Manchester		57	54	50	57	51	56	69	3,A,i,b
616819	William Jessop Court, Manchester		46	44	39	47	41	45	70	3,A,i,b
616820	Staycity - Northern Quarters Aparthotel, Laystall Street, Manchester and committed development (Map Book ref.: MA08/216)		63	61	57	63	57	62	67	3,A,i,b
616821	New Islington Free School (School), Oldham Way, Manchester		45	42	38	44	38	43	59	3,A,i,b
616822	Julie Twist Properties (Offices), Redhill Street, Manchester		59	57	53	59	53	58	63	3,A,i,b

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2038)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hour}$	Night-time $L_{pAeq,8hour}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
616823	Army Reserve Centre (Lower Sensitivity Offices), Ardwick Green North, Manchester		64	62	57	64	58	63	68	3,A,i,b
616860	University of Manchester Moffat Building, Sackville Street Campus, Manchester		60	57	53	59	53	58	75	3,A,i,b
616867	Malta Street, Manchester	ML712781	63	60	56	63	57	61	77	3,A,i,b
616868	Lampwick Lane, Manchester		52	50	47	52	47	49	75	5,A,i,b
616869	Munday Street, Manchester		55	54	50	55	51	55	82	5,A,i,b
616870	Munday Street, Manchester		54	52	49	54	49	51	76	5,A,i,b
616871	Munday Street, Manchester		57	56	52	57	53	60	87	5,A,i,b
616872	Munday Street, Manchester		56	54	51	56	51	53	80	5,A,i,b
616873	Isaac Way, Manchester		40	38	34	41	36	42	69	5,A,i,b
616874	St. Anne's RC Primary School, Carruthers Street, Manchester		52	51	47	53	48	50	77	5,A,i,b
616875	St. Anne's Presbytery, Carruthers Street, Manchester		51	49	45	52	46	50	68	3,A,i,b
616876	Mayes Gardens, Manchester		46	44	40	47	41	44	69	5,A,i,b
616877	Mayes Gardens, Manchester		45	42	38	45	39	44	66	3,A,i,b
616878	Guest Street, Manchester		43	40	36	43	37	42	69	3,A,i,b
616879	Guest Street, Manchester		45	43	39	46	40	45	69	3,A,i,b
616880	Hackleton Close, Manchester		62	60	56	62	57	60	86	5,A,i,b
616881	Pollard Street, Manchester		53	50	46	53	48	57	84	5,A,i,b

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2038)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hour}$	Night-time $L_{pAeq,8hour}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
616882	Coppersmith Road, Manchester		53	51	47	54	47	52	64	3,A,i,b
616883	Tavery Close, Manchester		63	60	56	63	57	62	67	3,A,i,b
616886	Chapeltown Street, Manchester		68	65	61	68	61	66	79	3,A,i,b
616887	Pollard Street, Manchester		<40	37	33	<40	34	46	73	5,C,i,b
616888	Union Street, Ardwick		65	63	59	65	59	64	75	3,A,i,b
616889	Union Street, Manchester		66	63	59	66	60	65	73	3,A,i,b
616890	Union Street, Manchester		66	64	59	67	61	66	71	3,A,i,b
616891	Westway Nissan (Lower Sensitivity Offices), Chancellor Lane, Manchester		59	57	53	59	53	57	76	5,A,i,b
616894	Dale House, Dale Street, Manchester and committed development (Map Book ref.: MA08/219)		52	50	45	54	48	53	63	3,A,i,b
616895	Ducie Street, Manchester and committed development (Map Book ref.: MA08/212)		57	55	50	59	52	57	62	3,A,i,b
616896	Adair Street (Hotel), Manchester and committed development (Map Book ref.: MA08/260)		64	61	57	64	58	63	69	3,A,i,b
616897	Indemnity House (Education), Chatham Street, Manchester		49	47	43	51	45	49	72	3,A,i,b
616898	Victoria House, Great Ancoats Street, Manchester and committed development (Map Book ref.: MA08/255)		68	66	62	69	63	68	75	3,A,i,b

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2038)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hour}$	Night-time $L_{pAeq,8hour}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
616899	Mindal House, Bloom Street, Manchester and committed development (Map Book ref.: MA08/342)		54	51	48	57	51	56	73	3,A,i,b
616900	Store Street, Manchester and committed development (Map Book ref.: MA08/361)		58	55	51	60	53	58	63	3,A,i,b
616909	Piercy Street, Manchester		43	41	37	44	38	44	71	3,A,i,b
616910	Pollard Street (Offices), Manchester and committed development (Map Book ref.: MA08/402)		59	58	54	59	55	65	92	5,A,i,b

Table 2: Data source coding key

Code	Data source type
1	Long-term measurement location (typically seven days).
2	Short-term (typically unattended 24 hours or attended measurements of several hours).
3	Specific road traffic validated prediction.
4	Specific rail traffic validated prediction.
5	Specific combined road and rail traffic validated prediction.
6	Levels adopted from nearby assessment location.
7	Predictions from other sources (e.g. Defra noise maps).
Code	**Corrections applied**
A	Data from above source applied directly.
B	Correction applied based upon location of assessment location.
C	Minimum level cut-off applied.
Code	**Distance from measurement**
i	Data applied from a measurement / prediction at or very close to the assessment location.
ii	Data applied from a local measurement location at a greater distance but noted to have equivalent acoustic climate.
iii	Data applied from a distant measurement location where sound levels would be expected to be similar.
Code	**Uncertainty**
a	Data are considered highly representative of the prevailing sound climate.
b	Data are considered representative of the prevailing sound climate, but uncertainties and/or variations in measured levels indicate that there may be a higher degree of uncertainty than for (a).
c	Data are considered to be an estimate of the sound climate due to assumptions made.

4 Construction

4.1 Evaluation of impacts and effects

4.1.1 This appendix provides a quantitative assessment of construction noise and vibration impacts/effects and a qualitative assessment of likely significant effects, based on the impacts/effects identified and other local context information consistent with the scope and methodology defined for the Proposed Scheme.

4.1.2 Indirect effects arising from temporary changes in traffic patterns on the existing road network as a consequence of constructing the Proposed Scheme are reported where they are likely to occur within the study area as defined in Volume 5, Appendix SV-001-00000.

4.1.3 In undertaking the assessment of sound, noise and vibration, consistent with the Environmental Impact Assessment Directive[6] and planning practice on noise[7] 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: Manchester Piccadilly Station (MA08), Section 13.

[6] *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.

[7] 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: Manchester Piccadilly Station (MA08), 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 and Table 6 is provided in Volume 5: Appendix SV-001-00000, with the following additional notes in Table 3.

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

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

Symbol	Explanation
V1 – V4	Type of receptor (ground-borne vibration) – (V1) vibration sensitive research and manufacturing; hospitals with vibration sensitive equipment/operations; universities with vibration sensitive research equipment/operations, (V2) hotels, hospital wards and education dormitories, (V3) offices, schools and places of worship, (V4) workshops.
T	Receptor design – typical.
SP	Receptor design – special.
+	The use and sensitivity of this non-residential receptor or land use is very sensitive to noise and has been included in the detailed assessment (presented in Volume 2) where there is a change less than 3dB. In each case specific information is presented in an associated footnote.
$	The impact methodology for non-residential receptors includes a screening criterion for A2 building use of 50dB$L_{pAeq,07:00 - 23:00}$, A3 building use of 50dB$L_{pAeq,07:00 - 23:00}$, and 45dB$L_{pAeq,23:00 - 07:00}$ and for A4 building. use 55dB$L_{pAeq,07:00 - 23:00}$ (except for A4 buildings containing lower sensitivity offices, in which case the relevant A and B categories from the BS5228 ABC method will be used to assess the noise impact). At the receptor denoted, the screening criteria is met but a change of 3dB or greater has not been identified and therefore no impact is identified. Further information is provided in Volume 5: Appendix SV-001-00000.
H	Existing environment – high existing airborne ambient noise levels, day >75dB, evening >65dB or night >55dBL_{pAeq} at the façade.
L	Existing environment – low existing airborne ambient noise levels, day and evening ≤45dB, or night ≤35dBL_{pAeq} at the façade.
D,E,N	Impact duration (months) – duration of impact during the day (D), evening (E) or night (N).
O, CT, V	Combined Impact: If noise or vibration impacts from other construction activities occur at this location: onsite activities (O), off-site construction traffic activities (CT), or construction vibration (V).
NI	Mitigation effect – identified as likely to qualify for noise insulation under the draft Code of Construction Practice (CoCP) Volume 5: Appendix CT-002-00000.
TR	Mitigation effect – identified as likely to qualify for temporary rehousing under the draft CoCP.

Ground-borne sound and vibration

4.2.5 Activities associated with the construction phases of the Proposed Scheme will generate ground-borne sound and vibration. The assessment of the likely impacts and significant effects as a result of the construction noise has considered the effects on:

- residential receptors, both as individual dwellings and communities; and
- non-residential receptors.

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

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

Assessment location		Impact criteria	Significance criteria										Significant effect
Reference	Area represented	Peak particle velocity (PPV) [mm/s] on foundation	Typical/highest monthly indoor vibration dose value (VDV) [m/s$^{1.75}$]		Construction activity resulting in highest forecast vibration	Type of effect	Number of properties represented	Type of receptor	Receptor design	Unique feature	Combined impact	Impact duration [m]	
			Day 07:00 – 23:00	Night 23:00 – 07:00									
615273	Tower Block Piccadilly Station (Offices), Piccadilly, Manchester	0.3	0.04/0.28	-/-	Site set up (vibratory roller)	NA	1	V3	T	-	-		
615277	3 Piccadilly Place (Education), Manchester and committed development (Map Book ref.: MA08/180)	0.1	0.02/0.06	-/-	Site set up (vibratory roller)	NA	1	V3	T	-	-		
615281	Staycity (Hotel), Piccadilly, Manchester	0.9	0.04/0.43	-/-	Site set up (vibratory roller)	A	1	V2	T	-	O	D5	MA08-C-N30
615282	Aeroworks (Offices), Adair Street, Manchester	1.4	0.04/0.60	-/-	Site set up (vibratory roller)	A	1	V3	T	-	O	D5	MA08-C-N34
615287	Chapeltown Street, Manchester	2	0.20/<0.8[8]	-/-	Site set up (vibratory roller)	A	47	R	T	-	O	D5	MA08-C-C6
615292	Chapeltown Street, Manchester	2	0.08/0.76	-/-	Site set up (vibratory roller)	A	30	R	T	-	O	D5	MA08-C-C6
615295	Thomas Telford Basin, Manchester	0.6	0.04/0.28	-/-	Site set up (vibratory roller)	A	12	R	T	-	O	D5	MA08-C-C6

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

Assessment location		Impact criteria	Significance criteria										Significant effect
Reference	Area represented	Peak particle velocity (PPV) [mm/s] on foundation	Typical/highest monthly indoor vibration dose value (VDV) [m/s$^{1.75}$]		Construction activity resulting in highest forecast vibration	Type of effect	Number of properties represented	Type of receptor	Receptor design	Unique feature	Combined impact	Impact duration [m]	
			Day 07:00 – 23:00	Night 23:00 – 07:00									
615296	Chapeltown Street, Manchester	0.3	0.08/0.15	-/-	Site set up (vibratory roller)	NA	27	R	T	-	-		
615299	Thomas Telford Basin, Manchester	0.2	0.04/0.16	-/-	Site set up (vibratory roller)	NA	8	R	T	-	-		
615303	Native Aparthotel, Ducie Street, Manchester	1.6	0.24/<0.8[8]	-/-	Site set up (vibratory roller)	A	1	V3	T	-	O	D5	MA08-C-N33
615304	John Smeaton Court, Manchester	0.1	0.04/0.12	-/-	Site set up (vibratory roller)	NA	8	R	T	-	-		
615305	Thomas Telford Basin, Manchester	0.2	0.04/0.16	-/-	Site set up (vibratory roller)	NA	18	R	T	-	-		
615309	Rodwell Tower (Offices), Piccadilly, Manchester	0.3	0.04/0.24	-/-	Site set up (vibratory roller)	NA	1	V3	T	-	-		
615311	Wharf Close, Manchester	1.2	0.08/0.67	-/-	Site set up (vibratory roller)	A	15	R	T	-	O	D5	MA08-C-C5
615319	Store Street, Manchester	0.4	0.04/0.26	-/-	Site set up (vibratory roller)	A	20	R	T	-	O	D5	MA08-C-C5
615324	Wharf Close, Manchester	1	0.08/0.58	-/-	Site set up (vibratory roller)	A	21	R	T	-	O	D5	MA08-C-C5
615326	La Reserve Aparthotel, Ducie Street, Manchester	0.4	0.08/0.33	-/-	Site set up (vibratory roller)	A	1	V2	T	-	O	D5	MA08-C-N32

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									
615329	Ducie Street, Manchester	0.4	0.12/0.26	-/-	Site set up (vibratory roller)	A	25[9]	R	T	-	O	D5	MA08-C-C5
615330	Premier Inn, Dale Street, Manchester	0.3	0.04/0.28	-/-	Site set up (vibratory roller)	A	1	V2	T	-	O	D5	MA08-C-N31
615332	Ducie Street, Manchester	0.4	0.12/0.27	-/-	Site set up (vibratory roller)	A	25[9]	R	T	-	O	D5	MA08-C-C5
615333	Jutland Street, Manchester	0.6	0.08/0.35	-/-	Site set up (vibratory roller)	A	20	R	T	-	O	D5	MA08-C-C5
615334	11 Ducie Street (Offices), Manchester	0.2	0.08/0.12	-/-	Site set up (vibratory roller)	NA	1	V3	T	-	-		
615339	Jutland Street, Manchester	0.5	0.08/0.32	-/-	Site set up (vibratory roller)	A	57	R	T	-	O	D5	MA08-C-C5
615341	Ducie Street, Manchester	0.2	0.04/0.18	-/-	Site set up (vibratory roller)	NA	28	R	T	-	-		
615346	Ducie Street, Manchester	0.2	0.04/0.12	-/-	Site set up (vibratory roller)	NA	29	R	T	-	-		
615391	Motel One (Hotel), London Road, Manchester	0.1	0.04/0.12	-/-	Site set up (vibratory roller)	NA	1	V2	T	-	-		

[9] Approximately half this number classed as a significant effect.

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									
616003	Chapeltown Street, Manchester	1.9	0.04/0.69	-/-	Site set up (vibratory roller)	A	126	R	T	-	O	D5	MA08-C-C6
616005	Dakota Manchester (Hotel), Ducie Street, Manchester	0.2	0.04/0.12	-/-	Site set up (vibratory roller)	NA	1	V2	T	-	-		
616808	Ducie Street, Manchester	0.2	0.04/0.12	-/-	Site set up (vibratory roller)	NA	28	R	T	-	-		
616809	Dakota Manchester (Hotel), Ducie Street, Manchester	0.1	0.04/0.12	-/-	Site set up (vibratory roller)	NA	1	V2	T	-	-		
616810	Jutland Street, Manchester	0.2	0.04/0.16	-/-	Site set up (vibratory roller)	NA	57	R	T	-	-		
616811	Jutland Street, Manchester	0.2	0.08/0.16	-/-	Site set up (vibratory roller)	NA	20	R	T	-	-		
616812	Ducie Street, Manchester	0.2	0.08/0.16	-/-	Site set up (vibratory roller)	NA	25	R	T	-	-		
616813	Ducie Street, Manchester	0.2	0.08/0.16	-/-	Site set up (vibratory roller)	NA	25	R	T	-	-		

Assessment location		Impact criteria	Significance criteria										Significant effect
Reference	Area represented	Peak particle velocity (PPV) [mm/s] on foundation	Typical/highest monthly indoor vibration dose value (VDV) [m/s$^{1.75}$]		Construction activity resulting in highest forecast vibration	Type of effect	Number of properties represented	Type of receptor	Receptor design	Unique feature	Combined impact	Impact duration [m]	
			Day 07:00 – 23:00	Night 23:00 – 07:00									
616891	Westway Nissan (Lower Sensitivity Offices), Chancellor Lane, Manchester	0.4	-/0.16	-/-	Site set up (vibratory roller)	NA	1	V3	T	-	-		
616892	Staycity (Hotel), Piccadilly, Manchester	0.4	0.04/0.34	-/-	Site set up (vibratory roller)	A	1	V2	T	-	-	D5	MA08-C-N30

Airborne sound: direct impacts and effects

4.2.7 Activities associated with the construction phases of the Proposed Scheme will generate airborne noise. The assessment of the likely impacts and significant effects as a result of the construction noise has considered the effects on:

- residential receptors, both as individual dwellings and communities; and
- non-residential receptors, including quiet areas.

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

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

Table 5: Assessment of construction noise at residential receptors

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
615186	St. Gregory's Road, Manchester	55/57[A]	30/32[A]	30/32[C]	Day: General site works Evening: Bored tunnel works Night: Bored tunnel works	NA	27	R	T	-	-	-	-	-	
615187	Union Street, Ardwick	61/64[B]	32/35[C]	32/35[C]	Day: Viaduct construction Evening: Bored tunnel works Night: Bored tunnel works	NA	22	R	T	H	-	-	-	-	
615189	Brydon Avenue, Manchester	55/57[A]	30/32[B]	30/32[C]	Day: Retaining walls construction Evening: Bored tunnel works Night: Bored tunnel works	NA	20	R	T	-	-	-	-	-	

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
615190	Cotter Street, Manchester	59/62[A]	30/33[C]	30/33[C]	Day: Viaduct construction Evening: Bored tunnel works Night: Bored tunnel works	NA	62	R	T	H	-	-	-	-	
615191	Brydon Avenue, Manchester	57/60[A]	-/32[C]	-/32[C]	Day: Highway works Evening: Bored tunnel works Night: Bored tunnel works	NA	8	R	T	H	-	-	-	-	
615193	Paddock Street, Manchester	56/58[B]	-/31[C]	-/31[C]	Day: Retaining walls construction Evening: Bored tunnel works Night: Bored tunnel works	NA	10	R	T	H	-	-	-	-	
615195	Cotter Street, Manchester	56/59[B]	30/32[C]	30/32[C]	Day: General site works Evening: Bored tunnel works Night: Bored tunnel works	NA	11	R	T	H	-	-	-	-	

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
615210	Liberty Point, Berry Street, Manchester	61/65[A]	-/32[B]	-/32[C]	Day: Viaduct construction Evening: Bored tunnel works Night: Bored tunnel works	NA	356	R	T	-	-	-	-	-	
615224	Piccadilly Point, Berry Street, Manchester	67/70[A]	33/36[C]	33/36[C]	Day: Demolitions Evening: Bored tunnel works Night: Bored tunnel works	A	110	R	T	H	-	D69	-	-	MA08-C-C2
615242	Bombay Street, Manchester	36/38[B]	-/-[C]	-/-[C]	Day: Demolitions	NA	213	R	T	H	-	-	-	-	
615244	Echo Street, Manchester and committed development (Map Book ref.: MA08/160)	53/56[A]	-/-[C]	-/-[C]	Day: Pipe jack works	NA	497	R	T	H	-	-	-	-	
615248	Whitworth Street, Manchester	40/48[C]	-/-[C]	-/-[C]	Day: Highway works	NA	54	R	T	H	-	-	-	-	
615251	London Road, Manchester	59/65[C]	-/-[C]	-/-[C]	Day: Highway works	NA	5	R	T	H	-	-	-	-	

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
615253	Cobourg Street, Manchester	47/49[C]	-/-[C]	-/-[C]	Day: General site works	NA	22	R	T	H	-	-	-	-	
615258	The Manchester College, Shena Simon Campus, Chorlton Street Manchester	47/53[B]	-/-[C]	-/-[C]	Day: Highway works	NA	1	R	T	H	-	-	-	-	
615264	Whitworth Street, Manchester	59/64[B]	-/-[C]	-/-[C]	Day: Highway works	NA	26	R	T	H	-	-	-	-	
615266	Piccadilly Place, Manchester	45/48[A]	-/-[A]	-/-[A]	Day: Highway works	NA	147	R	T	-	-	-	-	-	
615267	Canal Street, Manchester	44/46[A]	-/-[B]	-/-[C]	Day: General site works	NA	37	R	T	-	-	-	-	-	
615278	Linton Close, Manchester	61/63[B]	34/37[C]	34/37[C]	Day: General site works Evening: Bored tunnel works Night: Bored tunnel works	NA	6	R	T	H	-	-	-	-	
615279	Aytoun Street, Manchester	41/43[B]	-/-[C]	-/-[C]	Day: Pipe jack works	NA	478	R	T	H	-	-	-	-	

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
615280	Ancoats Grove, Manchester	59/62[A]	31/33[C]	31/33[C]	Day: Retaining walls construction Evening: Bored tunnel works Night: Bored tunnel works	NA	16	R	T	H	-	-	-	-	
615284	Ripley Close, Manchester	61/64[A]	36/40[C]	36/40[C]	Day: General site works Evening: Bored tunnel works Night: Bored tunnel works	NA	12	R	T	H	-	-	-	-	
615286	Minshull Street, Manchester and committed development (Map Book ref.: MA08/066)	51/56[A]	-/-[C]	-/-[C]	Day: Pipe jack works	NA	39	R	T	H	-	-	-	-	

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
615287	Chapeltown Street, Manchester	79/83[A]	34/35[C]	34/35[C]	Day: Highway works Evening: Station construction Night: Station construction	S	47[10]	R	T	H	-	D95	V	NI	MA08-C-C6
615288	Every Street, Manchester	60/63[A]	30/33[C]	30/33[C]	Day: Demolitions Evening: Bored tunnel works Night: Bored tunnel works	NA	11	R	T	H	-	-	-	-	
615289	Advent Way, Manchester	68/71[C]	40/44[C]	40/44[C]	Day: Demolitions Evening: Bored tunnel works Night: Bored tunnel works	NA	201	R	T	H	-	-	-	-	
615291	Advent Way, Manchester	68/72[C]	40/44[C]	40/44[C]	Day: Highway works Evening: Bored tunnel works Night: Bored tunnel works	NA	112	R	T	H	-	-	-	-	

[10] Only 28 properties are forecast to experience noise above the eligibility criteria for noise insulation.

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											
615292	Chapeltown Street, Manchester	75/80[A]	33/35[C]	33/35[C]	Day: Highway works Evening: Station construction Night: Station construction	S	30[11]	R	T	H	-	D93	V	NI	MA08-C-C6
615294	Advent Way, Manchester	63/66[A]	40/44[A]	40/44[A]	Day: General site works Evening: Bored tunnel works Night: Bored tunnel works	A	35	R	T	-	-	D4	-	-	MA08-C-C11
615295	Thomas Telford Basin, Manchester	68/73[A]	-/-[B]	-/-[C]	Day: Viaduct construction	A	12	R	T	H	-	D93	V	-	MA08-C-C6
615296	Chapeltown Street, Manchester	70/73[A]	-/-[C]	-/-[C]	Day: Demolitions	A	27	R	T	H	-	D93	-	-	MA08-C-C6

[11] Only 16 properties are forecast to experience noise above the eligibility criteria for noise insulation.

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											
615297	Advent Way, Manchester	55/59[A]	37/41[A]	37/41[A]	Day: Retaining walls construction Evening: Bored tunnel works Night: Bored tunnel works	NA	76	R	T	-	-	-	-	-	
615299	Thomas Telford Basin, Manchester	63/66[A]	-/-[B]	-/-[C]	Day: Highway works	A	8	R	T	H	-	D2	-	-	MA08-C-C6
615301	Pollard Street, Manchester	61/69[A]	-/-[B]	-/-[C]	Day: Highway works	A	121	R	T	H	-	D3	-	-	MA08-C-C11
615302	Isaac Way, Manchester	62/65[A]	37/41[B]	37/41[C]	Day: Demolitions Evening: Bored tunnel works Night: Bored tunnel works	NA	242	R	T	-	-	-	-	-	
615304	John Smeaton Court, Manchester	59/62[A]	-/-[A]	-/-[A]	Day: Highway works	NA	8	R	T	-	-	-	-	-	
615305	Thomas Telford Basin, Manchester	65/68[A]	-/-[A]	-/-[A]	Day: Demolitions	A	18	R	T	-	-	D46	-	-	MA08-C-C6
615308	Aytoun Street, Manchester	43/46[B]	-/-[C]	-/-[C]	Day: Pipe jack works	NA	116	R	T	H	-	-	-	-	

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
615310	John Smeaton Court, Manchester	67/70[A]	30/33[B]	30/33[C]	Day: Metrolink construction Evening: Bored tunnel works Night: Bored tunnel works	A	38	R	T	-	-	D72	-	-	MA08-C-C6
615311	Wharf Close, Manchester	75/78[B]	34/34[C]	34/34[C]	Day: General site works Evening: Station construction Night: Station construction	S	15[12]	R	T	H	-	D93	V	NI	MA08-C-C5
615314	Pollard Street, Manchester	61/69[A]	-/-[B]	-/-[C]	Day: Highway works	A	36	R	T	H	-	D3	-	-	MA08-C-C11
615315	John Smeaton Court, Manchester	56/58[A]	-/31[A]	-/31[A]	Day: Retaining walls construction Evening: Bored tunnel works Night: Bored tunnel works	NA	16	R	T	-	-	-	-	-	

[12] Only nine properties are forecast to experience noise above the eligibility criteria for noise insulation.

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											
615316	Thomas Telford Basin, Manchester	56/58[A]	-/-[A]	-/-[A]	Day: General site works	NA	8	R	T	-	-	-	-	-	
615317	Thomas Telford Basin, Manchester	67/70[A]	-/-[B]	-/-[C]	Day: Demolitions	A	8	R	T	-	-	D69	-	-	MA08-C-C6
615318	John Smeaton Court, Manchester	53/55[A]	-/-[A]	-/-[A]	Day: General site works	NA	6	R	T	-	-	-	-	-	
615319	Store Street, Manchester	69/73[B]	-/-[C]	-/-[C]	Day: Demolitions	A	20	R	T	H	-	D36	V	-	MA08-C-C5
615320	Chapeltown Street, Manchester	70/74[A]	33/37[B]	33/37[C]	Day: Metrolink construction Evening: Bored tunnel works Night: Bored tunnel works	A	38	R	T	H	-	D62	-	-	MA08-C-C6
615321	Thomas Telford Basin, Manchester	58/63[A]	-/-[A]	-/-[A]	Day: Demolitions	NA	10	R	T	-	-	-	-	-	
615322	Pollard Street, Manchester	60/68[A]	-/-[B]	-/-[C]	Day: Highway works	A	16	R	T	-	-	D3	-	-	MA08-C-C11
615323	Isaac Way, Manchester	58/62[A]	-/-[A]	-/-[A]	Day: Retaining walls construction	NA	143	R	T	-	-	-	-	-	

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
615324	Wharf Close, Manchester	74/76[A]	32/32[A]	32/32[B]	Day: General site works Evening: Station construction Night: Station construction	S	21[13]	R	T	-	-	D93	V	NI	MA08-C-C5
615325	William Jessop Court, Manchester	49/51[A]	-/-[A]	-/-[A]	Day: General site works	NA	29	R	T	-	-	-	-	-	
615328	Chapeltown Street, Manchester	77/80[B]	-/-[C]	-/-[C]	Day: Metrolink construction	S	38[14]	R	T	H	-	D48	-	NI	MA08-C-C6
615329	Ducie Street, Manchester	73/76[A]	32/33[A]	32/33[B]	Day: General site works Evening: Station construction Night: Station construction	S	25[15]	R	T	-	-	D93	V	NI	MA08-C-C5

[13] Only six properties are forecast to experience noise above the eligibility criteria for noise insulation.

[14] Only 18 properties are forecast to experience noise above the eligibility criteria for noise insulation.

[15] Only 10 properties are forecast to experience noise above the eligibility criteria for noise insulation.

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											
615332	Ducie Street, Manchester	73/76[A]	32/33[A]	32/33[B]	Day: General site works Evening: Station construction Night: Station construction	S	25[16]	R	T	-	-	D93	V	NI	MA08-C-C5
615333	Jutland Street, Manchester	73/76[A]	32/33[A]	32/33[B]	Day: General site works Evening: Station construction Night: Station construction	S	20[16]	R	T	-	-	D93	V	NI	MA08-C-C5
615336	Pollard Street, Manchester	67/70[A]	-/-[C]	-/-[C]	Day: Metrolink construction	A	63[9]	R	T	H	-	D35	-	-	MA08-C-C11
615338	James Brindley Basin, Manchester	49/54[A]	-/-[B]	-/-[C]	Day: Metrolink construction	NA	34	R	T	-	-	-	-	-	
615339	Jutland Street, Manchester	72/75[A]	-/-[A]	-/-[B]	Day: General site works	A	57	R	T	-	-	D93	V	-	MA08-C-C5

[16] Only 10 properties are forecast to experience noise above the eligibility criteria for noise insulation.

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											
615340	Pollard Street, Manchester	53/56[A]	38/42[A]	38/42[A]	Day: Highway works Evening: Bored tunnel works Night: Bored tunnel works	NA	62	R	T	-	-	-	-	-	
615341	Ducie Street, Manchester	67/70[A]	-/-[B]	-/-[C]	Day: General site works	A	28	R	T	-	-	D65	-	-	MA08-C-C5
615343	Great Ancoats Street, Manchester and committed development (Map Book ref.: MA08/092)	64/67[B]	-/-[C]	-/-[C]	Day: Metrolink construction	NA	43	R	T	H	-	-	-	-	
615344	Dale Street, Manchester	53/58[B]	-/-[C]	-/-[C]	Day: Highway works	NA	64	R	T	H	-	-	-	-	
615348	Great Ancoats Street, Manchester	68/71[C]	-/-[C]	-/-[C]	Day: Metrolink construction	NA	100	R	T	H	-	-	-	-	
615349	Great Ancoats Street, Manchester	69/73[B]	-/32[C]	-/32[C]	Day: Metrolink construction Evening: Bored tunnel works Night: Bored tunnel works	A	100[9]	R	T	H	-	D22	-	-	MA08-C-C9

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											
615351	Brewer Street, Manchester	57/66[A]	-/-[A]	-/-[B]	Day: Pipe jack works	A	117	R	T	-	-	D2	-	-	MA08-C-C3
615352	Hilton Street, Manchester	53/61[A]	-/30[A]	-/30[B]	Day: Pipe jack works Evening: Bored tunnel works Night: Bored tunnel works	NA	201	R	T	-	-	-	-	-	
615353	Spindle Mews, Manchester	63/66[A]	-/-[B]	-/-[C]	Day: Metrolink construction	A	57	R	T	-	-	D6	-	-	MA08-C-C9
615355	Dale Street, Manchester	45/53[B]	-/-[C]	-/-[C]	Day: Highway works	NA	14	R	T	H	-	-	-	-	
615358	Brewer Street, Manchester	53/58[A]	-/30[A]	-/30[B]	Day: Highway works Evening: Bored tunnel works Night: Bored tunnel works	NA	92	R	T	-	-	-	-	-	
615359	Tariff Street, Manchester	46/48[A]	-/-[A]	-/-[B]	Day: General site works	NA	24	R	T	-	-	-	-	-	
615360	Cheetwood House, Dale Street, Manchester and committed development (Map	41/43[C]	-/-[C]	-/-[C]	Day: General site works	NA	16	R	T	H	-	-	-	-	

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
	Book ref.: MA08/222)														
615361	Tariff Street, Manchester	54/56[A]	-/-[A]	-/-[B]	Day: Demolitions	NA	42	R	T	-	-	-	-	-	
615363	Hilton Street, Manchester	45/47[B]	-/-[C]	-/-[C]	Day: Metrolink construction	NA	16	R	T	H	-	-	-	-	
615367	Old Mill Street, Manchester	54/61[A]	34/38[B]	34/38[C]	Day: Metrolink construction Evening: Bored tunnel works Night: Bored tunnel works	NA	101	R	T	H	-	-	-	-	
615369	Vesta Street, Manchester	62/68[A]	35/39[B]	35/39[C]	Day: Metrolink construction Evening: Bored tunnel works Night: Bored tunnel works	A	169	R	T	H	-	D6	-	-	MA08-C-C9
615402	Fairfield Street, Manchester	55/61[C]	-/30[C]	-/30[C]	Day: Pipe jack works Evening: Bored tunnel works Night: Bored tunnel works	NA	100	R	T	H	-	-	-	-	

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
616003	Chapeltown Street, Manchester	72/75[A]	-/-[C]	-/-[C]	Day: Demolitions	A	126	R	T	H	-	D93	V	-	MA08-C-C6
616004	Store Street, Manchester	60/63[A]	-/31[B]	-/31[C]	Day: Pipe jack works Evening: Bored tunnel works Night: Bored tunnel works	NA	374	R	T	-	-	-	-	-	
616007	Ducie Street, Manchester and committed development (Map Book ref.: MA08/098)	76/80[A]	-/-[B]	-/-[C]	Day: Pipe jack works	S	128[17]	R	T	-	-	D11	-	NI	MA08-C-C4
616744	City End (Student accommodation), Hamsell Road, Manchester	53/57[C]	-/30[C]	-/30[C]	Day: Pipe jack works Evening: Bored tunnel works Night: Bored tunnel works	NA	6	R	T	H	-	-	-	-	

[17] Only 18 properties are forecast to experience noise above the eligibility criteria for noise insulation.

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											
616745	City End (Student accommodation), Hamsell Road, Manchester	51/58[A]	-/-[B]	-/-[C]	Day: Pipe jack works	NA	6	R	T	-	-	-	-	-	
616746	City End (Student accommodation), Hamsell Road, Manchester	49/55[A]	-/-[A]	-/-[B]	Day: Pipe jack works	NA	4	R	T	-	-	-	-	-	
616749	Wadeson Road, Manchester	68/72[B]	-/-[C]	-/-[C]	Day: Pipe jack works	A	2	R	T	H	-	D2	-	-	MA08-C-C1
616750	Harehill Close, Manchester	59/64[A]	-/-[C]	-/-[C]	Day: Pipe jack works	NA	5	R	T	H	-	-	-	-	
616751	Wadeson Road, Manchester	67/72[A]	-/-[C]	-/-[C]	Day: Pipe jack works	A	6	R	T	H	-	D4	-	-	MA08-C-C1
616752	Mosscot Walk, Manchester	57/63[A]	-/-[B]	-/-[C]	Day: Pipe jack works	NA	4	R	T	-	-	-	-	-	
616753	Wadeson Road, Manchester	64/69[A]	-/-[B]	-/-[C]	Day: Pipe jack works	A	4	R	T	-	-	D3	-	-	MA08-C-C1
616754	Brownslow Walk, Manchester	60/65[A]	-/-[B]	-/-[C]	Day: Pipe jack works	NA	5	R	T	-	-	-	-	-	
616755	Skerry Close, Manchester	58/63[A]	-/-[B]	-/-[C]	Day: Pipe jack works	NA	6	R	T	-	-	-	-	-	

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
616756	Blackhill Close, Manchester	53/61[A]	-/-[B]	-/-[C]	Day: Pipe jack works	NA	11	R	T	-	-	-	-	-	
616757	Grosvenor Street, Manchester	53/61[A]	-/-[B]	-/-[C]	Day: Pipe jack works	NA	15	R	T	-	-	-	-	-	
616758	Deanwater Close, Manchester	51/59[A]	-/-[A]	-/-[C]	Day: Pipe jack works	NA	14	R	T	-	-	-	-	-	
616759	Hanworth Close, Manchester	52/60[A]	-/-[B]	-/-[C]	Day: Pipe jack works	NA	6	R	T	-	-	-	-	-	
616760	Lockton Close, Manchester	65/70[B]	-/-[C]	-/-[C]	Day: Pipe jack works	NA	11	R	T	H	-	-	-	-	
616761	Lockton Close, Manchester	61/66[B]	-/-[C]	-/-[C]	Day: Pipe jack works	NA	14	R	T	H	-	-	-	-	
616762	Skerry Close, Manchester	50/58[A]	-/-[A]	-/-[B]	Day: Pipe jack works	NA	14	R	T	-	-	-	-	-	
616763	Balsam Close, Manchester	51/55[A]	-/-[A]	-/-[B]	Day: Pipe jack works	NA	12	R	T	-	-	-	-	-	
616764	Maplin Close, Manchester	50/53[A]	-/-[A]	-/-[B]	Day: Pipe jack works	NA	20	R	T	-	-	-	-	-	
616765	Deanwater Close, Manchester	50/56[A]	-/-[A]	-/-[B]	Day: Pipe jack works	NA	13	R	T	-	-	-	-	-	

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
616766	Skerry Close, Manchester	49/54[A]	-/-[A]	-/-[B]	Day: Pipe jack works	NA	20	R	T	-	-	-	-	-	
616767	Hardshaw Close, Manchester	48/51[A]	-/-[A]	-/-[B]	Day: Viaduct construction	NA	35	R	T	-	-	-	-	-	
616768	Haymans Walk, Manchester	50/54[A]	-/-[A]	-/-[B]	Day: Pipe jack works	NA	23	R	T	-	-	-	-	-	
616769	Kincardine Court, Manchester	51/54[A]	-/-[A]	-/-[B]	Day: Pipe jack works	NA	229	R	T	-	-	-	-	-	
616770	Mawson Road, Manchester	50/55[A]	-/-[A]	-/-[B]	Day: Pipe jack works	NA	19	R	T	-	-	-	-	-	
616771	Milnrow Close, Manchester	50/56[A]	-/-[B]	-/-[C]	Day: Pipe jack works	NA	21	R	T	-	-	-	-	-	
616772	Silkin Court, Manchester	55/62[A]	-/30[B]	-/30[C]	Day: Pipe jack works Evening: Bored tunnel works Night: Bored tunnel works	NA	65	R	T	-	-	-	-	-	
616773	Stockland Close, Manchester	49/54[A]	-/-[A]	-/-[B]	Day: Pipe jack works	NA	9	R	T	-	-	-	-	-	

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
616775	Stockland Close, Manchester	47/51[A]	-/-[A]	-/-[B]	Day: Pipe jack works	NA	26	R	T	-	-	-	-	-	
616778	Litcham Close, Manchester	47/51[A]	-/-[C]	-/-[C]	Day: Pipe jack works	NA	11	R	T	H	-	-	-	-	
616779	Flat block on Lamport Close, Manchester	52/55[B]	-/-[C]	-/-[C]	Day: Pipe jack works	NA	65	R	T	H	-	-	-	-	
616780	Lockton Close, Manchester	54/62[A]	-/-[B]	-/-[C]	Day: Pipe jack works	NA	12	R	T	H	-	-	-	-	
616781	Flat block on Lockton Close, Manchester	54/62[B]	-/30[C]	-/30[C]	Day: Pipe jack works Evening: Bored tunnel works Night: Bored tunnel works	NA	65	R	T	H	-	-	-	-	
616782	Penfield Close, Manchester	48/55[B]	-/-[C]	-/-[C]	Day: Pipe jack works	NA	6	R	T	H	-	-	-	-	
616783	Mancroft Walk, Manchester	39/42[A]	-/-[C]	-/-[C]	Day: Pipe jack works	NA	20	R	T	H	-	-	-	-	
616784	Grosvenor Street, Manchester	49/56[A]	-/-[C]	-/-[C]	Day: Pipe jack works	NA	6	R	T	H	-	-	-	-	
616785	Penfield Close, Manchester	46/52[A]	-/-[B]	-/-[C]	Day: Pipe jack works	NA	11	R	T	-	-	-	-	-	

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
616786	Litcham Close, Manchester	50/54[A]	-/-[B]	-/-[C]	Day: Pipe jack works	NA	35	R	T	-	-	-	-	-	
616788	Great Ancoats Street, Manchester	56/60[B]	33/37[C]	33/37[C]	Day: Pipe jack works Evening: Bored tunnel works Night: Bored tunnel works	NA	134	R	T	H	-	-	-	-	
616789	Balsam Close, Manchester	50/53[A]	-/-[A]	-/-[B]	Day: Pipe jack works	NA	20	R	T	-	-	-	-	-	
616794	Cotter Street, Manchester	57/60[A]	30/32[B]	30/32[C]	Day: Viaduct construction Evening: Bored tunnel works Night: Bored tunnel works	NA	62	R	T	-	-	-	-	-	
616802	Piccadilly Point, Berry Street, Manchester	60/64[A]	-/-[B]	-/-[C]	Day: Viaduct construction	NA	68	R	T	-	-	-	-	-	
616803	Liberty Point, Berry Street, Manchester	51/56[A]	-/-[A]	-/-[C]	Day: Demolitions	NA	356	R	T	-	-	-	-	-	

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
616805	Store Street, Manchester	73/78[C]	33/37[C]	33/37[C]	Day: Pipe jack works Evening: Bored tunnel works Night: Bored tunnel works	S	374[18]	R	T	H	-	D3	-	NI	MA08-C-C8
616806	Ducie Street, Manchester	82/86[19] [B]	-/-[C]	-/-[C]	Day: Pipe jack works	S	29[20]	R	T	H	-	D11	-	NI	MA08-C-C5
616814	Great Ancoats Street, Manchester	64/71[C]	-/-[C]	-/-[C]	Day: Pipe jack works	NA	100	R	T	H	-	-	-	-	
616815	Great Ancoats Street, Manchester	65/70[B]	-/-[C]	-/-[C]	Day: Pipe jack works	NA	100	R	T	H	-	-	-	-	
616816	Old Mill Street, Manchester	59/63[B]	33/37[C]	33/37[C]	Day: Pipe jack works Evening: Bored tunnel works Night: Bored tunnel works	NA	101	R	T	H	-	-	-	-	

[18] Approximately half this number classed as a significant effect. Only 64 properties are forecast to experience noise above the eligibility criteria for noise insulation.

[19] This is an overestimate; the actual level would be lower than stated.

[20] Only 20 properties are forecast to experience noise above the eligibility criteria for noise insulation.

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											
616817	Great Ancoats Street, Manchester and committed development (Map Book ref.: MA08/092)	53/58[B]	-/-[C]	-/-[C]	Day: Pipe jack works	NA	43	R	T	H	-	-	-	-	
616818	James Brindley Basin, Manchester	64/69[A]	-/-[B]	-/-[C]	Day: Pipe jack works	A	34[9]	R	T	H	-	D3	-	-	MA08-C-C7
616819	William Jessop Court, Manchester	48/56[A]	-/-[A]	-/-[A]	Day: Pipe jack works	NA	29	R	T	-	-	-	-	-	
616821	New Islington Free School (School), Oldham Way, Manchester	49/51[A]	-/-[A]	-/-[A]	Day: Metrolink construction	NA	1	R	T	-	-	-	-	-	
616822	Julie Twist Properties (Offices), Redhill Street, Manchester	52/55[A]	-/-[C]	-/-[C]	Day: Highway works	NA	1	R	T	H	-	-	-	-	
616823	Army Reserve Centre (Lower Sensitivity Offices), Ardwick Green North, Manchester	63/68[B]	-/31[C]	-/31[C]	Day: Pipe jack works Evening: Bored tunnel works Night: Bored tunnel works	NA	1	R	T	H	-	-	-	-	

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
616867	Malta Street, Manchester	74/76[B]	-/-[C]	-/-[C]	Day: Metrolink construction	S	119[21]	R	T	H	-	D6	-	NI	MA08-C-C12
616868	Lampwick Lane, Manchester	62/69[A]	31/33[B]	31/33[C]	Day: Metrolink construction Evening: Bored tunnel works Night: Bored tunnel works	A	143	R	T	-	-	D5	-	-	MA08-C-C9
616869	Munday Street, Manchester	72/74[A]	36/40[B]	36/40[C]	Day: Metrolink construction Evening: Bored tunnel works Night: Bored tunnel works	A	129	R	T	H	-	D6	-	-	MA08-C-C9
616870	Munday Street, Manchester	59/67[A]	38/42[B]	38/42[C]	Day: Metrolink construction Evening: Bored tunnel works Night: Bored tunnel works	A	129	R	T	-	-	D5	-	-	MA08-C-C9

[21] Only 45 properties are forecast to experience noise above the eligibility criteria for noise insulation.

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											
616871	Munday Street, Manchester	71/73[A]	37/41[C]	37/41[C]	Day: Metrolink construction Evening: Bored tunnel works Night: Bored tunnel works	A	37	R	T	H	-	D6	-	-	MA08-C-C9
616872	Munday Street, Manchester	59/67[A]	37/41[B]	37/41[C]	Day: Metrolink construction Evening: Bored tunnel works Night: Bored tunnel works	A	82	R	T	H	-	D4	-	-	MA08-C-C9
616873	Isaac Way, Manchester	45/48[A]	-/-[A]	-/-[A]	Day: Metrolink construction	NA	143	R	T	-	-	-	-	-	
616876	Mayes Gardens, Manchester	48/55[A]	31/34[A]	31/34[B]	Day: Metrolink construction Evening: Bored tunnel works Night: Bored tunnel works	NA	23	R	T	-	-	-	-	-	
616877	Mayes Gardens, Manchester	47/50[A]	-/-[A]	-/-[A]	Day: Metrolink construction	NA	12	R	T	-	-	-	-	-	
616878	Guest Street, Manchester	41/44[A]	-/-[A]	-/-[A]	Day: Metrolink construction	NA	13	R	T	-	-	-	-	-	

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
616879	Guest Street, Manchester	42/45[A]	-/-[A]	-/-[A]	Day: Metrolink construction	NA	22	R	T	-	-	-	-	-	
616880	Hackleton Close, Manchester	52/55[B]	32/35[C]	32/35[C]	Day: Metrolink construction Evening: Bored tunnel works Night: Bored tunnel works	NA	27	R	T	H	-	-	-	-	
616881	Pollard Street, Manchester	49/55[A]	-/-[B]	-/-[C]	Day: Metrolink construction	NA	20	R	T	-	-	-	-	-	
616882	Coppersmith Road, Manchester	48/51[A]	-/-[B]	-/-[C]	Day: Metrolink construction	NA	9	R	T	-	-	-	-	-	
616883	Tavery Close, Manchester	47/50[B]	-/-[C]	-/-[C]	Day: Demolitions	NA	14	R	T	H	-	-	-	-	
616887	Pollard Street, Manchester	48/52[A]	-/-[A]	-/-[A]	Day: Metrolink construction	NA	62	R	T	-	-	-	-	-	
616888	Union Street, Ardwick	53/56[C]	30/33[C]	30/33[C]	Day: Retaining walls construction Evening: Bored tunnel works Night: Bored tunnel works	NA	5	R	T	H	-	-	-	-	

Assessment location		Impact criteria				Significance criteria									Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
616889	Union Street, Manchester	52/56[C]	31/33[C]	31/33[C]	Day: Retaining walls construction Evening: Bored tunnel works Night: Bored tunnel works	NA	17	R	T	H	-	-	-	-	
616895	Ducie Street, Manchester and committed development (Map Book ref.: MA08/212)	56/58[A]	-/-[C]	-/-[C]	Day: General site works	NA	41	R	T	H	-	-	-	-	
616898	Victoria House, Great Ancoats Street, Manchester and committed development (Map Book ref.: MA08/255)	73/81[C]	30/33[C]	30/33[C]	Day: Highway works Evening: Bored tunnel works Night: Bored tunnel works	S	529[22]	R	T	H	-	D3	-	NI	MA08-C-C10

[22] Only 50 properties are forecast to experience noise above the eligibility criteria for noise insulation.

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											
616899	Mindal House, Bloom Street, Manchester and committed development (Map Book ref.: MA08/342)	39/42[A]	-/-[B]	-/-[C]	Day: Pipe jack works	NA	80	R	T	-	-	-	-	-	
616900	Store Street, Manchester and committed development (Map Book ref.: MA08/361)	58/63[A]	-/-[C]	-/-[C]	Day: Station construction	NA	66	R	T	H	-	-	-	-	
616909	Piercy Street, Manchester	41/44[A]	-/-[A]	-/-[A]	Day: Metrolink construction	NA	18	R	T	-	-	-	-	-	

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

Assessment location		Impact criteria					Significance criteria								Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the façade		Change during month with highest noise level		Construction activity resulting in highest forecast noise levels	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Night 23:00 – 07:00	Day 07:00 – 19:00	Night 23:00 – 07:00										
615188	St. Thomas Conference Centre, Ardwick Green North, Manchester	51/54	-/-	5	-	Day: Retaining walls construction	1	A2	T	-	-	D4	-	-	*
615192	Old School House (Offices), Thirsk Street, Manchester	57/59	-/32	2	-	Day: Retaining walls construction Night: Bored tunnel works	1	A4	T	H	-	-	-	-	$
615194	City View House (Offices), Union Street, Manchester	57/60	31/33	3	-	Day: General site works Night: Bored tunnel works	1	A4	T	H	-	-	-	-	$
615196	Graphite House (Offices), Manor Street, Manchester	57/60	-/31	1	-	Day: Viaduct construction Night: Bored tunnel works	1	A4	T	H	-	-	-	-	$
615218	Sackville Street (Offices), Manchester	44/47	-/-	-	-	Day: Retaining walls construction	1	A4	T	H	-	-	-	-	
615258	The Manchester College, Shena Simon Campus, Chorlton Street Manchester	47/53	-/-	-	-	Day: Highway works	1	A3	T	H	-	-	-	-	

Assessment location		Impact criteria					Significance criteria								Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the façade		Change during month with highest noise level		Construction activity resulting in highest forecast noise levels	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Night 23:00 – 07:00	Day 07:00 – 19:00	Night 23:00 – 07:00										
615263	London Road Fire Station (Hotel), Manchester	73/78	-/-	10	-	Day: Highway works	1	A4	T	H	-	D8	-	-	MA08-C-N8
615268	Monroes Bar Hotel, London Road, Manchester	69/74	-/-	5	-	Day: Highway works	1	A3	T	H	-	D3	-	-	MA08-C-N9
615273	Tower Block Piccadilly Station (Offices), Piccadilly, Manchester	73/76	33/35	20	-	Day: Demolitions Night: Bored tunnel works	1	A4	T	-	-	D95	V	-	MA08-C-N11
615277	3 Piccadilly Place (Education), Manchester and committed development (Map Book ref.: MA08/180)	73/78	-/-	10	-	Day: Highway works	1	A3	T	H	-	D8	-	-	MA08-C-N12
615281	Staycity (Hotel), Piccadilly, Manchester	75/82	-/-	31	-	Day: Station construction	1	A3	T	-	-	D93	V	-	MA08-C-N30
615282	Aeroworks (Offices), Adair Street, Manchester	74/80	31/35	20	-	Day: Viaduct construction Night: Retaining walls construction	1	A4	T	H	-	D93	V	-	MA08-C-N34

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										
615293	Manchester Crown Court, Minshull Street, Manchester	61/67	-/-	4	-	Day: Pipe jack works	1	A2	T	H	-	D2	-	-	*
615298	Holiday Inn Hotel, Aytoun Street, Manchester	63/67	-/-	3	-	Day: Pipe jack works	1	A3	T	H	-	-	-	-	$
615300	Malmaison Hotel, Gore Street, Manchester	76/80	-/-	12	-	Day: Pipe jack works	1	A3	T	H	-	D9	-	-	MA08-C-N17
615303	Native Aparthotel, Ducie Street, Manchester	76/79	35/36	26	-	Day: General site works Night: Station construction	1	A4	T	-	-	D95	V	-	MA08-C-N33
615306	Fabrica (Offices), Great Ancoats Street, Manchester	77/81	-/-	11	-	Day: Highway works	1	A4	T	H	-	D6	-	-	MA08-C-N27
615309	Rodwell Tower (Offices), Piccadilly, Manchester	87/92	-/-	30	-	Day: Pipe jack works	1	A4	T	H	-	D47	V	-	MA08-C-N15
615312	Britannia Hotel, Portland Street, Manchester	43/45	-/-	-	-	Day: General site works	1	A3	T	-	-	-	-	-	
615313	Ibis Hotel, Pollard Street, Manchester	79/81	-/-	10	-	Day: Highway works	1	A3	T	H	-	D4	-	-	MA08-C-N25

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										
615326	La Reserve Aparthotel, Ducie Street, Manchester	72/72	-/-	13	-	Day: Highway works	1	A3	T	-	-	D4	V	-	MA08-C-N32
615327	Westminster House (Education), 11 Portland Street, Manchester and committed development (Map Book ref.: MA08/318)	43/44	-/-	-	-	Day: General site works	1	A3	T	H	-	-	-	-	
615330	Premier Inn, Dale Street, Manchester	70/73	-/-	11	-	Day: Highway works	1	A3	T	H	-	D4	V	-	MA08-C-N31
615334	11 Ducie Street (Offices), Manchester	68/71	-/-	11	-	Day: Demolitions	1	A4	T	H	-	D93	-	-	MA08-C-N19
615335	The Grand Portland and Gardens Hotels, Manchester	40/43	-/-	1	-	Day: Pipe jack works	1	A3	T	-	-	-	-	-	
615337	Abode Manchester (Hotel), Piccadilly, Manchester	60/65	-/-	10	-	Day: Demolitions	1	A3	T	-	-	D73	-	-	MA08-C-N16
615342	Paradise Wharf (Offices), Ducie Street, Manchester	54/56	-/-	2	-	Day: General site works	1	A4	T	-	-	-	-	-	

Assessment location		Impact criteria					Significance criteria								Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the façade		Change during month with highest noise level		Construction activity resulting in highest forecast noise levels	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Night 23:00 – 07:00	Day 07:00 – 19:00	Night 23:00 – 07:00										
615345	Your Smile Clinic (Healthcare), Dale Street, Manchester	61/64	-/-	8	-	Day: Highway works	1	A4	T	-	-	D3	-	-	MA08-C-N18
615347	Piccadilly (Offices), Manchester	54/60	-/-	2	-	Day: Highway works	1	A4	T	H	-	-	-	-	$
615350	Ducie House (Offices), Ducie Street, Manchester	82/86	-/-	22	-	Day: Pipe jack works	1	A4	T	H	-	D11	-	-	MA08-C-N21
615354	Lizard Street (Offices), Manchester	46/53	-/-	-	-	Day: Station construction	1	A4	T	H	-	-	-	-	
615356	Staycity - Northern Quarters Aparthotel, Laystall Street, Manchester and committed development (Map Book ref.: MA08/216)	55/57	-/-	5	-	Day: General site works	1	A3	T	-	-	D60	-	-	MA08-C-N23
615357	Fourways House (Offices), Hilton Street, Manchester	46/48	-/-	6	-	Day: Station construction	1	A4	T	-	-	-	-	-	
615362	Hatters Hostel, Newton Street, Manchester	38/41	-/-	-	-	Day: Metrolink construction	1	A3	T	H	-	-	-	-	

Assessment location		Impact criteria					Significance criteria								Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the façade		Change during month with highest noise level		Construction activity resulting in highest forecast noise levels	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Night 23:00 – 07:00	Day 07:00 – 19:00	Night 23:00 – 07:00										
615364	University of Manchester Pariser Building, Sackville Street, Manchester	37/40	-/-	1	-	Day: Pipe jack works	1	A3	T	-	-	-	-	-	
615365	MSS Tower (University), Sackville Street, Manchester	72/76	-/-	10	-	Day: Pipe jack works	1	A3	T	H	-	D7	-	-	MA08-C-N4
615366	Piccadilly (Hotel), Manchester and committed development (Map Book ref.: MA08/089)	51/57	-/-	1	-	Day: Pipe jack works	1	A3	T	H	-	-	-	-	$
615370	Portland Street (College), Manchester	33/36	-/-	-	-	Day: Pipe jack works	1	A3	T	-	-	-	-	-	
615381	University of Manchester Ferranti Building, Sackville Street Campus, Manchester	36/39	-/-	1	-	Day: Pipe jack works	1	A3	T	-	-	-	-	-	

Assessment location		Impact criteria					Significance criteria								Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the façade		Change during month with highest noise level		Construction activity resulting in highest forecast noise levels	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Night 23:00 – 07:00	Day 07:00 – 19:00	Night 23:00 – 07:00										
615382	University of Manchester The Mill, Sackville Street Campus, Manchester	43/51	-/-	1	-	Day: Pipe jack works	1	A3	T	-	-	-	-	-	
615383	University of Manchester Paper Science Building, Sackville Street Campus, Manchester	40/43	-/-	-	-	Day: Station construction	1	A3	T	-	-	-	-	-	
615384	University of Manchester Morton Lab, Sackville Street Campus, Manchester	76/80	-/-	16	-	Day: Pipe jack works	1	A3	T	H	-	D11	-	-	MA08-C-N3
615385	University of Manchester Renold Building, Altrincham Street, Manchester	44/48	-/-	-	-	Day: Station construction	1	A3	T	H	-	-	-	-	
615386	University of Manchester Barnes Wallis Building, Sackville Street Campus, Manchester	64/69	-/-	7	-	Day: Pipe jack works	1	A3	T	H	-	D5	-	-	MA08-C-N6

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										
615388	University of Manchester Sackville Street Building, Sackville Street, Manchester	45/46	-/-	-	-	Day: General site works	1	A3	T	H	-	-	-	-	
615391	Motel One (Hotel), London Road, Manchester	70/77	-/-	10	-	Day: Highway works	1	A3	T	H	-	D8	-	-	MA08-C-N10
615393	Transport for Greater Manchester (Offices), Piccadilly, Manchester	75/78	-/-	13	-	Day: Metrolink	1	A4	T	H	-	D10	-	-	MA08-C-N13
616504	4 Piccadilly Place (Offices), Manchester	61/65	-/-	1	-	Day: Metrolink	1	A4	T	H	-	-	-	-	$
616507	Manchester Chinese Centre, Ardwick Green, Manchester	55/58	30/32	6	-	Day: Viaduct construction Night: Bored tunnel works	1	A3	T	-	-	D84	-	-	MA08-C-N2
616742	Spirit Studios (Recording studios and classes), Downing Street, Manchester	66/71	-/-	2	-	Day: Pipe jack works	1	A1	T	H	-	-	-	-	$

Assessment location		Impact criteria					Significance criteria								Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the façade		Change during month with highest noise level		Construction activity resulting in highest forecast noise levels	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Night 23:00 – 07:00	Day 07:00 – 19:00	Night 23:00 – 07:00										
616743	Keenan Properties (Office), Ardwick Green South, Manchester	54/60	-/30	-	-	Day: Pipe jack works Night: Bored tunnel works	1	A4	T	H	-	-	-	-	$
616747	Medlock Primary School, Wadeson Road, Manchester	52/54	-/-	1	-	Day: Pipe jack works	1	A3	T	H	-	-	-	-	$
616748	Astra Travel (Offices), Ardwick Green South	50/52	-/-	-	-	Day: Retaining walls construction	1	A4	T	H	-	-	-	-	
616774	Wai Yin Society Centre, Justin Close, Manchester	46/49	-/-	1	-	Day: Pipe jack works	1	A2	T	-	-	-	-	-	
616776	The Salvation Army Manchester Central Corps, Grosvenor St, Manchester	46/48	-/-	-	-	Day: General site works	1	A2	T	H	-	-	-	-	
616777	Build Staff (Office), Grosvenor Street, Manchester	47/50	-/-	1	-	Day: Pipe jack works	1	A4	T	-	-	-	-	-	
616787	Pendulum Hotel, Sackville Street, Manchester	39/44	-/-	-	-	Day: Pipe jack works	1	A3	T	H	-	-	-	-	

Assessment location		Impact criteria					Significance criteria								Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the façade		Change during month with highest noise level		Construction activity resulting in highest forecast noise levels	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Night 23:00 – 07:00	Day 07:00 – 19:00	Night 23:00 – 07:00										
616790	New Islington Medical Practice, Manchester	50/54	-/-	-	-	Day: Metrolink construction	1	A3	T	H	-	-	-	-	$
616791	PHA Model and Casting Management, Tanzaro House (Offices), Ardwick Green, Manchester	48/51	-/30	-	-	Day: General site works Night: Bored tunnel works	1	A4	T	H	-	-	-	-	
616792	Tanzaro House (Offices), Ardwick Green North, Manchester	50/57	-/-	3	-	Day: Pipe jack works	1	A4	T	-	-	-	-	-	
616793	TCA Showroom (Office), Ardwick Green North, Manchester	45/50	-/-	1	-	Day: Pipe jack works	1	A4	T	-	-	-	-	-	
616795	A G I Solicitors (Office), Ardwick Green North, Manchester	49/52	-/-	1	-	Day: Pipe jack works	1	A4	T	-	-	-	-	-	
616796	Kiss the Light (Office), Ducie Street, Manchester	54/62	-/-	2	-	Day: Pipe jack works	1	A4	T	H	-	-	-	-	$

Assessment location		Impact criteria					Significance criteria								Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the façade		Change during month with highest noise level		Construction activity resulting in highest forecast noise levels	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Night 23:00 – 07:00	Day 07:00 – 19:00	Night 23:00 – 07:00										
616797	Eternal Life Sanctuary (Church), Lomax Street, Manchester	43/49	-/-	-	-	Day: Pipe jack works	1	A2	T	H	-	-	-	-	
616798	USE (Offices), Manchester	50/53	-/30	1	-	Day: Pipe jack works Night: Bored tunnel works	1	A4	T	H	-	-	-	-	
616800	Bainbridge House (Office), London Road, Manchester	56/63	-/-	1	-	Day: Pipe jack works	1	A4	T	H	-	-	-	-	$
616801	Macdonald Hotel, London Road, Manchester and Committed Development (Map Book ref.: MA08/399)	71/75	-/-	9	-	Day: Pipe jack works	1	A3	T	H	-	D5	-	-	MA08-C-N7
616804	DoubleTree by Hilton Hotel, Piccadilly Place, Manchester	76/80	-/-	15	-	Day: Pipe jack works	1	A3	T	H	-	D11	-	-	MA08-C-N14
616807	Paradise Wharf (Offices), Ducie Street, Manchester	64/69	-/-	10	-	Day: Pipe jack works	1	A4	T	-	-	D7	-	-	MA08-C-N22

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										
616809	Dakota Manchester (Hotel), Ducie Street, Manchester	73/76	-/-	17	-	Day: Pipe jack works	1	A3	T	-	-	D11	-	-	MA08-C-N20
616820	Staycity - Northern Quarters Aparthotel, Laystall Street, Manchester and committed development (Map Book ref.: MA08/216)	56/63	-/32	2	-	Day: Pipe jack works Night: Bored tunnel works	1	A3	T	H	-	-	-	-	
616821	New Islington Free School (School), Oldham Way, Manchester	49/51	-/-	5	-	Day: Metrolink construction	1	A3	T	-	-	-	-	-	
616822	Julie Twist Properties (Offices), Redhill Street, Manchester	52/55	-/-	1	-	Day: Highway works	1	A4	T	H	-	-	-	-	
616823	Army Reserve Centre (Lower Sensitivity Offices), Ardwick Green North, Manchester	63/68	-/31	4	-	Day: Pipe jack works Night: Bored tunnel works	1	A4	T	H	-	-	-	-	

Assessment location		Impact criteria					Significance criteria								Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the façade		Change during month with highest noise level		Construction activity resulting in highest forecast noise levels	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Night 23:00 – 07:00	Day 07:00 – 19:00	Night 23:00 – 07:00										
616860	University of Manchester Moffat Building, Sackville Street Campus, Manchester	69/73	-/-	10	-	Day: Pipe jack works	1	A3	T	H	-	D7	-	-	MA08-C-N5
616874	St. Anne's RC Primary School, Carruthers Street, Manchester	51/57	35/38	4	-	Day: Metrolink construction Night: Bored tunnel works	1	A3	T	-	-	D5	-	-	MA08-C-N28
616875	St. Anne's Presbytery, Carruthers Street, Manchester	53/56	-/-	4	-	Day: Retaining walls construction	1	A2	T	-	-	D18	-	-	MA08-C-N29
616891	Westway Nissan (Lower Sensitivity Offices), Chancellor Lane, Manchester	74/78	34/37	16	-	Day: Retaining walls construction Night: Bored tunnel works	1	A4	T	H	-	D61	-	-	MA08-C-N1
616894	Dale House, Dale Street, Manchester and committed development (Map Book ref.: MA08/219)	38/40	-/-	-	-	Day: Pipe jack works	1	A4	T	-	-	-	-	-	

Assessment location		Impact criteria					Significance criteria								Significant effect
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the façade		Change during month with highest noise level		Construction activity resulting in highest forecast noise levels	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Night 23:00 – 07:00	Day 07:00 – 19:00	Night 23:00 – 07:00										
616896	Adair Street (Hotel), Manchester and committed development (Map Book ref.: MA08/260)	79/82	-/-	15	-	Day: Highway works	1	A3	T	H	-	D6	-	-	MA08-C-N24
616897	Indemnity House (Education), Chatham Street, Manchester	38/42	-/-	-	-	Day: Pipe jack works	1	A3	T	-	-	-	-	-	
616910	Pollard Street (Offices), Manchester and committed development (Map Book ref.: MA08/402)	78/79	-/-	17	-	Day: Metrolink construction	1	A4	T	H	-	D7	-	-	MA08-C-N26

Airborne sound: indirect effects

4.2.10 Construction road traffic associated with the construction phases of the Proposed Scheme would generate airborne noise. Based upon traffic information for the Proposed Scheme, the change in traffic noise level at a reference distance of 10m from the edge of the nearside carriageway for a given road has been predicted. Data have been produced for a typical month during the construction period and for a worst-case month during the construction period. The results for potentially significant road links are presented in Table 8.

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

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

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

Table 8: Assessment of construction traffic noise levels

Road name	Portion of road affected	Number of properties affected (approx.)	Daytime traffic sound levels $L_{Aeq,16hour}$ dB			Change compared to current traffic sound level (dB)		Combined impact	Significant effect
			Without the Proposed Scheme (2030)	Typical month during construction	Peak month during construction	Typical month during construction	Peak month during construction		
Travis Street/ Adair Street	Between Sheffield Street and A665 Great Ancoats Street	R: 0 (0) NR: 1	61.2	64.7	66.2	3	5.0	O, V	MA08-C-N34
Chapeltown Street and Sparkle Street	Between Store Street and the A665 Great Ancoats Street	R: 148(148) NR: 0	57.2	55.7	60.8	-1.2	3.6	O, V	MA08-C-C6

4.2.12 In addition, the following non-residential property is likely to be affected by changes in traffic noise: Aeroworks (office), which is located adjacent to Adair Street.

Airborne sound levels used in other assessments

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

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

Assessment location ID		Impact information					Discipline					
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the façade		Change during month with highest noise level		Construction activity resulting in highest forecast noise levels	Agriculture	Communities	Socio-economic	Ecology	Heritage	Landscape
		Day 07:00 – 19:00	Night 23:00 – 07:00	Day 07:00 – 19:00	Night 23:00 – 07:00							
No additional assessment locations to inform the agriculture, communities, socio-economic, ecology, historic environment and landscape and visual assessments are identified in this area												

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