In Parliament – Session 2022 - 2023

HS2

High Speed Rail (Crewe – Manchester)

Supplementary Environmental Statement 2 and Additional Provision 2 Environmental Statement

Volume 5: Appendix SV-002-00000

Sound, noise and vibration

Baseline and construction sound, noise and vibration report
MA01: Hough to Walley's Green
MA02: Wimboldsley to Lostock Gralam
MA03: Pickmere to Agden and Hulseheath
MA06: Hulseheath to Manchester Airport
MA07: Davenport Green to Ardwick
MA08: Manchester Piccadilly Station

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Department for Transport

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

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1.1 Structure of this appendix

1.1.1 This report is an appendix to the sound, noise and vibration assessment which forms part of Volume 5 of the Supplementary Environmental Statement 2 (SES2) and Additional Provision 2 Environmental Statement (AP2 ES).

1.1.2 This appendix provides details of changes to the baseline and construction sound, noise and vibration assessment since the production of the High Speed Two (HS2) High Speed Rail (Crewe – Manchester) Environmental Statement (ES) published in 2022[1] (the main ES) and the Supplementary Environmental Statement 1 (SES1) and Additional Provision 1 Environmental Statement (AP1 ES) also published in 2022[2].

1.1.3 This report should be read in conjunction with Volume 5, Appendices: SV-001-00000[3] and SV-002-0MA01[4] to SV-002-0MA03[4] and SV-002-0MA06[4] to SV-002-0MA08[4] which accompanied the main ES, and the Volume 5, Appendix: SV-002-00000[5] which accompanied the SES1 and AP1 ES.

1.1.4 This report covers the following community areas (CA):

- Hough to Walley's Green (MA01);
- Wimboldsley to Lostock Gralam (MA02);
- Pickmere to Agden and Hulseheath (MA03);
- Hulseheath to Manchester Airport (MA06);

[1] High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement.* Available online at: https://www.gov.uk/government/collections/hs2-phase2b-crewe-manchester-environmental-statement.

[2] High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Supplementary Environmental Statement 1 and Additional Provision 1 Environmental Statement*. Available online at: https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-supplementary-environmental-statement-1-and-additional-provision-1-environmental-statement.

[3] High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement, Sound, noise and vibration methodology, assumptions and assessment*, Volume 5, Appendix: SV-001-00000. Available online at: https://www.gov.uk/government/collections/hs2-phase2b-crewe-manchester-environmental-statement.

[4] High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement, Sound, noise and vibration report, Volume 5*, Appendix: SV-002-0MA01 to SV-002-0MA03 and SV-002-0MA06 to SV-002-0MA08. Available online at: https://www.gov.uk/government/collections/hs2-phase2b-crewe-manchester-environmental-statement.

[5] High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Supplementary Environmental Statement 1 and Additional Provision 1 Environmental Statement, Sound, noise and vibration report*, Volume 5, Appendix: SV-002-00000. Available online at: https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-supplementary-environmental-statement-1-and-additional-provision-1-environmental-statement.

- Davenport Green to Ardwick (MA07); and
- Manchester Piccadilly Station (MA08).

1.1.5 There are no changes to the effects from construction activities in the Broomedge to Glazebrook area (MA04) and the Risley to Bamfurlong area (MA05) reported in the SES1 and AP1 ES.

1.1.6 Maps relevant to this appendix are contained in the SES2 and AP2 ES Volume 5 Sound, noise and vibration Map Book: Map Series SV-03 – Construction Airborne Noise and Vibration Likely Significant Effects.

1.1.7 The SES2 and AP2 ES sound, noise and vibration assessment is detailed in the:

- SES2 and AP2 ES Volume 2, Community Area reports;
- SES2 and AP2 ES Volume 5, Appendix: SV-002-00000 (this report); and
- SES2 and AP2 ES Volume 5, Appendix: SV-003-00000.

1.1.8 The need for a number of corrections to the contents of the main ES and SES1 and AP1 ES have been identified. These are set out in report: Corrections to Volume 5 of the January 2022 Environmental Statement and the July 2022 Supplementary Environmental Statement 1 and Additional Provision 1 Environmental Statement, see SES2 and AP2 ES Volume 5, Appendix: CT-009-00000.

1.1.9 In order to differentiate between the original scheme and the subsequent changes, the following terms are used:

- 'the original scheme' – the Bill scheme submitted to Parliament in 2022, which was assessed in the main ES;
- 'the SES1 scheme' – the original scheme with any changes described in SES1 that are within the existing powers of the Bill;
- 'the AP1 revised scheme' – the original scheme as amended by SES1 changes and AP1 amendments;
- 'the SES2 scheme' – the original scheme with any changes described in SES1 (submitted in July 2022) and the SES2; and
- 'the AP2 revised scheme' – the original scheme as amended by SES1 and SES2 changes (as relevant) and AP2 amendments.

1.2 Scope of the assessment

1.2.1 This assessment is split into two parts for each community area and presents:

- Part 1 SES2:
  - the baseline sound, noise and vibration;
  - construction sound, noise and vibration where materially altered; and

- Part 2 AP2 ES:
  - construction sound, noise and vibration where materially altered.

1.3 Methodology, data sources, assumptions and limitations

1.3.1 The assessment scope, key assumptions and limitations are as set out in the main ES Environmental Impact Assessment (EIA) Scope and Methodology Report (SMR)[6].

1.3.2 The following SES2 changes have the potential to lead to new or different likely significant construction noise and/or vibration effects from those assessed in the main ES:

- MA01, MA02, MA03, MA06, MA07, MA08: additional environmental baseline information;
- MA01, MA02, MA03, MA06, MA07, MA08: changes to the construction design programme; and
- MA08: Change to requirement/assessment assumption for the demolition of Gateway House (SES2-008-005).

1.3.3 In some cases, these SES2 changes and AP2 amendments have resulted in a change in traffic flow on roads within the relevant community area. The in-combination effects of SES2 changes and AP2 amendments are presented in the SES2 section.

1.3.4 The following AP2 amendments have the potential to lead to new or different likely significant construction noise and/or vibration effects from those assessed in the main ES:

- MA01: Additional land temporarily required for modifications to the B5076 Bradfield Road and Parkers Road junction (AP2-001-001);
- MA01: Additional land temporarily required for modifications to the A533 Old Mill Road and Congleton Road junction (AP2-001-003);
- MA02: Additional land temporarily required for modifications to the A54 St Michael's Way, A533 Leadsmithy Street and A54 Kinderton Street junction (AP2-002-001);
- MA02: Additional land permanently required for modifications to the A559 Manchester Road, A559 Hall Lane and Station Road junction (AP2-002-003);
- MA02: Additional land temporarily required for modifications to the A559 Manchester Road and Stubbs Lane junction (AP2-002-005);
- MA06: Additional land permanently required to reconfigure M56 Junction 6 (AP2-006-014);

[6] High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement, Environmental Impact Assessment Scope and Methodology Report,* Volume 5, Appendix: CT-001-00001. Available online at: https://www.gov.uk/government/collections/hs2-phase2b-crewe-manchester-environmental-statement.

- MA06: Additional land permanently required for modifications to Water Framework Directive (WFD) mitigation for Timperley Brook (AP2-006-018);
- MA07: Change to Bill powers required for modifications to Manchester Tunnel Altrincham Road vent shaft (AP2-007-002);
- MA07: Additional land required for the relocation of vent shaft and headhouse from Palatine Road to the Hollies (AP2-007-003);
- MA07: Additional land permanently required for the diversion of Blackbrook Culvert (AP2-007-006); and
- MA08: Additional land temporarily required for the diversion of Travis Street sewer via Ducie Street with a new compound within Ducie Street and the A665 Great Ancoats Street junction (AP2-008-006).

1.3.5 In some cases, these SES2 changes and AP2 amendments have resulted in a change in traffic flow on roads within the relevant community area. The in-combination effects of SES2 changes and AP2 amendments are presented in the AP2 ES section.

1.3.6 An assessment of these changes and amendments is presented in this appendix. Details of the standard methodology used for determining significance of effects for sound, noise and vibration are presented in the main ES Volume 5, Appendix: SV-001-00000[7].

Evaluation of impacts and effects

1.3.7 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 SES2 scheme and AP2 revised scheme.

1.3.8 Indirect effects arising from temporary changes in traffic patterns on the existing road network as a consequence of constructing the SES2 scheme and AP2 revised scheme are reported where they are likely to occur within the study area as defined in the main ES Volume 5, Appendix: SV-001-00000.

1.3.9 In undertaking the assessment of sound, noise and vibration, consistent with the EIA Directive and planning practice on noise a differentiation between impacts, effects, adverse effects and significant effects is made. Further information is provided in the main ES Volume 5, Appendix: SV-001-00000.

1.3.10 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

[7] High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement*, *Sound, noise and vibration methodology assumptions and assessment*, Volume 5, Appendix: SV-001-00000. Available online at: https://www.gov.uk/government/collections/hs2-phase2b-crewe-manchester-environmental-statement.

assessment locations employed in this assessment are presented in the SES2 and AP2 ES Volume 5, Sound, noise and vibration Map Book: Map Series SV-03.

1.3.11 Due to the low level and short duration (generally a matter of days) of tunnel boring[8], ground-borne noise and vibration from tunnel boring machines will not result in significant effects on health and quality of life. There are no new or different likely significant effects to those reported in the main ES as a result of ground-borne noise and vibration from tunnel boring.

[8] High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement, Environmental Impact Assessment Scope and Methodology Report,* Volume 5, Appendix: CT-001-00001. Available online at: https://www.gov.uk/government/collections/hs2-phase2b-crewe-manchester-environmental-statement.

2 Community area assessments

2.1 Hough to Walley's Green (MA01)

Part 1: Supplementary Environmental Statement 2

Baseline

Existing acoustic environment

2.1.1 Road traffic information, such as flows and speeds, is used to determine baseline sound levels. Additional road traffic information has been obtained for the SES2 scheme and AP2 revised scheme. Where relevant, this road traffic information has been used to update the existing baseline sound modelling.

2.1.2 There are AP2 amendments which involve works close to properties which were not included within the main ES. The additional baseline sound levels for these properties are presented in Table 1.

Existing baseline data collection methodology

2.1.3 The baseline collection methodology as outlined in the main ES Volume 5, Appendix: SV-001-00000 is not required to be modified by the SES2 changes.

Existing baseline sound measurement locations

2.1.4 No additional baseline sound measurement locations were identified as required by the design changes identified in the SES2 scheme.

Existing baseline sound modelling

2.1.5 Road traffic information, such as flows and speeds, is used to determine the baseline sound levels. Additional road traffic information has been obtained for the SES2 scheme and AP2 revised scheme. Where relevant, this road traffic information has been used to update the existing baseline sound modelling.

Future baseline methodology

2.1.6 No changes to the future baseline methodology were required by the design changes identified in the SES2 scheme though additional road traffic information has been used to update the future baseline sound modelling.

Baseline sound levels

2.1.7 Baseline sound levels which have been updated for the SES2 scheme are presented for assessment locations 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).

2.1.8 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 the main ES 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.

2.1.9 For all other assessment locations not presented in Table 1, the baseline sound levels used in the original scheme remain relevant based on the changes identified in the SES2 scheme.

Table 1: MA01 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 (2039)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
611034	Ernest Cope Road, Crewe	-	62	58	53	61	53	58	63	3,A,i,b
611035	Elmstead Crescent, Crewe	-	63	59	55	62	55	60	65	3,A,i,b
611036	Ernest Cope Road, Crewe	-	60	56	52	59	52	57	62	3,A,i,b
611037	Bradfield Road, Crewe	-	49	45	40	48	41	45	51	3,A,i,b
611038	Douglas Forrest Close, Crewe	-	50	46	42	49	42	47	52	3,A,i,b
611039	Bromley Close, Crewe	-	48	44	40	48	40	45	52	3,A,i,b
611040	Beckford Close, Crewe	-	53	49	45	53	45	50	55	3,A,i,b
611041	Higher Croft Drive, Crewe	-	44	40	36	43	36	41	54	3,A,i,b
611042	Farmleigh Drive, Crewe	-	47	43	39	46	39	44	50	3,A,i,b
611043	Farmleigh Drive, Crewe	-	50	46	42	50	42	47	52	3,A,i,b
611044	Farmleigh Drive, Crewe	-	44	40	36	43	36	41	51	3,A,i,b
611045	Leighton Academy and Nursery (School)	-	44	40	36	42	34	39	50	3,A,i,b
611046	Turner Close, Crewe	-	51	47	42	50	43	48	53	3,A,i,b
611047	Barrows Close, Crewe	-	54	50	46	54	46	51	56	3,A,i,b
611048	Ernest Cope Road, Crewe	-	62	58	54	62	54	59	64	3,A,i,b
611049	Manor Farm Drive, Crewe	-	63	59	55	62	55	60	65	3,A,i,b
611050	Higher Croft Drive, Crewe	-	44	40	36	43	36	41	51	3,A,i,b
611051	Philip Taylor Drive, Crewe	-	42	38	34	42	35	39	54	3,A,i,b

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2039)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
611052	Wades Field Place, Crewe	-	43	39	35	43	36	41	52	3,A,i,b
611053	Becconsall Drive, Crewe	-	59	55	51	59	52	57	62	3,A,i,b
611054	Verdin Court, Crewe	-	49	45	41	50	42	47	55	3,A,i,b
611055	Becconshall Drive, Crewe	-	49	45	41	49	41	46	54	3,A,i,b
611056	Priory Close, Crewe	-	48	44	39	47	40	45	53	3,A,i,b
611074	Bradfield Road, Crewe	-	67	63	58	66	59	64	69	3,A,i,b
611075	Becconsall Drive, Crewe	-	61	57	53	61	53	58	63	3,A,i,b
611077	Barrows Close, Crewe	-	62	58	54	61	54	59	64	3,A,i,b
611078	Hesketh Croft, Crewe	-	44	40	36	44	37	41	52	3,A,i,b
611079	Lawford Close, Crewe	-	61	57	52	60	53	58	63	3,A,i,b
611080	Becconshall Drive, Crewe	-	55	51	46	55	47	52	57	3,A,i,b
611081	Lawford Close, Crewe	-	58	54	50	58	51	56	61	3,A,i,b
611082	Barnfield Close, Crewe	-	62	58	53	62	54	59	64	3,A,i,b
611101	Park House Cottage, Sandbach	-	55	51	47	57	50	55	60	3,A,i,b
611102	Henshall Drive, Sandbach	-	59	55	51	60	52	57	62	3,A,i,b
611103	Congleton Road, Sandbach	-	66	62	58	67	59	64	69	3,A,i,b
611104	Congleton Road, Sandbach	-	58	54	50	59	51	56	61	3,A,i,b
611105	Gatekeeper Close, Sandbach	-	62	58	54	62	54	59	64	3,A,i,b
611106	Radbroke Close, Sandbach	-	51	47	42	52	44	49	54	3,A,i,b

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2039)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
611107	Congleton Road, Sandbach	-	64	60	56	64	57	62	67	3,A,i,b
611108	Henshall Drive, Sandbach	-	49	45	41	51	43	48	53	3,A,i,b
611109	Radbroke Close, Sandbach	-	51	47	42	52	44	49	54	3,A,i,b
611110	Radbroke Close, Sandbach	-	57	53	49	58	50	55	60	3,A,i,b
611111	Swettenham Close, Sandbach	-	56	52	48	56	49	54	59	3,A,i,b
611112	Park House Drive, Sandbach	-	48	44	40	50	43	48	53	3,A,i,b
611113	Doddington Drive, Sandbach	-	47	43	39	49	41	46	51	3,A,i,b
611114	Filter Bed Way, Sandbach	-	61	57	53	61	54	59	64	3,A,i,b
611115	Holly Blue Road, Sandbach	-	51	47	43	53	46	51	56	3,A,i,b
611116	Filter Bed Way, Sandbach	-	49	45	41	51	44	49	54	3,A,i,b
611117	Grayling Road, Sandbach	-	47	43	38	48	41	46	51	3,A,i,b
611118	Comma Road, Sandbach	-	62	58	54	62	54	59	64	3,A,i,b
611119	Alderley Close, Sandbach	-	57	53	49	57	50	55	60	3,A,i,b
611120	Radbroke Close, Sandbach	-	49	45	41	51	43	48	53	3,A,i,b
611121	Congleton Road, Sandbach	-	48	44	40	50	42	47	52	3,A,i,b
611122	Congleton Road, Sandbach	-	63	59	55	64	56	61	66	3,A,i,b
611123	Monarch Place, Sandbach	-	64	60	56	64	57	62	67	3,A,i,b
611124	Holly Blue Road, Sandbach	-	46	42	38	48	40	45	50	3,A,i,b

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2039)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
611220	Park House Care Home, Congleton Road, Sandbach	-	59	55	51	60	52	57	62	3,A,i,b
611228	Barrows Close, Crewe	-	52	48	44	52	44	49	54	3,A,i,b
611229	Cygnet Nield House (Hospital), Bradfield Road, Crewe	-	56	53	48	56	48	53	58	3,A,i,b

Table 2: Data source coding key

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

Construction

Effects during construction

Introduction

2.1.10 The assessment is reported first for ground-borne vibration and then for airborne sound. Under each of these headings, the results of the quantitative identification of impacts, effects and significant effects are presented. The significant effects and the evidence used to support these conclusions are presented in the SES2 and AP2 ES Volume 2, Community Area report: Hough to Walley's Green (MA01).

Avoidance and mitigation measures

2.1.11 The avoidance and mitigation measures are set out as updated by the SES2 and AP2 ES Volume 2, Community Area report Hough to Walley's Green (MA01).

Identification of impacts and effects

2.1.12 Assessment locations defined for the quantitative assessment of construction impacts are shown on SES2 and AP2 ES Volume 5, Sound, noise and vibration Map Book: Map Series SV-03.

Ground-borne sound and vibration

2.1.13 The SES2 changes do not change the likely significant ground-borne sound and vibration effects identified in the main ES.

Airborne sound: direct impacts and effects

2.1.14 The SES2 changes do not change the likely significant effects due to airborne sound identified in the main ES.

Airborne sound levels used in other assessments

2.1.15 There is no change in the airborne sound levels used in other assessments compared to the main ES or, where relevant, the SES2 and AP2 ES.

Part 2: Additional Provision 2 Environmental Statement

Construction

Effects during construction

Introduction

2.1.16 The assessment is reported first for ground-borne vibration and then for airborne sound. Under each of these headings, the results of the quantitative identification of impacts, effects and significant effects are presented. The significant effects and the evidence used to support these conclusions are presented in the SES2 and AP2 ES Volume 2, Community Area report: Hough to Walley's Green (MA01).

Avoidance and mitigation measures

2.1.17 The avoidance and mitigation measures are set out in the main ES Volume 2, Community Area report: Hough to Walley's Green (MA01), Section 13.

Identification of impacts and effects

2.1.18 Assessment locations defined for the quantitative assessment of construction impacts are shown on SES2 and AP2 ES, Volume 5, Sound, noise and vibration Map Book: Map Series SV-03.

2.1.19 For each assessment location, the assessment results are presented in Table 4. Explanation of the information in is provided in Table 4 the main ES 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 SES2 scheme and AP2 revised 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 SES2 scheme and AP2 revised scheme exceed the screening criteria in the SMR Section 18.
S	Sound levels from the SES2 scheme and AP2 revised 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 SES2 scheme and AP2 revised scheme do not exceed LOAEL, therefore generally no adverse effect.
R	Type of receptor – residential.
A1 – A4	Type of receptor (airborne sound) – (A1) large and small auditoria; concert halls, sound recording and broadcast studios and theatres, (A2) places of meeting for religious worship, courts, cinemas, lecture theatres, museums and small auditoria or halls, (A3) schools; colleges; hospitals, hotels and libraries, (A4) offices and amenity spaces.
V1 – V4	Type of receptor (ground-borne vibration) – (V1) vibration sensitive research and manufacturing; hospitals with vibration sensitive equipment/operations; universities with vibration sensitive 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, Community Area reports) 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

Symbol	Explanation
	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 of the main ES.
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: on-site 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 of the main ES.
TR	Mitigation effect – identified as likely to qualify for temporary rehousing under the draft CoCP.

Ground-borne sound and vibration

2.1.20 There is no change in the ground-borne sound, noise and vibration compared to the main ES or, where relevant, the SES2.

Airborne sound: direct impacts and effects

2.1.21 Activities associated with the construction phases of the AP2 revised scheme will generate airborne sound. 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.

2.1.22 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.

2.1.23 The results, impact criteria and significance criteria for the assessment of the AP2 revised scheme at residential and non-residential receptors are presented in Table 4 and Table 5. Explanation of the information within Table 4 and Table 5 is provided in Volume 5, Appendix: SV-001-00000 of the main ES, with the additional notes presented in Table 3.

2.1.24 The amendments responsible for the change in construction noise effect at the specific assessment locations reported in the following tables, are identified in the associated footnotes.

Table 4: MA01 Assessment of construction noise at residential receptors (AP2 revised scheme)

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	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined	Mitigation	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
611034	Ernest Cope Road, Crewe	72/73[B]	35/35[C]	35/35[C]	Day: Highway works Evening: General site works Night: General site works[9]	A	7	R	T	H	-	D16	-	-	MA01-C-C16[10]
611035	Elmstead Crescent, Crewe	66/68[B]	31/32[C]	31/32[C]	Day: Highway works Evening: General site works Night: General site works[9]	NA	12	R	T	H	-	-	-	-	-
611036	Ernest Cope Road, Crewe	68/70[B]	-/-[C]	-/-[C]	Day: Highway works	A	8	R	T	H	-	D16	-	-	MA01-C-C16[10,11]
611037	Bradfield Road, Crewe	58/59[A]	-/-[A]	-/-[B]	Day: Highway works	NA	11	R	T	-	-	-	-	-	-
611038	Douglas Forrest Close, Crewe	61/63[A]	-/-[A]	-/-[B]	Day: Highway works	NA	14	R	T	-	-	-	-	-	-
611039	Bromley Close, Crewe	57/59[A]	35/37[A]	35/37[B]	Day: Highway works Evening: General site works	NA	34	R	T	-	-	-	-	-	-

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

[10] Likely significant effect added at Barrows Green (as a result of junction modifications to the B5076 Bradfield Road and Parkers Road junction, Crewe (AP2-001-001)).

[11] This receptor has been identified as a significant effect on a precautionary basis due to the increased uncertainty of the baseline in this area.

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	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined	Mitigation	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
					Night: General site works[9]										
611040	Beckford Close, Crewe	63/64[A]	33/35[A]	33/35[C]	Day: Highway works Evening: General site works Night: General site works[9]	NA	13	R	T	-	-	-	-	-	-
611041	Higher Croft Drive, Crewe	49/55[A]	34/36[A]	34/36[A]	Day: Highway works Evening: General site works Night: General site works[9]	NA	15	R	T	-	-	-	-	-	-
611042	Farmleigh Drive, Crewe	52/57[A]	33/35[A]	33/35[A]	Day: Highway works Evening: General site works Night: General site works[9]	NA	42	R	T	-	-	-	-	-	-
611043	Farmleigh Drive, Crewe	47/52[A]	35/37[A]	35/37[B]	Day: Highway works Evening: General site works Night: General site works[9]	NA	32	R	T	-	-	-	-	-	-
611044	Farmleigh Drive, Crewe	46/50[A]	34/36[A]	34/36[A]	Day: Highway works Evening: General site works Night: General site works[9]	NA	60	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	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined	Mitigation	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
611046	Turner Close, Crewe	46/49[A]	35/37[A]	35/37[B]	Day: General site works Evening: General site works Night: General site works[9]	NA	47	R	T	-	-	-	-	-	-
611047	Barrows Close, Crewe	65/66[A]	31/33[B]	31/33[C]	Day: Highway works Evening: General site works Night: General site works[9]	A	1	R	T	-	-	D9	-	-	MA01-C-C16[10]
611048	Ernest Cope Road, Crewe	60/61[B]	34/36[C]	34/36[C]	Day: Highway works Evening: General site works Night: General site works[9]	NA	9	R	T	H	-	-	-	-	-
611049	Manor Farm Drive, Crewe	46/51[B]	32/34[C]	32/34[C]	Day: Highway works Evening: General site works Night: General site works[9]	NA	21	R	T	H	-	-	-	-	-
611050	Higher Croft Drive, Crewe	53/54[A]	-/-[A]	-/-[A]	Day: Highway works	NA	45	R	T	-	-	-	-	-	-
611051	Philip Taylor Drive, Crewe	47/51[A]	36/38[A]	36/38[A]	Day: Retaining walls construction Evening: General site works	NA	91	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	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined	Mitigation	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
					Night: General site works[9]										
611052	Wades Field Place, Crewe	43/48[A]	33/35[A]	33/35[A]	Day: Highway works Evening: General site works Night: General site works	NA	27	R	T	-	-	-	-	-	-
611053	Becconsall Drive, Crewe	59/61[A]	35/37[C]	35/37[C]	Day: Highway works Evening: General site works Night: General site works[9]	NA	26	R	T	H	-	-	-	-	-
611054	Verdin Court, Crewe	45/49[A]	34/36[A]	34/36[B]	Day: Earthworks Evening: General site works Night: General site works[9]	NA	47	R	T	-	-	-	-	-	-
611055	Becconshall Drive, Crewe	51/57[A]	36/38[A]	36/38[B]	Day: Highway works Evening: General site works Night: General site works[9]	NA	54	R	T	-	-	-	-	-	-
611056	Priory Close, Crewe	45/49[A]	33/35[A]	33/35[A]	Day: Highway works Evening: General site works Night: General site works[9]	NA	55	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	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined	Mitigation	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
611074	Bradfield Road, Crewe	58/59[C]	-/-[C]	-/-[C]	Day: Highway works	NA	7	R	T	H	-	-	-	-	-
611075	Becconsall Drive, Crewe	67/68[B]	32/33[C]	32/33[C]	Day: Highway works Evening: General site works Night: General site works[9]	A	5	R	T	H	-	D11	-	-	MA01-C-C16[10,11]
611077	Barrows Close, Crewe	71/73[B]	35/37[C]	35/37[C]	Day: Highway works Evening: General site works Night: General site works[9]	A	9	R	T	H	-	D11	-	-	MA01-C-C16[10]
611078	Hesketh Croft, Crewe	44/50[A]	-/30[A]	-/30[A]	Day: Highway works Evening: General site works Night: General site works[9]	NA	57	R	T	-	-	-	-	-	-
611079	Lawford Close, Crewe	70/71[B]	33/34[C]	33/34[C]	Day: Highway works Evening: General site works Night: General site works[9]	A	5	R	T	H	-	D9	-	-	MA01-C-C16[10]
611080	Becconshall Drive, Crewe	50/56[A]	37/39[B]	37/39[C]	Day: Highway works Evening: General site works Night: General site works[9]	NA	34	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	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined	Mitigation	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
611081	Lawford Close, Crewe	52/58[A]	35/37[B]	35/37[C]	Day: Highway works Evening: General site works Night: General site works[9]	NA	9	R	T	H	-	-	-	-	-
611082	Barnfield Close, Crewe	56/58[B]	33/35[C]	33/35[C]	Day: Highway works Evening: General site works Night: General site works[9]	NA	28	R	T	H	-	-	-	-	-
611101	Park House Cottage, Sandbach	53/55[A]	-/-[B]	-/-[C]	Day: Highway works	NA	1	R	T	-	-	-	-	-	-
611102	Henshall Drive, Sandbach	66/68[A]	-/-[C]	-/-[C]	Day: Highway works	A	5	R	T	H	-	D8	-	-	MA01-C-C17[12]
611103	Congleton Road, Sandbach	71/73[C]	-/-[C]	-/-[C]	Day: Highway works	A	1	R	T	H	-	D17	-	-	MA01-C-C17[11,12][12]
611104	Congleton Road, Sandbach	63/64[A]	-/-[B]	-/-[C]	Day: Highway works	NA	3	R	T	H	-	-	-	-	-
611105	Gatekeeper Close, Sandbach	69/70[B]	-/-[C]	-/-[C]	Day: Highway works	A	14	R	T	H	-	D17	-	-	MA01-C-C17[11,12]
611106	Radbroke Close, Sandbach	53/54[A]	-/-[A]	-/-[B]	Day: Highway works	NA	16	R	T	-	-	-	-	-	-

[12] Likely significant effect added at Sandbach (as a result of junction modifications to the A533 Old Mill Road and Congleton Road junction (AP2-001-003)).

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	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined	Mitigation	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
611107	Congleton Road, Sandbach	57/59[B]	-/-[C]	-/-[C]	Day: Highway works	NA	4	R	T	H	-	-	-	-	-
611108	Henshall Drive, Sandbach	48/50[A]	-/-[A]	-/-[B]	Day: Highway works	NA	5	R	T	-	-	-	-	-	-
611109	Radbroke Close, Sandbach	55/57[A]	-/-[A]	-/-[B]	Day: Highway works	NA	7	R	T	-	-	-	-	-	-
611110	Radbroke Close, Sandbach	59/61[A]	-/-[B]	-/-[C]	Day: Highway works	NA	5	R	T	-	-	-	-	-	-
611111	Swettenham Close, Sandbach	49/51[A]	-/-[B]	-/-[C]	Day: Highway works	NA	10	R	T	-	-	-	-	-	-
611112	Park House Drive, Sandbach	43/44[A]	-/-[A]	-/-[B]	Day: Highway works	NA	23	R	T	-	-	-	-	-	-
611113	Doddington Drive, Sandbach	42/43[A]	-/-[A]	-/-[A]	Day: Highway works	NA	29	R	T	-	-	-	-	-	-
611114	Filter Bed Way, Sandbach	60/62[B]	-/-[C]	-/-[C]	Day: Highway works	NA	7	R	T	H	-	-	-	-	-
611115	Holly Blue Road, Sandbach	48/49[A]	-/-[A]	-/-[B]	Day: Highway works	NA	11	R	T	-	-	-	-	-	-
611116	Filter Bed Way, Sandbach	48/49[A]	-/-[A]	-/-[B]	Day: Highway works	NA	32	R	T	-	-	-	-	-	-
611117	Grayling Road, Sandbach	43/45[A]	-/-[A]	-/-[A]	Day: Highway works	NA	77	R	T	-	-	-	-	-	-
611118	Comma Road, Sandbach	44/46[B]	-/-[C]	-/-[C]	Day: Highway works	NA	11	R	T	H	-	-	-	-	-
611119	Alderley Close, Sandbach	49/50[A]	-/-[B]	-/-[C]	Day: Highway works	NA	10	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	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined	Mitigation	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
611120	Radbroke Close, Sandbach	46/48[A]	-/-[A]	-/-[B]	Day: Highway works	NA	15	R	T	-	-	-	-	-	-
611121	Congleton Road, Sandbach	44/46[A]	-/-[A]	-/-[B]	Day: Highway works	NA	12	R	T	-	-	-	-	-	-
611122	Congleton Road, Sandbach	45/47[B]	-/-[C]	-/-[C]	Day: Highway works	NA	9	R	T	H	-	-	-	-	-
611123	Monarch Place, Sandbach	44/45[B]	-/-[C]	-/-[C]	Day: Highway works	NA	36	R	T	H	-	-	-	-	-
611124	Holly Blue Road, Sandbach	41/43[A]	-/-[A]	-/-[A]	Day: Highway works	NA	41	R	T	-	-	-	-	-	-
611220	Park House Care Home, Congleton Road, Sandbach	67/68[A]	-/-[C]	-/-[C]	Day: Highway works	A	1	R	T	H	-	D13	-	-	MA01-C-N12[13]
611228	Barrows Close, Crewe	62/63[A]	-/30[A]	-/30[B]	Day: Highway works Evening: General site works Night: General site works[9]	NA	5	R	T	-	-	-	-	-	-

[13] Likely significant effect added at Park House Care Home (as a result of junction modifications to the A533 Old Mill Road and Congleton Road junction (AP2-001-003)).

Table 5: MA01 Assessment of construction noise at non-residential receptors (AP2 revised scheme)

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										
611045	Leighton Academy and Nursery (School)	44/47	33/35	3	1	Day: Earthworks Night: General site works[9]	1	A3	T	-	-	-	-	-	-
611229	Cygnet Nield House (Hospital), Bradfield Road, Crewe	61/62	-/-	5	-	Day: Highway works	1	A3	T	H	-	D15	-	-	MA01-C-N11[14]

[14] Likely significant effect added at Cygnet Nield House (Hospital) (as a result of junction modifications to the B5076 Bradfield Road and Parkers Road junction, Crewe (AP2-001-001)).

Airborne sound: indirect effects

2.1.25 Construction road traffic associated with the construction phase of the AP2 revised scheme would generate airborne noise. Given that the construction traffic model information is not available for the SES2 changes and AP2 amendments separately, the in-combination effects of SES2 changes and AP2 amendments is presented in the AP2 section. The change in traffic noise level at a reference distance of 10m from the edge of the nearside carriageway resulting from the presence of construction traffic for a given road has been predicted. Data has 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 7.

2.1.26 Explanation of the information within is provided in in Table 6 and the main ES Volume 5, Appendix: SV-001-00000 of the main ES.

Table 6: 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 to <5dB, or ≥ 1dB to <3dB where a high existing sound level is identified
	Orange denotes a moderate impact – a change is of ≥5dB to <10dB, or ≥3dB to <5dB where a high existing sound level is identified
	Red denotes a major impact – a change is of ≥10 dB, or ≥5dB where a high existing sound level is identified
~	When considered under the significance criteria set out in the main ES 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: on-site 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 7: MA01 Assessment of construction traffic noise levels – indirect effects (AP2 revised scheme)

Road name	Portion of road affected	Number of properties affected (approx.)	Daytime traffic sounds levels, $L_{pA10,\ 18\ hr}$ dB			Change compared to current traffic sound level (dB)		Combined impact	Significant effect
			Without the AP2 revised scheme (2031)	Typical month during construction	Peak month during construction	Typical month during construction	Peak month during construction		
Chambers Street	Between A534 Nantwich Road and Catherine Street	R: 50	45.2	49.5	50.1	4.3	4.9	-	MA01-C-C18[15]
Waldron's Lane	Between Warmingham Road and Stoneley Road	R: 10	53.1	58.7	59.6	5.6	6.5	-	MA01-C-C12[16]
Stoneley Road	Between Groby Road and Waldron's Lane	R: 15	47.8	54.2	55.1	6.4	7.3	-	MA01-C-C12[16]

[15] Likely significant effect added along road (as a result of new construction traffic data for AP2 revised scheme).

[16] Different likely significant effect along road (as a result of new construction traffic data for AP2 revised scheme).

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

Airborne sound levels used in other assessments

2.1.28 There is no change in the airborne sound levels used in other assessments compared to the main ES or, where relevant, the SES2.

2.2 Wimboldsley to Lostock Gralam (MA02)

Part 1: Supplementary Environmental Statement 2

Baseline

Existing acoustic environment

2.2.1 Road traffic information, such as flows and speeds, is used to determine the baseline sound levels. Since the production of the main ES, additional road traffic information has been used in the development of the updated baseline and future baseline road traffic models for the SES2 scheme. Where relevant, this road traffic information has been used to update the existing baseline sound modelling.

2.2.2 There are AP2 amendments that involve works close to properties which were not included within the main ES. The additional baseline sound levels for these properties are presented in Table 8.

Existing baseline data collection methodology

2.2.3 The baseline collection methodology as outlined in the main ES Volume 5, Appendix: SV-001-00000 is not required to be modified by the SES2 changes.

Existing baseline sound measurement locations

2.2.4 No additional baseline sound measurement locations were identified as required by the design changes identified in the SES2 scheme.

Existing baseline sound modelling

2.2.5 Road traffic information such as flows, and speeds is one of the factors which is used to determine the baseline sound levels. Since the production of the main ES, additional road traffic information has been used in the development of the updated baseline and future baseline road traffic models for the SES2 scheme. Where relevant, this road traffic information has been used to update the existing baseline sound modelling.

Future baseline methodology

2.2.6 No changes to the future baseline methodology were required by the design changes identified in the SES2 scheme though additional road traffic information has been used to update the future baseline sound modelling. Where no updates to baseline sound levels are required, the baseline sound modelling information is as described in Section 13 in Volume 2, Community Area report: Wimboldsley to Lostock (MA02) of the main ES and Section 3.8 in SES1 and AP1 ES Volume 2, Community Area report: Wimboldsley to Lostock (MA02).

Baseline sound levels

2.2.7 Baseline sound levels which have been updated for the SES2 scheme are presented for assessment locations 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).

2.2.8 These values are presented in Table 8. 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 the main ES 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.

2.2.9 For all other assessment locations not presented in Table 8, the baseline sound levels used in the original scheme remain relevant based on the changes identified in the SES2 scheme.

Table 8: MA02 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 (2039)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
611150	St Michael and All Angels Church, Hightown, Middlewich	-	65	60	58	64	57	62	67	3,A,i,b
611151	NFU Mutual Middlewich (Offices), Wheelock Street, Middlewich	-	62	57	55	61	55	60	65	3,A,i,b
611152	Jane Barker Opticians (Clinic), Wheelock Street, Middlewich	-	42	37	35	41	35	40	57	3,A,i,b
611153	CATS Optometrist (Clinic), Wheelock Street, Middlewich	-	<40	35	33	<40	33	38	57	3,C,i,b
611154	Family Legal Solicitors (Offices), Ivy House, Wheelock Street, Middlewich	-	44	39	37	43	37	42	57	3,A,i,b
611155	Gallery Finance Ltd (Offices), Wheelock Street, Middlewich	-	44	40	37	44	37	42	56	3,A,i,b
611156	Roman Court Retirement Living, Wheelock Street, Middlewich	-	45	40	37	44	38	43	56	3,A,i,b
611157	Peter Forshaw Funeral Services (Offices),	-	71	66	63	69	63	68	73	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 (2039)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
	Leadsmithy Street, Middlewich									
611158	Waters Edge Medical Centre, Leadsmithy Street, Middlewich	-	71	66	64	69	63	68	73	3,A,i,b
611159	Salinae Day Centre (Clinic), Lewin Street, Middlewich	-	62	58	55	61	55	60	65	3,A,i,b
611160	Middlewich Physiotherapy and Sports Injury Clinic, St Michael's Way, Middlewich	-	71	66	64	70	64	69	74	3,A,i,b
611161	Middlewich Library, Lewin Street, Middlewich	-	71	66	64	69	63	68	73	3,A,i,b
611162	The Kinderton (Accommodation), Kinderton Street, Middlewich	-	63	58	56	63	56	61	66	3,A,i,b
611163	The Boar's Head Hotel (Accommodation), Kinderton Street, Middlewich	-	65	60	58	65	58	63	68	3,A,i,b
611164	Middlewich Victoria Hall (Community Hall), Civic Street, Middlewich	-	45	40	38	44	38	43	59	3,A,i,b
611165	United Reformed Church, Queen Street, Middlewich	-	47	42	39	46	39	44	58	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 (2039)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
611166	CPRE Cheshire (Offices), Victoria Buildings, Lewin Street, Middlewich	-	68	63	61	67	60	65	70	3,A,i,b
611167	The White Horse Business Centre (Offices), Lewin Street, Middlewich	-	72	67	65	70	64	69	74	3,A,i,b
611168	Hightown, Middlewich	-	65	60	58	64	57	62	67	3,A,i,b
611169	Hightown, Middlewich	-	58	53	51	57	51	56	61	3,A,i,b
611170	Queen Street, Middlewich	-	53	49	46	53	46	51	58	3,A,i,b
611171	Lewin Street, Middlewich	-	71	66	64	69	63	68	73	3,A,i,b
611172	Lewin Street, Middlewich	-	72	67	65	70	64	69	74	3,A,i,b
611173	Lewin Street, Middlewich	-	70	65	63	69	62	67	72	3,A,i,b
611174	Middlewich Police Station (Offices), Queen Street, Middlewich	-	49	44	41	48	41	46	59	3,A,i,b
611175	Middlewich Community Centre, Queen Street, Middlewich	-	44	40	37	44	37	42	57	3,A,i,b
611176	Oaklands Medical Centre, St Anns Walk, Middlewich	-	43	39	36	43	36	41	56	3,A,i,b
611177	Queen Street, Middlewich	-	53	49	46	53	46	51	57	3,A,i,b
611178	Maidenhills, Middlewich	-	46	41	38	45	38	43	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 (2039)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
611179	Bembridge Drive, Middlewich	-	53	49	46	52	46	51	59	3,A,i,b
611180	Middlewich Fire Station (Offices), Civic Way, Middlewich	-	47	42	40	46	39	44	58	3,A,i,b
611181	Evade Cheshire Martial Arts (Gym), Civic Way, Middlewich	-	44	39	37	43	37	42	57	3,A,i,b
611182	Middlewich High School, King Edward Street, Middlewich	-	42	37	35	41	35	40	55	3,A,i,b
611183	Beech Street, Middlewich	-	44	39	37	43	37	42	55	3,A,i,b
611184	Dierden's Terrace, Middlewich	-	47	43	40	47	40	45	58	3,A,i,b
611185	Wheelock Street, Middlewich	-	54	49	46	53	47	52	58	3,A,i,b
611186	Wheelock Street, Middlewich	-	<40	<35	31	<40	31	36	57	3,C,i,b
611187	Wheelock Street, Middlewich	-	<40	<35	32	<40	32	37	57	3,C,i,b
611188	Wheelock Street, Middlewich	-	44	40	37	44	37	42	57	3,A,i,b
611189	Wheelock Street, Middlewich	-	48	43	40	47	41	46	56	3,A,i,b

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2039)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
611190	Webbs Lane, Middlewich	-	54	49	47	53	47	52	59	3,A,i,b
611191	Pepper Street, Middlewich	-	60	55	53	59	53	58	63	3,A,i,b
611192	St Michael's Way, Middlewich	-	63	58	55	62	56	61	66	3,A,i,b
611193	The Moorings, Middlewich	-	63	58	55	62	56	61	66	3,A,i,b
611194	The Moorings, Middlewich	-	65	61	58	65	59	64	69	3,A,i,b
611195	Hadrian Way, Middlewich	-	44	39	37	43	37	42	63	3,A,i,b
611196	King Street, Middlewich	-	45	40	38	44	38	43	68	3,A,i,b
611197	New King Street, Middlewich	-	63	58	55	63	56	61	71	3,A,i,b
611198	Regency Walk, Middlewich	-	52	48	45	52	45	50	77	3,A,i,b
611199	King Street, Middlewich	-	58	53	51	58	51	56	68	3,A,i,b
611200	Kinderton Street, Middlewich	-	59	54	52	59	52	57	65	3,A,i,b
611201	Kinderton Street, Middlewich	-	66	61	59	65	59	64	69	3,A,i,b
611202	Regency Walk, Middlewich	-	65	60	58	65	58	63	73	3,A,i,b
611203	Sea Bank, Middlewich	-	60	55	52	59	53	58	64	3,A,i,b
611204	Brooks Lane, Middlewich	-	47	42	39	46	40	45	70	3,A,i,b
611205	St Mary's RC Church, New King Street, Middlewich	-	59	54	52	59	53	58	71	3,A,i,b

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2039)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
611206	Holmes Chapel Road, Middlewich	-	68	63	60	67	61	66	76	3,A,i,b
611207	Regency Walk, Middlewich	-	60	56	53	60	54	59	73	3,A,i,b
611208	Gloucester Avenue, Middlewich	-	47	44	39	47	40	53	80	5,A,i,b
611209	Middlewich Masonic Hall, Kinderton Street, Middlewich	-	70	65	63	70	63	68	74	3,A,i,b
611210	Hadrian Way, Middlewich	-	47	42	40	46	40	45	62	3,A,i,b
611211	Peter Pan Pre School (Nursery), Queen Street, Middlewich	-	53	49	46	53	46	51	57	3,A,i,b
611226	Queen Street, Middlewich and committed development (Map Book ref.: MA01/445A)	-	58	54	51	57	51	56	61	3,A,i,b
611227	Coalpit Lane, Stanthorne and committed development (Map Book ref. MA02/430S)	-	44	39	36	44	38	43	52	3,A,i,b
611230	Sea Bank, Middlewich	-	58	53	51	57	51	56	64	3,A,i,b
612587	Slow & Easy Hotel, Manchester Road, Lostock Gralam	-	62	57	54	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 (2039)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
613241	Motor Connect (Lower Sensitivity Offices), Lostock Gralam	-	58	53	51	58	51	56	61	3,A,i,b
613242	Manchester Road, Lostock Gralam	-	69	64	62	68	62	67	72	3,A,i,b
613243	Manchester Road, Lostock Gralam	-	61	56	54	60	54	59	64	3,A,i,b
613244	Station Road, Lostock Gralam	-	60	54	53	61	55	60	65	3,A,i,b
613245	Station Road, Lostock Gralam	-	59	53	52	61	55	60	65	3,A,i,b
613246	Manchester Road, Lostock Gralam	-	65	60	57	64	58	63	68	3,A,i,b
613247	Crossways Care Home, Station Road, Lostock Gralam	-	59	54	52	60	54	59	64	3,A,i,b
613248	Manchester Road, Lostock Gralam	-	67	62	60	67	61	66	71	3,A,i,b
613249	Manchester Road, Lostock Gralam and committed development (Map Book ref.: MA02/446A)	-	64	59	57	64	58	63	68	3,A,i,b
613250	Holford Avenue, Lostock Gralam	-	57	53	50	57	50	55	60	3,A,i,b

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2039)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
613251	Holford Avenue, Lostock Gralam	-	53	48	45	52	46	51	58	3,A,i,b
613275	Community Centre Playground, School Lane, Lostock Gralam	-	57	52	50	57	51	56	61	3,A,i,b
613282	Lodge Lane, Lostock Gralam	-	61	56	53	61	54	59	64	3,A,i,b
613283	Lodge Lane, Lostock Gralam	-	64	60	57	64	58	63	68	3,A,i,b
613284	Lodge Lane, Lostock Gralam	-	64	59	57	64	58	63	68	3,A,i,b
613285	Manchester Road, Lostock Gralam	-	61	56	54	61	55	60	65	3,A,i,b
613286	Manchester Road, Lostock Gralam	-	61	56	53	61	54	59	64	3,A,i,b
613287	Manchester Road, Lostock Gralam	-	67	62	59	67	60	65	70	3,A,i,b
613288	Manchester Road, Lostock Gralam	-	64	59	57	64	58	63	68	3,A,i,b
613289	Cheshire Business Park (Offices), Lostock Gralam	-	57	52	49	57	50	55	60	3,A,i,b
613290	Stubbs Lane, Lostock Gralam	-	65	60	58	65	59	64	69	3,A,i,b
613291	Lodge Lane, Lostock Gralam	-	54	49	47	56	49	54	61	3,A,i,b
613297	Land To Rear of 14 Station Road, Lostock Gralam and	-	49	45	42	49	42	47	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 (2039)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
	committed development (Map Book ref.: MA02/434A)									

Ground-borne sound and vibration

2.2.10 The SES2 changes do not change the likely significant ground-borne sound and vibration effects identified in the main ES.

Airborne sound: direct impacts and effects

2.2.11 Activities associated with the construction phases of the SES2 Scheme will generate airborne sound. 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.

2.2.12 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.

2.2.13 The results, impact criteria and significance criteria for the assessment of the SES2 Scheme at residential and non-residential receptors are presented in Table 9 and Table 10. Explanation of the information within Table 9 and Table 10 is provided in Volume 5, Appendix: SV-001-00000 of the main ES, with the additional notes presented in Table 3.

2.2.14 The principal SES2 changes responsible for the change in construction noise effect at the specific assessment locations reported in the following tables, are identified in the associated footnotes.

Table 9: MA02 Assessment of construction noise at residential receptors (SES2 scheme)

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	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											
612505	Pear Tree Farm Cottages, Davenham Road, Billenge Green	63/69[A]	-/-[A]	-/-[C]	Day: Viaduct construction	A	10	R	T	-	-	D5	-	-	MA02-C-C2[17]

[17] Different likely significant effect at Pear Tree Farm Cottages (as a result of changes to the construction programme at SES2).

Table 10: MA02 Assessment of construction noise at non-residential receptors (SES2 scheme)

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										
611224	Wimboldsley Hall Barns, Wimboldsley, Middlewich and committed development Map Book ref.: MA02/423S and MA02/425S)	60/66	45/45	13	1	Day: Overbridge construction Night: Bored tunnel works	1	A4	T	-	-	D33	-	-	MA02-C-N9[18]
611225	Wimboldsley Hall Barns, Wimboldsley, Middlewich and committed development Map Book ref.: MA02/422S and MA02/424S)	61/69	48/48	15	1	Day: Overbridge construction Night: Bored tunnel works	1	A4	T	-	-	D36	-	-	MA02-C-N9[18]
612600	Holford Hall (Wedding Venue), Chester Road, Plumley	52/56	-/-	5	-	Day: Earthworks	1	A2	T	-	-	D11	-	-	MA02-C-N1[19]

[18] Likely significant effect added at Wimboldsley Hall Barns and committed developments Map book ref.: MA02/423S, MA02/422S, MA02/424S and MA02/425S (as a result of SES2 scheme).

[19] Different likely significant effect at Holford Hall (Wedding Venue) (as a result of SES2 changes to the construction programme).

Airborne sound levels used in other assessments

2.2.15 There is no change in the airborne sound levels used in other assessments compared to the main ES or, where relevant, the SES2.

Part 2: Additional Provision 2 Environmental Statement

Construction

Effects during construction

Introduction

2.2.16 The assessment is reported first for ground-borne vibration and then for airborne sound. Under each of these headings, the results of the quantitative identification of impacts, effects and significant effects are presented. The significant effects and the evidence used to support these conclusions are presented in the SES2 and AP2 ES Volume 2, Community Area report: Wimboldsley to Lostock Gralam (MA02).

Avoidance and mitigation measures

2.2.17 The avoidance and mitigation measures are set out in the main ES Volume 2, Community Area report: Wimboldsley to Lostock Gralam (MA02), Section 13.

Identification of impacts and effects

2.2.18 Assessment locations defined for the quantitative assessment of construction impacts are shown on SES2 and AP2 ES, Volume 5, Sound, noise and vibration Map Book: Map Series SV-03.

Ground-borne sound and vibration

2.2.19 There is no change in the ground-borne sound, noise and vibration compared to the main ES or, where relevant, the SES2.

Airborne sound: direct impacts and effects

2.2.20 Activities associated with the construction phases of the AP2 revised scheme will generate airborne sound. 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.

2.2.21 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.

2.2.22 The results, impact criteria and significance criteria for the assessment of the AP2 revised scheme at residential and non-residential receptors are presented in Table 11 and Table 12. Explanation of the information within Table 11 and Table 12 is provided in Volume 5, Appendix: SV-001-00000 of the main ES, with additional notes presented in Table 3.

2.2.23 The amendment responsible for the change in construction noise effect at the specific assessment locations reported in the following tables, are identified in the associated footnotes.

Table 11: MA02 Assessment of construction noise at residential receptors (AP2 revised scheme)

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	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											
611156	Roman Court Retirement Living, Wheelock Street, Middlewich and committed development (Map Book ref.: MA02/221, MA02/222 and MA02/298)	40/43[A]	-/-[A]	-/-[A]	Day: Earthworks	NA	89	R	T	-	-	-	-	-	-
611168	Hightown, Middlewich	74/76[C]	-/-[C]	-/-[C]	Day: Highway works	S	5	R	T	H	-	D7	-	-	MA02-C-C10[20]
611169	Hightown, Middlewich	62/64[A]	-/-[B]	-/-[C]	Day: Highway works	NA	12	R	T	H	-	-	-	-	-
611170	Queen Street, Middlewich	45/50[A]	-/-[A]	-/-[C]	Day: Highway works	NA	8	R	T	-	-	-	-	-	-
611171	Lewin Street, Middlewich	56/57[C]	-/-[C]	-/-[C]	Day: Highway works	NA	6	R	T	H	-	-	-	-	-
611172	Lewin Street, Middlewich	50/52[C]	-/-[C]	-/-[C]	Day: Highway works	NA	6	R	T	H	-	-	-	-	-
611173	Lewin Street, Middlewich	48/50[C]	-/-[C]	-/-[C]	Day: Highway works	NA	12	R	T	H	-	-	-	-	-

[20] Likely significant effect added (as a result of modifications to the A54 St Michael's Way, A533 Leadsmithy Street and A54 Kinderton Street junction (AP2-002-001)).

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	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											
611177	Queen Street, Middlewich	44/47[A]	-/-[A]	-/-[C]	Day: Earthworks	NA	8	R	T	-	-	-	-	-	-
611178	Maidenhills, Middlewich	52/54[A]	-/-[A]	-/-[A]	Day: Highway works	NA	8	R	T	-	-	-	-	-	-
611179	Bembridge Drive, Middlewich	38/42[A]	-/-[A]	-/-[C]	Day: Highway works	NA	105	R	T	-	-	-	-	-	-
611183	Beech Street, Middlewich	39/42[A]	-/-[A]	-/-[A]	Day: Highway works	NA	74	R	T	-	-	-	-	-	-
611184	Dierden's Terrace, Middlewich	50/51[A]	-/-[A]	-/-[B]	Day: Highway works	NA	31	R	T	-	-	-	-	-	-
611185	Wheelock Street, Middlewich	59/60[A]	-/-[A]	-/-[C]	Day: Highway works	NA	16	R	T	-	-	-	-	-	-
611186	Wheelock Street, Middlewich	40/43[A]	-/-[A]	-/-[A]	Day: General site works	NA	10	R	T	-	-	-	-	-	-
611187	Wheelock Street, Middlewich	41/45[A]	-/-[A]	-/-[A]	Day: Earthworks	NA	12	R	T	-	-	-	-	-	-
611188	Wheelock Street, Middlewich	43/47[A]	-/-[A]	-/-[A]	Day: Earthworks	NA	44	R	T	-	-	-	-	-	-
611189	Wheelock Street, Middlewich	45/49[A]	-/-[A]	-/-[B]	Day: Highway works	NA	12	R	T	-	-	-	-	-	-
611190	Webbs Lane, Middlewich	40/46[A]	-/-[A]	-/-[C]	Day: Highway works	NA	41	R	T	-	-	-	-	-	-
611191	Pepper Street, Middlewich	44/49[B]	-/-[C]	-/-[C]	Day: Highway works	NA	27	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	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											
611192	St Michael's Way, Middlewich	70/72[B]	-/-[C]	-/-[C]	Day: Highway works	A	1	R	T	H	-	D10	-	-	MA02-C-C10[20]
611193	The Moorings, Middlewich	64/66[B]	-/-[C]	-/-[C]	Day: Highway works	NA	8	R	T	H	-	-	-	-	-
611194	The Moorings, Middlewich	45/51[C]	-/-[C]	-/-[C]	Day: Highway works	NA	9	R	T	H	-	-	-	-	-
611195	Hadrian Way, Middlewich	44/48[A]	-/-[A]	-/-[A]	Day: Highway works	NA	32	R	T	-	-	-	-	-	-
611196	King Street, Middlewich	48/50[A]	-/-[A]	-/-[A]	Day: Highway works	NA	14	R	T	-	-	-	-	-	-
611197	New King Street, Middlewich	40/44[B]	-/-[C]	-/-[C]	Day: Highway works	NA	77	R	T	H	-	-	-	-	-
611198	Regency Walk, Middlewich	35/41[A]	-/-[A]	-/-[C]	Day: Highway works	NA	14	R	T	-	-	-	-	-	-
611199	King Street, Middlewich	59/61[A]	-/-[B]	-/-[C]	Day: Highway works	NA	3	R	T	H	-	-	-	-	-
611200	Kinderton Street, Middlewich	64/66[A]	-/-[B]	-/-[C]	Day: Highway works	A	2	R	T	H	-	D7	-	-	MA02-C-C10[20]
611201	Kinderton Street, Middlewich	70/72[C]	-/-[C]	-/-[C]	Day: Highway works	A	2	R	T	H	-	D7	-	-	MA02-C-C10[20,21]
611202	Regency Walk, Middlewich	53/54[C]	-/-[C]	-/-[C]	Day: Highway works	NA	6	R	T	H	-	-	-	-	-

[21] This receptor has been identified as a significant effect on a precautionary basis due to the increased uncertainty of the baseline in this area.

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	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											
611203	Sea Bank, Middlewich	67/68[B]	-/-[C]	-/-[C]	Day: Highway works	A	5	R	T	H	-	D7	-	-	MA02-C-C10[20,21]
611204	Brooks Lane, Middlewich	41/46[A]	-/-[A]	-/-[A]	Day: Highway works	NA	5	R	T	-	-	-	-	-	-
611206	Holmes Chapel Road, Middlewich	38/40[C]	-/-[C]	-/-[C]	Day: Highway works	NA	9	R	T	H	-	-	-	-	-
611207	Regency Walk, Middlewich	40/46[B]	-/-[C]	-/-[C]	Day: Highway works	NA	6	R	T	H	-	-	-	-	-
611208	Gloucester Avenue, Middlewich	36/40[A]	-/-[A]	-/-[A]	Day: Highway works	NA	28	R	T	-	-	-	-	-	-
611210	Hadrian Way, Middlewich	47/53[A]	-/-[A]	-/-[B]	Day: Highway works	NA	24	R	T	-	-	-	-	-	-
611226	Queen Street, Middlewich and committed development (Map Book ref.: MA01/445A)	62/64[A]	-/-[B]	-/-[C]	Day: Highway works	NA	1	R	T	H	-	-	-	-	-
611227	Coalpit Lane, Stanthorne and committed development (Map Book ref. MA02/430S)	57/61[A]	-/-[A]	-/-[A]	Day: Viaduct construction	NA	5	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	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											
611230	Sea Bank, Middlewich	65/66[A]	-/-[B]	-/-[C]	Day: Highway works	A	2	R	T	H	-	D9	-	-	MA02-C-C10[20]
613242	Manchester Road, Lostock Gralam	70/71[C]	-/-[C]	-/-[C]	Day: Highway works	NA	1	R	T	H	-	-	-		-
613243	Manchester Road, Lostock Gralam	72/73[B]	-/-[C]	-/-[C]	Day: Highway works	A	2	R	T	H	-	D9	-	-	MA02-C-C12[22]
613244	Station Road, Lostock Gralam	66/67[B]	-/-[B]	-/-[C]	Day: Highway works	NA	3	R	T	H	-	-	-	-	-
613245	Station Road, Lostock Gralam	64/65[A]	-/-[B]	-/-[C]	Day: Highway works	NA	3	R	T	H	-	-	-	-	-
613246	Manchester Road, Lostock Gralam	76/77[C]	-/-[C]	-/-[C]	Day: Highway works	S	3	R	T	H	-	D7	-	NI[23]	MA02-C-C12[22]
613247	Crossways Care Home, Station Road, Lostock Gralam	68/69[A]	-/-[B]	-/-[C]	Day: Highway works	A	1	R	T	H	-	D9	-	-	~
613248	Manchester Road, Lostock Gralam	66/67[C]	-/-[C]	-/-[C]	Day: Highway works	NA	2	R	T	H	-	-	-	-	-
613249	Manchester Road, Lostock Gralam and	59/60[B]	-/-[C]	-/-[C]	Day: Highway works	NA	7	R	T	H	-	-	-	-	-

[22] Likely significant effect added at Manchester Road, Lostock Gralam (as a result of modifications to the A559 Manchester Road, A559 Hall Lane and Station Road junction (AP2-002-003)).

[23] Only two of these three properties qualify for noise insulation under the draft Code of Construction Practice (CoCP) Volume 5, Appendix: CT-002-00000 of the main ES.

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	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											
	committed development (Map Book ref.: MA02/446A)														
613250	Holford Avenue, Lostock Gralam	63/64[A]	-/-[B]	-/-[C]	Day: Highway works	NA	4	R	T	H	-	-	-	-	-
613251	Holford Avenue, Lostock Gralam	61/62[A]	-/-[A]	-/-[C]	Day: Highway works	NA	4	R	T	-	-	-	-	-	-
613282	Lodge Lane, Lostock Gralam	73/74[B]	-/-[C]	-/-[C]	Day: Highway works	A	6	R	T	H	-	D17	-	-	MA02-C-C11[24]
613283	Lodge Lane, Lostock Gralam	64/66[B]	-/-[C]	-/-[C]	Day: Highway works	NA	2	R	T	H	-	-	-	-	-
613284	Lodge Lane, Lostock Gralam	59/61[B]	-/-[C]	-/-[C]	Day: Highway works	NA	2	R	T	H	-	-	-	-	-
613285	Manchester Road, Lostock Gralam	74/75[B]	-/-[C]	-/-[C]	Day: Highway works	A	11	R	T	H	-	D18	-	-	MA02-C-C11[24]
613286	Manchester Road, Lostock Gralam	63/64[B]	-/-[C]	-/-[C]	Day: Highway works	NA	6	R	T	H	-	-	-	-	-
613287	Manchester Road, Lostock Gralam	71/72[C]	-/-[C]	-/-[C]	Day: Highway works	NA	3	R	T	H	-	-	-	-	-

[24] Likely significant effect added at Manchester Road, Lostock Gralam (as a result of modifications to the A559 Manchester Road and Stubbs Lane junction (AP2-002-005)).

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	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											
613288	Manchester Road, Lostock Gralam	56/61[B]	-/-[C]	-/-[C]	Day: Highway works	NA	3	R	T	H	-	-	-	-	-
613290	Stubbs Lane, Lostock Gralam	61/63[C]	-/-[C]	-/-[C]	Day: Highway works	NA	2	R	T	H	-	-	-	-	-
613291	Lodge Lane, Lostock Gralam	64/65[A]	-/-[A]	-/-[C]	Day: Highway works	NA	14	R	T	-	-	-	-	-	-
613297	Land To Rear of 14 Station Road, Lostock Gralam and committed development (Map Book ref.: MA02/434A)	54/59[A]	-/-[A]	-/-[B]	Day: Highway works	NA	1	R	T	-	-	-	-	-	-

Table 12: MA02 Assessment of construction noise at non-residential receptors (AP2 revised scheme)

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	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										
611150	St Michael and All Angels Church, Hightown, Middlewich	70/72	-/-	5	-	Day: Highway works	1	A2	T	H	-	D15	-	-	MA02-C-N12[25]
611151	NFU Mutual Middlewich (Offices), Wheelock Street, Middlewich	58/60	-/-	1	-	Day: Highway works	1	A4	T	H	-	-	-	-	$
611152	Jane Barker Opticians (Clinic), Wheelock Street, Middlewich	42/46	-/-	4	-	Day: Earthworks	1	A3	T	-	-	-	-	-	-
611153	CATS Optometrist (Clinic), Wheelock Street, Middlewich	41/45	-/-	4	-	Day: Earthworks	1	A3	T	-	-	-	-	-	-
611154	Family Legal Solicitors (Offices), Ivy House, Wheelock Street, Middlewich	39/42	-/-	1	-	Day: Earthworks	1	A4	T	-	-	-	-	-	-

[25] Likely significant effect added at St Michael and All Angels Church (as a result of modifications to the A54 St Michael's Way, A533 Leadsmithy Street and A54 Kinderton Street junction (AP2-002-001)).

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	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										
611155	Gallery Finance Ltd (Offices), Wheelock Street, Middlewich	41/44	-/-	2	-	Day: Highway works	1	A4	T	-	-	-	-	-	-
611157	Peter Forshaw Funeral Services (Offices), Leadsmithy Street, Middlewich	75/76	-/-	4	-	Day: Highway works	1	A4	T	H	-	D10	-	-	MA02-C-N10[26]
611158	Waters Edge Medical Centre, Leadsmithy Street, Middlewich	76/78	-/-	5	-	Day: Highway works	1	A3	T	H	-	D15	-	-	MA02-C-N11[27]
611159	Salinae Day Centre (Clinic), Lewin Street, Middlewich	60/61	-/-	1	-	Day: Highway works	1	A3	T	H	-	-	-	-	$
611160	Middlewich Physiotherapy and Sports Injury Clinic, St	78/79	-/-	6	-	Day: Highway works	1	A3	T	H	-	D17	-	-	MA02-C-N14[28]

[26] Likely significant effect added at Peter Forshaw Funeral Services (as a result of modifications to the A54 St Michael's Way, A533 Leadsmithy Street and A54 Kinderton Street junction (AP2-002-001)).

[27] Likely significant effect added at Waters Edge Medical Centre (as a result of modifications to the A54 St Michael's Way, A533 Leadsmithy Street and A54 Kinderton Street junction (AP2-002-001)).

[28] Likely significant effect added at Middlewich Physiotherapy and Sports Injury Clinic (as a result of modifications to the A54 St Michael's Way, A533 Leadsmithy Street and A54 Kinderton Street junction (AP2-002-001)).

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	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										
	Michael's Way, Middlewich														
611161	Middlewich Library, Lewin Street, Middlewich	60/62	-/-	-	-	Day: Highway works	1	A3	T	H	-	-	-	-	$
611162	The Kinderton (Accommodation), Kinderton Street, Middlewich	69/70	-/-	5	-	Day: Highway works	1	A3	T	H	-	D15	-	-	MA02-C-N13[29]
611163	The Boar's Head Hotel (Accommodation), Kinderton Street, Middlewich	63/65	-/-	2	-	Day: Highway works	1	A3	T	H	-	-	-	-	$
611164	Middlewich Victoria Hall (Community Hall), Civic Street, Middlewich	43/48	-/-	3	-	Day: Highway works	1	A4	T	-	-	-	-	-	-
611165	United Reformed Church, Queen Street, Middlewich	46/48	-/-	2	-	Day: Highway works	1	A3	T	-	-	-	-	-	-

[29] Likely significant effect added at The Kinderton (Accommodation) (as a result of modifications to the A54 St Michael's Way, A533 Leadsmithy Street and A54 Kinderton Street junction (AP2-002-001)).

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	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										
611166	CPRE Cheshire (Offices), Victoria Buildings, Lewin Street, Middlewich	42/43	-/-	-	-	Day: Highway works	1	A4	T	H	-	-	-	-	-
611167	The White Horse Business Centre (Offices), Lewin Street, Middlewich	47/49	-/-	-	-	Day: Highway works	1	A4	T	H	-	-	-	-	-
611174	Middlewich Police Station (Offices), Queen Street, Middlewich	44/49	-/-	2	-	Day: Highway works	1	A4	T	-	-	-	-	-	-
611175	Middlewich Community Centre, Queen Street, Middlewich	41/44	-/-	2	-	Day: Highway works	1	A4	T	-	-	-	-	-	-
611176	Oaklands Medical Centre, St Anns Walk, Middlewich	40/44	-/-	2	-	Day: Highway works	1	A3	T	-	-	-	-	-	-
611180	Middlewich Fire Station (Offices), Civic Way, Middlewich	43/46	-/-	1	-	Day: Earthworks	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	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										
611181	Evade Cheshire Martial Arts (Gym), Civic Way, Middlewich	43/45	-/-	2	-	Day: Highway works	1	A4	T	-	-	-	-	-	-
611182	Middlewich High School, King Edward Street, Middlewich	41/44	-/-	3	-	Day: Earthworks	1	A3	T	-	-	-	-	-	-
611205	St Mary's RC Church, New King Street, Middlewich	43/46	-/-	-	-	Day: Highway works	1	A2	T	H	-	-	-	-	-
611209	Middlewich Masonic Hall, Kinderton Street, Middlewich	54/55	-/-	-	-	Day: Highway works	1	A4	T	H	-	-	-	-	-
611211	Peter Pan Pre School (Nursery), Queen Street, Middlewich	44/47	-/-	1	-	Day: Earthworks	1	A3	T	-	-	-	-	-	-
612587	Slow & Easy Hotel, Manchester Road, Lostock Gralam	69/70	-/-	6	-	Day: Highway works	1	A3	T	H	-	D11	-	-	MA02-C-N16[30]

[30] Likely significant effect added at Slow and Easy (Hotel) (as a result of modifications to the A559 Manchester Road, A559 Hall Lane and Station Road junction (AP2-002-003)).

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	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										
613241	Motor Connect (Lower Sensitivity Offices), Lostock Gralam	70/71	-/-	10	-	Day: Highway works	1	A4	T	H	-	D11	-	-	MA02-C-N17[31]
613247	Crossways Care Home, Station Road, Lostock Gralam	68/69	-/-	8	-	Day: Highway works	1	A5	T	H	-	-	-	-	*
613275	Community Centre, School Lane, Lostock Gralam	73/74	-/-	14	-	Day: Highway works	1	A3	T	H	-	D19	-	-	MA02-C-N18[32]
613289	Cheshire Business Park (Offices), Lostock Gralam	65/67	-/-	8	-	Day: Highway works	1	A4	T	-	-	D18	-	-	MA02-C-N19[33]

[31] Likely significant effect added at Motor Connect (Lower Sensitivity Offices) (as a result of modifications to the A559 Manchester Road, A559 Hall Lane and Station Road junction (AP2-002-003)).

[32] Likely significant effect added at Lostock Gralam Community Centre (as a result of modifications to the A559 Manchester Road and Stubbs Lane junction (AP2-002-005)).

[33] Likely significant effect added at Cheshire Business Park (Offices) (as a result of modifications to the A559 Manchester Road and Stubbs Lane junction (AP2-002-005)).

Airborne sound: indirect effects

2.2.24 Construction road traffic associated with the construction phases of the SES2 scheme and AP2 amendments would generate airborne noise. Given that the construction traffic model information is not available for the SES2 changes and AP2 amendments separately, the in-combination effects of SES2 changes and AP2 amendments is presented in the AP2 section. The change in traffic noise level at a reference distance of 10m from the edge of the nearside carriageway resulting from the presence of construction traffic for a given road has been predicted. Data has 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 13 as well as road links which have effects removed as a result of the SES2 scheme and AP2 amendments.

2.2.25 Explanation of the information within Table 13 is provided in in Table 6 and Volume 5, Appendix: SV-001-00000 of the main ES.

Table 13: MA02 Assessment of construction traffic noise levels – indirect effects (AP2 revised scheme)

Road name	Portion of road affected	Number of properties affected (approx.)	Daytime traffic sound levels $L_{Aeq,16hr}$ dB			Change compared to current traffic sound level (dB)		Combined impact	Significant effect
			Without the AP2 revised scheme (2031)	Typical month during construction	Peak month during construction	Typical month during construction	Peak month during construction		
Darnhall School Lane, Winsford	Between the B5074 Swanlow Lane and Glebe Green Drive	R: 50 NR: 2	57.5	-	59.7	-	2.2	-	~[34]
The A530 Newton Bank, Middlewich	Between Croxton Lane roundabout and the A530 St Michael's Way	R: 10	66.7	-	67.9	-	1.2	-	MA02-C-C14[35]
The A530 St Michael's Way, Middlewich	Between Newton Heath and Wheelock Street	R: 14	66.4	-	67.4	-	1.0	-	MA02-C-C14[35]
The A54 Holmes Chapel Road, Middlewich	Between King Street and the B5309 Centurion Way roundabout	R: 41	68.4	-	69.6	-	1.2	-	MA02-C-C15[35]

[34] Likely significant effect removed along road (as a result of new construction traffic data for AP2 revised scheme).

[35] Likely significant effect added along road (as a result of new construction traffic data for AP2 revised scheme).

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

Airborne sound levels used in other assessments

2.2.27 There is no change in the airborne sound levels used in other assessments compared to the main ES or, where relevant, the SES2.

2.3 Pickmere to Agden and Hulseheath (MA03)

Part 1: Supplementary Environmental Statement 2

Baseline

Existing acoustic environment

2.3.1 Road traffic information, such as flows and speeds, is used to determine baseline sound levels. Additional road traffic information has been obtained for the SES2 scheme and AP2 revised scheme. Where relevant, this road traffic information has been used to update the existing baseline sound modelling. This has led to updates to the existing baseline sound levels at receptors adjacent to Budworth road and in the community of Tabley within the Pickmere to Agden and Hulseheath (MA03) community area.

2.3.2 There are AP2 amendments which involve works close to properties which were not included within the main ES. The additional baseline sound levels for these properties are presented in Table 14.

Existing baseline data collection methodology

2.3.3 The baseline collection methodology as outlined in the main ES Volume 5, Appendix: SV-001-00000 is not required to be modified by the SES2 changes.

Existing baseline sound measurement locations

2.3.4 No additional baseline sound measurement locations were identified as required by the changes identified in the SES2 scheme.

Existing baseline sound modelling

2.3.5 Road traffic information, such as flows and speeds, is used to determine baseline sound levels. Additional road traffic information has been obtained for the SES2 scheme and AP2 revised scheme. Where relevant, this road traffic information has been used to update the existing baseline sound modelling.

Future baseline methodology

2.3.6 No changes to the future baseline methodology were required by the design changes identified in the SES2 scheme though additional road traffic information has been used to update the future baseline sound modelling.

Baseline sound levels

2.3.7 Baseline sound levels which have been updated for the SES2 scheme are presented for assessment locations 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 (23:00-7:00) 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).

2.3.8 These values are presented in Table 14. 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 the main ES 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.

2.3.9 For all other assessment locations not presented in Table 14, the baseline sound levels used in the original scheme remain relevant based on the changes identified in the SES2 scheme.

Table 14: MA03 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 (2039)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
612638	Budworth Road, Tabley	-	48	43	41	48	43	48	53	3,A,i,b
613221	Villa Farm, Chester Road, Tabley and committed development (Map Book ref.: MA03/095A)	-	76	73	71	73	68	73	78	3,A,i,b
613223	Villa Farm Nursery, Chester Road, Tabley and committed development (Map Book ref.: MA03/097A)	-	71	68	65	68	62	67	72	3,A,i,b
613264	Old Smithy Cottage, Tabley Hill Lane, Tabley	-	61	57	55	61	56	61	66	3,A,i,b
613265	Holly Grove, Tabley	-	63	59	57	62	57	62	67	3,A,i,b
613266	The Windmill (Hotel), Chester Road, Knutsford	-	70	66	64	67	62	67	72	3,A,i,b
613267	Holly Grove, Tabley	-	61	58	56	62	58	62	67	3,A,i,b
613268	Old Hall Lane, Over Tabley	-	62	59	56	63	58	62	67	5,C,i,b
613274	Yew Tree Cottage, Chester Road, Tabley	-	75	71	69	71	66	71	76	3,A,i,b
613292	Chester Road, Tabley	-	70	67	65	67	62	67	72	3,A,i,b
613293	Villa Cottage, Chester Road, Tabley	-	72	68	66	68	63	68	73	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 (2039)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
613294	Peacock Lodge, Tabley Lane, Tabley	-	64	61	58	64	59	64	69	3,A,i,b
613299	Villa Farm (Office), Chester Road, Tabley and committed development (Map Book ref.: MA03/096A and MA03/098A)	-	75	72	70	72	67	72	77	3,A,i,b

Construction

Effects during construction

Introduction

2.3.10 The assessment is reported first for ground-borne vibration and then for airborne sound. Under each of these headings, the results of the quantitative identification of impacts, effects and significant effects are presented. The significant effects and the evidence used to support these conclusions are presented in the SES2 and AP2 ES Volume 2, Community Area report: Pickmere to Agden and Hulseheath (MA03).

Avoidance and mitigation measures

2.3.11 The avoidance and mitigation measures are set out in the main ES Volume 2, Community Area report: Pickmere to Agden and Hulseheath (MA03).

Identification of impacts and effects

2.3.12 Assessment locations defined for the quantitative assessment of construction impacts are shown on SES2 and AP2 ES Volume 5, Sound, noise and vibration Map Book: Map Series SV-03.

Ground-borne sound and vibration

2.3.13 The SES2 changes do not change the likely significant ground-borne sound and vibration effects identified in the main ES.

Airborne sound: direct impacts and effects

2.3.14 Activities associated with the construction phases of the SES2 Scheme will generate airborne sound. 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.

2.3.15 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.

2.3.16 The results, impact criteria and significance criteria for the assessment of the SES2 Scheme at residential and non-residential receptors are presented in Table 15 and Table 16. Explanation of the information within Table 15 and Table 16 is provided in Volume 5, Appendix: SV-001-00000 of the main ES, with the additional notes presented in Table 3.

2.3.17 The principal SES2 changes responsible for the change in construction noise effect at the specific assessment locations reported in the following tables, are identified in the associated footnotes.

Table 15: MA03 Assessment of construction noise at residential receptors (SES2 scheme)

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											
612638	Budworth Road, Tabley	65/68[A]	-/-[A]	-/-[B]	Day: General site works	A	5	R	T	-	-	D12	V	-	MA03-C-C1[36]
613221	Villa Farm, Chester Road, Tabley and committed development (Map Book ref.: MA03/095A)	73/75[C]	-/-[C]	-/-[C]	Day: Highway works	NA	6	R	T	H	-	-	-	-	-
613264	Old Smithy Cottage, Tabley Hill Lane, Tabley	59/60[B]	-/-[C]	-/-[C]	Day: Highway works	NA	1	R	T	H	-	-	-	-	-
613265	Holly Grove, Tabley	52/58[B]	-/-[C]	-/-[C]	Day: Highway works	NA	3	R	T	H	-	-	-	-	-
613267	Holly Grove, Tabley	50/53[B]	-/-[C]	-/-[C]	Day: Earthworks	NA	23	R	T	H	-	-	-	-	-
613268	Old Hall Lane, Over Tabley	50/55[B]	-/-[C]	-/-[C]	Day: Earthworks	NA	8	R	T	H	-	-	-	-	-
613274	Yew Tree Cottage, Chester Road, Tabley	67/69[C]	-/-[C]	-/-[C]	Day: Highway works	NA	3	R	T	H	-	-	-	-	-

[36] Construction traffic effect removed (as a result of new construction traffic data for AP2 revised scheme).

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											
613292	Chester Road, Tabley	51/57[C]	-/-[C]	-/-[C]	Day: Highway works	NA	2	R	T	H	-	-	-	-	-
613293	Villa Cottage, Chester Road, Tabley	49/52[C]	-/-[C]	-/-[C]	Day: Highway works	NA	1	R	T	H	-	-	-	-	-
613294	Peacock Lodge, Tabley Lane, Tabley	44/48[B]	-/-[C]	-/-[C]	Day: Highway works	NA	2	R	T	H	-	-	-	-	-

Table 16: MA03 Assessment of construction noise at non-residential receptors (SES2 scheme)

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										
613223	Villa Farm Nursery, Chester Road, Tabley and committed development (Map Book ref.: MA03/097A)	68/70	-/-	-	-	Day: Highway works	1	A3	T	H	-	-	-	-	$
613266	The Windmill (Hotel), Chester Road, Knutsford	52/58	-/-	-	-	Day: Highway works	1	A3	T	H	-	-	-	-	$
613299	Villa Farm (Office), Chester Road, Tabley and committed development (Map Book ref.: MA03/096A and MA03/098A)	74/76	-/-	2	-	Day: Highway works	1	A3	T	H	-	-	-	-	$

Airborne sound levels used in other assessments

2.3.18 There is no change in the airborne sound levels used in other assessments compared to the main ES or, where relevant, the SES2.

Part 2: Additional Provision 2 Environmental Statement

Construction

Effects during construction

Introduction

2.3.19 The assessment is reported first for ground-borne vibration and then for airborne sound. Under each of these headings, the results of the quantitative identification of impacts, effects and significant effects are presented. The significant effects and the evidence used to support these conclusions are presented in the SES2 and AP2 ES Volume 2, Community Area report: Wimboldsley to Lostock Gralam (MA02).

Avoidance and mitigation measures

2.3.20 The avoidance and mitigation measures are set out in the main ES Volume 2, Community Area report: Wimboldsley to Lostock Gralam (MA02), Section 13.

Identification of impacts and effects

2.3.21 Assessment locations defined for the quantitative assessment of construction impacts are shown on SES2 and AP2 ES, Volume 5, Sound, noise and vibration Map Book: Map Series SV-03.

Ground-borne sound and vibration

2.3.22 There are no amendments in this community area that have the potential to lead to changes in the likely significant airborne or ground-borne noise or vibration effects from those assessed in the main ES or, where relevant, the SES2.

Airborne sound: direct impacts and effects

2.3.23 There are no amendments in this community area that have the potential to lead to changes in the likely significant airborne effects from those assessed in the main ES or, where relevant, the SES2.

Airborne sound: indirect effects

2.3.24 Construction road traffic associated with the construction phases of the SES2 scheme and AP2 amendments would generate airborne noise. Given that the construction traffic model information is not available for the SES2 changes and AP2 amendments separately, the in-combination effects of SES2 changes and AP2 amendments is presented in the AP2 section. The change in traffic noise level at a reference distance of 10m from the edge of the nearside carriageway resulting from the presence of construction traffic for a given road has been predicted. Data has 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 17 as well as road links which have effects removed as a result of the SES2 scheme and AP2 amendments.

2.3.25 Explanation of the information within Table 17 is provided in Table 6 and Volume 5, Appendix: SV-001-00000 of the main ES.

Table 17: MA03 Assessment of construction traffic noise levels – indirect effects (AP2 revised scheme)

Road name	Portion of road affected	Number of properties affected (approx.)	Daytime traffic sounds levels, $L_{pA10,\ 18\ hr}$ dB			Change compared to current traffic sound level (dB)		Combined impact	Significant effect
			Without the AP2 revised scheme (2031)	Typical month during construction	Peak month during construction	Typical month during construction	Peak month during construction		
B5391 Pickmere Lane	Between School Lane and Budworth Road	R:10 (21) NR:0	59.3	60.9	65.8	-	6.5	-	MA03-C-C5[37]
B5391 Pickmere Lane	Between Budworth Road and the A556	R:11 (21) NR:0	61.1	61.1	65.6	-	4.5	-	MA03-C-C5[37]
Budworth Road	Between Frog Lane and Old Hall Lane	R:0 (0) NR:0	55.4	56.3	58.3	-	2.9	-	~[38]
B5569 Chester Road	Between B5569 and the A50 Warrington Road	R:50 (50) NR:0	59.1	60.4	62.8	-	3.7	-	MA03-C-C3[39]

[37] Likely significant effect added at Pickmere Lane (as a result of new construction traffic data for AP2 revised scheme).

[38] Likely significant effect removed at Budworth Road (as a result of new construction traffic data for AP2 revised scheme).

[39] Likely significant effect added at Chester Road (as a result of new construction traffic data for AP2 revised scheme).

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

Airborne sound levels used in other assessments

2.3.27 There is no change in the airborne sound levels used in other assessments compared to the main ES or, where relevant, the SES2.

2.4 Hulseheath to Manchester (MA06)

Part 1: Supplementary Environmental Statement 2

Baseline

Existing acoustic environment

2.4.1 Road traffic information, such as flows and speeds, is used to determine the baseline sound levels. Since the production of the main ES, additional road traffic information has been obtained for the SES2 scheme and AP2 revised scheme. Where relevant, this road traffic information has been used to update the existing baseline sound modelling. This has led to updates to the existing baseline sound levels at receptors in the following locations within the Hulseheath to Manchester (MA06) community area:

- adjacent to Brooks Drive and in the community of Hale Barns;
- adjacent to Sunbank Lane and Runger Lane; and
- adjacent to Castle Mill Lane.

2.4.2 There are AP2 amendments which involve works close to properties which were not included within the main ES. The additional baseline sound levels for these properties are presented in Table 18.

Existing baseline data collection methodology

2.4.3 The baseline collection methodology as outlined in the main ES Volume 5, Appendix: SV-001-00000 is not required to be modified by the SES2 changes.

Existing baseline sound measurement locations

2.4.4 No additional baseline sound measurement locations were identified as required by the changes identified in the SES2 scheme.

Existing baseline sound modelling

2.4.5 Road traffic information, such as flows and speeds, is used to determine baseline sound levels. Additional road traffic information has been obtained for the SES2 scheme and AP2 revised scheme. Where relevant, this road traffic information has been used to update the existing baseline sound modelling.

Future baseline methodology

2.4.6 No changes to the future baseline methodology were required by the design changes identified in the SES2 scheme though additional road traffic information has been used to update the future baseline sound modelling. Where no updates to baseline sound levels are

required, the baseline sound modelling information is as described in Section 13 in Volume 2, Community Area report: Hulseheath to Manchester (MA06) of the main ES.

Baseline sound levels

2.4.7 Baseline sound levels which have been updated for the SES2 scheme are presented for assessment locations 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 (23:00-7:00) 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).

2.4.8 These values are presented in Table 18. 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 the main ES 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.

2.4.9 For all other assessment locations not presented in Table 18, the baseline sound levels used in the original scheme remain relevant based on the changes identified in the SES2 scheme.

Table 18: MA06 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 (2039)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
612731	Lower Thornsgreen Farm, Back Lane, Ashley	-	53	50	46	53	47	52	57	3,A,i,b
612741	Sunbank Lane, Ringway	-	55	53	49	55	48	53	58	3,A,i,b
612749	Sunbank Lane, Ringway	-	53	50	46	54	47	52	57	3,A,i,b
612763	Rivershill Gardens, Hale Barns	-	60	58	54	62	55	60	65	3,A,i,b
612765	Haslemere Avenue, Hale Barns	-	59	56	52	60	54	59	64	3,A,i,b
612769	Ridge Avenue, Hale Barns	-	55	53	49	55	49	54	59	3,A,i,b
612771	Warburton Drive, Hale Drive	-	57	55	50	58	52	57	62	3,A,i,b
612772	Dobb Hedge Close, Hale Barns	-	55	52	48	56	50	55	60	3,A,i,b
612773	Bankside, Hale Barns	-	54	52	47	55	49	54	59	3,A,i,b
612775	Dobb Hedge Close, Hale Barns	-	54	51	47	55	49	54	59	3,A,i,b
612782	Warburton Close, Hale Barns	-	55	53	49	56	50	55	60	3,A,i,b
612784	Carrwood, Hale Barns	-	48	45	41	49	43	48	53	3,A,i,b
612788	Green Gate, Hale Barns	-	51	49	44	51	45	50	55	3,A,i,b
612798	Marlfield Road, Hale Barns	-	52	49	45	52	46	51	56	3,A,i,b
612799	Marlfield Road, Hale Barns	-	51	49	45	52	46	51	56	3,A,i,b

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2039)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
612800	World Cargo Centre (Lower Sensitivity Offices), Manchester Airport, Manchester	-	61	59	55	62	56	61	66	3,A,i,b
612810	Green Gate, Hale Barns	-	50	48	43	50	44	49	54	3,A,i,b
612811	Burnside, Hale Barns	-	56	54	49	56	50	55	60	3,A,i,b
612814	World Freight Terminal (Lower Sensitivity Offices), Manchester Airport, Manchester	-	60	57	53	61	55	60	65	3,A,i,b
612816	Premier Inn Manchester Airport (M56/J6) Runger Lane South Hotel, Manchester	-	69	66	62	69	63	68	73	3,A,i,b
612817	Burnside, Hale Barns	-	51	48	44	51	45	50	55	3,A,i,b
612818	Warren Drive, Hale Barns	-	49	47	43	50	44	49	54	3,A,i,b
612824	Hale Road, Hale Barns	-	58	55	51	58	52	57	62	3,A,i,b
612832	Hasty Lane, Ringway	-	55	52	48	55	49	54	59	3,A,i,b
612836	Hasty Lane, Ringway	-	65	63	58	65	59	64	69	3,A,i,b
612849	Brooks Drive, Hale Barns	-	49	47	42	49	43	48	53	3,A,i,b
612880	Hale Road, Hale Barns	-	54	52	47	55	48	53	58	3,A,i,b
612883	Burnside, Hale Barns	-	55	52	48	55	49	54	59	3,A,i,b
613048	Sunbank Lane, Ringway	-	52	49	45	52	46	51	56	3,A,i,b

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2039)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
613090	Hale Road, Hale Barns	-	57	54	50	57	51	56	61	3,A,i,b
613091	Hale Road, Hale Barns	-	55	53	49	56	50	55	60	3,A,i,b
613205	Amazon UK Services Ltd (Lower Sensitivity Offices), Manchester	-	59	57	53	60	54	59	64	3,A,i,b
613219	The Hut Group Icon (Office), Sunbank Lane, Manchester	-	58	56	52	59	53	58	63	3,A,i,b
613252	Morland House (Offices), Altrincham Road, Wilmslow	-	63	61	57	63	57	62	67	3,A,i,b
613253	Lindow Orchard, Altrincham Road, Wilmslow	-	66	64	59	66	59	64	69	3,A,i,b
613254	Altrincham Road, Wilmslow	-	72	70	66	72	66	71	76	3,A,i,b
613255	Sandiway, Mobberley Road, Wilmslow	-	60	58	53	60	53	58	63	3,A,i,b
613256	Merrywinds, Altrincham Road, Wilmslow	-	67	65	60	67	60	65	70	3,A,i,b
613257	Rabbits Nest Cottage, Altrincham Road, Wilmslow	-	60	58	54	60	54	59	64	3,A,i,b
613258	Malvern, Mobberley Road, Wilmslow	-	61	59	54	61	54	59	64	3,A,i,b
613259	The Cottage, Sandy Lane, Wilmslow	-	51	49	45	51	45	50	55	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 (2039)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
613260	Wallworth Terrace, Altrincham Road, Wilmslow	-	70	67	63	69	63	68	73	3,A,i,b
613261	Vale Road, Wilmslow	-	44	41	37	43	37	42	47	3,A,i,b
613262	Platt Cottage, Greaves Road, Wilmslow	-	46	44	39	46	39	44	49	3,A,i,b
613263	Pear Tree Cottage, Mobberley Road, Wilmslow	-	62	60	55	62	55	60	65	3,A,i,b
613269	Shay Lane, Hale Barns	-	64	61	57	61	54	59	64	3,A,i,b
613270	Shay Lane, Hale Barns	-	59	57	52	56	50	55	60	3,A,i,b
613271	Brooks Drive, Hale Barns	-	48	45	41	48	42	47	52	3,A,i,b
613272	Brooks Drive, Hale Barns	-	46	43	39	45	39	44	49	3,A,i,b
613277	Thorley Lane, Ringway	-	62	60	55	62	56	61	66	3,A,i,b
613278	Bankside, Hale Barns	-	59	56	52	60	54	59	64	3,A,i,b
613295	Haslemere Avenue, Hale Barns	-	62	60	55	63	57	62	67	3,A,i,b
613296	Brooks Drive, Hale Barns and committed development (Map Book ref.: MA06/285S)	-	50	48	43	50	44	49	54	3,A,i,b
613298	Avro Way (Lower Sensitivity Offices), Manchester and committed development (Map Book ref.: MA06/281S and MA06/282S)	-	58	56	51	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 (2039)				
			Daytime L_{pAeq}	Evening / weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
613300	The Hut Group Icon (Studio), Sunbank Lane, Manchester	-	56	54	50	57	51	56	61	3,A,i,b
613301	Premier Inn Manchester Airport (M56/J6) Runger Lane North Hotel, Manchester	-	60	57	53	61	55	60	65	3,A,i,b
613303	Chapel House Farm, Roaring Gate Lane, Hale	-	61	59	55	61	54	59	64	3,A,i,b
613311	Castle Mill Lane, Ashley	-	61	58	54	62	55	60	65	3,A,i,b

Ground-borne sound and vibration

2.4.10 The SES2 changes do not change the likely significant ground-borne sound and vibration effects identified in the main ES.

Airborne sound: direct impacts and effects

2.4.11 Activities associated with the construction phases of the SES2 Scheme will generate airborne sound. 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.

2.4.12 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.

2.4.13 The results, impact criteria and significance criteria for the assessment of the SES2 Scheme at residential receptors are presented in Table 19 and Table 20. Explanation of the information within Table 19 and Table 20 is provided in Volume 5, Appendix: SV-001-00000 of the main ES, with the additional notes presented in Table 3.

2.4.14 The principal SES2 changes responsible for the change in construction noise effect at the specific assessment locations reported in the following tables, are identified in the associated footnotes.

Table 19: MA06 Assessment of construction noise at residential receptors (SES2 scheme)

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											
612680	Sunbank Lane, Ringway	64/71 [B]	53/53 [C]	53/53 [C]	Day: General site works Night: Railhead use	A	1	R	T	H	-	D1	V	-	~[40]

[40] Likely significant effect removed at Sugar Brook Farm Bed and Breakfast (as a result of SES2 change to type of receptor).

Table 20: MA06 Assessment of construction noise at non-residential receptors (SES2 scheme)

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										
612714	Birkin Farm (Holiday Let), Ashley Road, Ashley	64/72	49/49	14	2	Day: Railhead construction Night: Railhead use	1	A3	T	-	-	D9	-	-	MA06-C-N2[41]
612718	Stock Farm (Holiday Let), Ashley Road, Ashley	64/70	57/57	12	6	Day: Earthworks Night: Railhead use	1	A3	T	-	-	D84 N45	V	-	MA06-C-N2[41]
612789	Cherry Tree House (Office), Cherry Tree Lane, Rostherne	66/71	30/33	14	-	Day: Retaining walls construction Night: Retaining walls construction[9]	1	A4	T	-	-	D30	V, CT	-	MA06-C-N1[42]
613079	Little Lodge and South Arden Lodge (Holiday Let), Mobberley Road, Ashley	64/71	55/55	11	4	Day: General site works Night: Railhead use	1	A3	T	H	-	D94 N44	V	-	MA06-C-N2[41]

[41] Different likely significant effect at Tatton Stays Holiday Lets (as a result of SES2 changes to the construction programme).

[42] Different likely significant effect at Cherry Tree House (Office) (as a result of SES2 changes to the construction programme).

Airborne sound levels used in other assessments

2.4.15 There is no change in the airborne sound levels used in other assessments compared to the main ES or, where relevant, the SES2.

Part 2: Additional Provision 2 Environmental Statement

Construction

Effects during construction

Introduction

2.4.16 The assessment is reported first for ground-borne vibration and then for airborne sound. Under each of these headings, the results of the quantitative identification of impacts, effects and significant effects are presented. The significant effects and the evidence used to support these conclusions are presented in the SES2 and AP2 ES Volume 2, Community Area report: Hulseheath to Manchester (MA06).

Avoidance and mitigation measures

2.4.17 The avoidance and mitigation measures are set out in the main ES Volume 2, Community Area report: Hulseheath to Manchester (MA06).

Identification of impacts and effects

2.4.18 Assessment locations defined for the quantitative assessment of construction impacts are shown on SES2 and AP2 ES Volume 5, Sound, noise and vibration Map Book: Map Series SV-03.

Ground-borne sound and vibration

2.4.19 Activities associated with the construction phases of the AP2 revised 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.

2.4.20 The results, impact criteria and significance criteria for the assessment of the AP2 revised scheme at residential and non-residential receptors are presented in Table 21. Explanation of the information within Table 21 is provided in Volume 5, Appendix: SV-001-00000 of the main ES, with additional notes presented in Table 3.

2.4.21 The amendment responsible for the change in construction ground-borne sound and vibration effect at the specific assessment locations reported in the following table, are identified in the associated footnotes.

Table 21: MA06 Assessment of construction vibration at residential and non-residential receptors (AP2 revised scheme)

Assessment location		Impact criteria				Significance criteria							
Reference	Area represented	Peak particle velocity (PPV) [mm/s] on foundation	Typical/highest monthly indoor vibration dose value (VDV) [m/s$^{1.75}$]		Construction activity resulting in highest forecast vibration	Type of effect	Number of properties	Type of receptor	Receptor design	Unique feature	Combined impact	Impact duration [m]	Significant effect
			Day 07:00 – 23:00	Night 23:00 – 07:00									
612763	Rivershill Gardens, Hale Barns	0.5	0.16/0.24	-/-	Site set up (vibratory roller)	A	25	R	T	-	O	D 1	MA06-C-C2[43]
612769	Ridge Avenue, Hale Barns	0.3	0.02/0.12	-/-	Site set up (vibratory roller)	NA	3	R	T	-	-	-	-
612771	Warburton Drive, Hale Drive	1.5	0.04/<0.80 [44]	-/-	Site set up (vibratory roller)	A	7	R	T	-	O	D <1[45]	MA06-C-C2[43]
612773	Bankside, Hale Barns	0.7	-/0.64	-/-	Site set up (vibratory roller)	A	4	R	T	-	O	D <1[45]	MA06-C-C2[43]
612782	Warburton Close, Hale Barns	0.7	0.04/0.68	-/-	Site set up (vibratory roller)	A	11	R	T	-	O	D <1[45]	MA06-C-C2[43]
612811	Burnside, Hale Barns	2.0	0.20/<0.80 [44]	-/-	Site set up (vibratory roller)	A	8	R	T	-	O	D 2	MA06-C-C2[43]
612824	Hale Road, Hale Barns	1.1	0.08/0.23	-/-	Earthworks (vibratory roller)	A	14	R	T	-	O	D 3	MA06-C-C3[46]

[43] Different likely significant effect at Warburton Green (as a result of the additional land permanently required to reconfigure M56 Junction 6 (AP2-006-014)).

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

[45] Impacts with duration of less than one month are not generally considered significant.

Assessment location		Impact criteria				Significance criteria							
Reference	Area represented	Peak particle velocity (PPV) [mm/s] on foundation	Typical/highest monthly indoor vibration dose value (VDV) [m/s$^{1.75}$]		Construction activity resulting in highest forecast vibration	Type of effect	Number of properties	Type of receptor	Receptor design	Unique feature	Combined impact	Impact duration [m]	Significant effect
			Day 07:00 – 23:00	Night 23:00 – 07:00									
612832	Hasty Lane, Ringway	0.8	0.08/0.47	-/-	Site set up (vibratory roller)	A	7	R	T	-	O	D 3	MA06-C-C3[46]
612880	Hale Road, Hale Barns	0.6	0.04/0.20	-/-	Earthworks (vibratory roller)	NA	1	R	T	-	-	-	-
612883	Burnside, Hale Barns	2.0	0.04/<0.80[44]	-/-	Site set up (vibratory roller)	A	13	R	T	-	O	D <1[45]	MA06-C-C2[43]
613090	Hale Road, Hale Barns	2.0	0.08/<0.80[44]	-/-	Site set up (vibratory roller)	A	2	R	T	-	O	D 2	MA06-C-C3[46]
613091	Hale Road, Hale Barns	0.4	0.04/0.36	-/-	Site set up (vibratory roller)	A	3	R	T	-	O	D 3	MA06-C-C3[46]
613269	Shay Lane, Hale Barns	0.3	0.04/0.08	-/-	Drainage works (vibratory roller)	NA	4	R	T	-	-	-	-
613271	Brooks Drive, Hale Barns	0.4	0.04/0.28	-/-	Drainage works (vibratory roller)	A	2	R	T	-	-	D 2	~
613272	Brooks Drive, Hale Barns	0.2	0.08/0.12	-/-	Drainage works (vibratory roller)	NA	5	R	T	-	-	-	-
613277	Thorley Lane, Ringway	0.3	0.08/0.16	-/-	Finishing works (vibratory roller)	NA	1	R	T	-	-	-	-

[46] Different likely significant effect at Hale Barns (as a result of the additional land permanently required to reconfigure M56 Junction 6 (AP2-006-014)).

Assessment location		Impact criteria				Significance criteria							
Reference	Area represented	Peak particle velocity (PPV) [mm/s] on foundation	Typical/highest monthly indoor vibration dose value (VDV) [m/s$^{1.75}$]		Construction activity resulting in highest forecast vibration	Type of effect	Number of properties	Type of receptor	Receptor design	Unique feature	Combined impact	Impact duration [m]	Significant effect
			Day 07:00 – 23:00	Night 23:00 – 07:00									
613278	Bankside, Hale Barns	1.5	0.02/<0.80[4] [4]	-/-	Site set up (vibratory roller)	A	6	R	T	-	O	D 1	MA06-C-C2[43]
613311	Castle Mill Lane, Ashley	0.5	-/-	0.16/0.17	Piling works (vibratory piling)	A	7	R	T	-	O	D <1[45]	~

Airborne sound: direct impacts and effects

2.4.22 Activities associated with the construction phases of the AP2 revised scheme will generate airborne sound. 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.

2.4.23 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.

2.4.24 The results, impact criteria and significance criteria for the assessment of the AP2 revised scheme at residential and non-residential receptors are presented in Table 22 and Table 23. Explanation of the information within Table 22 and Table 23 is provided in Volume 5, Appendix: SV-001-00000 of the main ES, with additional notes presented in Table 3.

2.4.25 The amendment responsible for the change in construction noise effect at the specific assessment locations reported in the following tables, are identified in the associated footnotes.

Table 22: MA06 Assessment of construction noise at residential receptors (AP2 revised scheme)

Assessment location		Impact criteria				Significance criteria									
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	Significant effect
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
612741	Sunbank Lane, Ringway	73/79[A]	38/45[B]	38/45[C]	Day: Culvert construction Evening: Culvert construction Night: Culvert construction[9]	S	1	R	T	-	-	D39	V	NI	MA06-C-C1[47]
612749	Sunbank Lane, Ringway	69/73[A]	32/35[B]	32/35[C]	Day: Earthworks Evening: Earthworks Night: Earthworks[9]	A	4	R	T	-	-	D57	V	-	MA06-C-C1[47]
612763	Rivershill Gardens, Hale Barns	70/75[B]	32/37[C]	32/37[C]	Day: Overbridge construction Evening: Overbridge construction Night: Overbridge construction[9]	A	25	R	T	H	-	D15	V	-	MA06-C-C2[48]

[47] Different likely significant effect at Ringway (as a result of the additional land permanently required to reconfigure M56 Junction 6 (AP2-006-014)).

[48] Different likely significant effect at Warburton Green (as a result of the additional land permanently required to reconfigure M56 Junction 6 (AP2-006-014)).

Assessment location		Impact criteria				Significance criteria									
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	Significant effect
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
612765	Haslemere Avenue, Hale Barns	66/71[A]	-/33[C]	-/33[C]	Day: Overbridge construction Evening: Highway works Night: Highway works[9]	A	7	R	T	H	-	D14	-	-	MA06-C-C2[48]
612769	Ridge Avenue, Hale Barns	62/68[A]	-/32[B]	-/32[C]	Day: Overbridge construction Evening: Overbridge construction Night: Overbridge construction[9]	A	3	R	T	-	-	D7	-	-	MA06-C-C2[48]
612771	Warburton Drive, Hale Drive	68/73[A]	32/35[C]	32/35[C]	Day: Culvert construction Evening: Culvert construction Night: Culvert construction[9]	A	7	R	T	H	-	D38	V	-	MA06-C-C2[48]

Assessment location		Impact criteria				Significance criteria									
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	Significant effect
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
612772	Dobb Hedge Close, Hale Barns	60/64[A]	-/-[B]	-/-[C]	Day: General site works	NA	15	R	T	-	-	-	-	-	
612773	Bankside, Hale Barns	70/76[A]	32/40[B]	32/40[C]	Day: Culvert construction Evening: Culvert construction Night: Culvert construction[9]	S	4	R	T	-	-	D18	V	NI	MA06-C-C2[48]
612782	Warburton Close, Hale Barns	67/70[A]	32/35[B]	32/35[C]	Day: Earthworks Evening: General site works Night: General site works[9]	A	11	R	T	-	-	D37	V	-	MA06-C-C2[48]
612811	Burnside, Hale Barns	69/75[A]	35/37[B]	35/37[C]	Day: General site works Evening: General site works Night: General site works[9]	A	8	R	T	-	-	D59	V	-	MA06-C-C2[48]

Assessment location		Impact criteria				Significance criteria									
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	Significant effect
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
612824	Hale Road, Hale Barns	65/71[A]	35/37[C]	35/37[C]	Day: Overbridge construction Evening: Bored tunnel works Night: Bored tunnel works	A	14	R	T	H	-	D20	V, CT	-	MA06-C-C3[49]
612832	Hasty Lane, Ringway	68/72[A]	39/42[B]	39/42[C]	Day: Highway works Evening: Bored tunnel works Night: Bored tunnel works	A	7	R	T	-	-	D54	V	-	MA06-C-C3[49]
612849	Brooks Drive, Hale Barns	61/66[A]	39/40[A]	39/40[B]	Day: Earthworks Evening: Bored tunnel works Night: Bored tunnel works	A	9	R	T	-	-	D4	-	-	MA06-C-C6[50]

[49] Different likely significant effect at Hale Barns (as a result of the additional land permanently required to reconfigure M56 Junction 6 (AP2-006-014)).

[50] Likely significant effect added at Brooks Drive, Hale Barns (as a result of the modifications to WFD mitigation for Timperley Brook (AP2-006-018)).

Assessment location		Impact criteria				Significance criteria									
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	Significant effect
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
612880	Hale Road, Hale Barns	67/73[A]	32/34[B]	32/34[C]	Day: Overbridge construction Evening: Overbridge construction Night: Overbridge construction[9]	A	1	R	T	-	-	D41	-	-	MA06-C-C3[49]
612883	Burnside, Hale Barns	69/72[A]	34/35[B]	34/35[C]	Day: Earthworks Evening: General site works Night: General site works[9]	A	13	R	T	-	-	D57	V	-	MA06-C-C2[48]
613048	Sunbank Lane, Ringway	75/80[A]	36/39[A]	36/39[C]	Day: Earthworks Evening: Earthworks Night: Earthworks[9]	S	3	R	T	-	-	D59	V	NI	MA06-C-C1[47]
613090	Hale Road, Hale Barns	68/73[A]	31/34[B]	31/34[C]	Day: General site works Evening: General site works Night: General site works[9]	A	2	R	T	H	-	D58	V	-	MA06-C-C3[49]

Assessment location		Impact criteria				Significance criteria									
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	Significant effect
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
613091	Hale Road, Hale Barns	65/70[A]	37/39[B]	37/39[C]	Day: Overbridge construction Evening: Bored tunnel works Night: Bored tunnel works	A	3	R	T	-	-	D26	V	-	MA06-C-C3[49]
613253	Lindow Orchard, Altrincham Road, Wilmslow	60/61[C]	-/-[C]	-/-[C]	Day: Highway works	NA	5	R	T	H	-	-	-	-	-
613254	Altrincham Road, Wilmslow	74/75[C]	-/-[C]	-/-[C]	Day: Highway works	NA	3	R	T	H	-	-	-	-	-
613255	Sandiway, Mobberley Road, Wilmslow	70/71[B]	-/-[C]	-/-[C]	Day: Highway works	A	1	R	T	H	-	D5	-	-	~
613256	Merrywinds, Altrincham Road, Wilmslow	66/68[C]	-/-[C]	-/-[C]	Day: Highway works	NA	1	R	T	H	-	-	-	-	-
613257	Rabbits Nest Cottage,	61/63[B]	-/-[C]	-/-[C]	Day: Highway works	NA	1	R	T	H	-	-	-	-	-

Assessment location		Impact criteria				Significance criteria									
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	Significant effect
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
	Altrincham Road, Wilmslow														
613258	Malvern, Mobberley Road, Wilmslow	54/55[B]	-/-[C]	-/-[C]	Day: Highway works	NA	5	R	T	H	-	-	-	-	-
613259	The Cottage, Sandy Lane, Wilmslow	58/60[A]	-/-[A]	-/-[C]	Day: Highway works	NA	1	R	T	-	-	-	-	-	-
613260	Wallworth Terrace, Altrincham Road, Wilmslow	54/56[C]	-/-[C]	-/-[C]	Day: Highway works	NA	63	R	T	H	-	-	-	-	-
613261	Vale Road, Wilmslow	49/51[A]	-/-[A]	-/-[A]	Day: Highway works	NA	134	R	T	-	-	-	-	-	-
613262	Platt Cottage, Greaves Road, Wilmslow	52/54[A]	-/-[A]	-/-[A]	Day: Highway works	NA	2	R	T	-	-	-	-	-	-
613263	Pear Tree Cottage,	48/50[B]	-/-[C]	-/-[C]	Day: Highway works	NA	1	R	T	H	-	-	-	-	-

Assessment location		Impact criteria				Significance criteria									
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	Significant effect
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
	Mobberley Road, Wilmslow														
613269	Shay Lane, Hale Barns	60/67[B]	40/41[C]	40/41[C]	Day: Watercourse realignment Evening: Bored tunnel works Night: Bored tunnel works	NA	4	R	T	H	-	-	-	-	-
613270	Shay Lane, Hale Barns	58/61[A]	45/47[C]	45/47[C]	Day: Earthworks Evening: Bored tunnel works Night: Bored tunnel works	NA	7	R	T	H	-	-	-	-	-
613271	Brooks Drive, Hale Barns	59/65[A]	44/45[A]	44/45[B]	Day: Watercourse diversion Evening: Bored tunnel works Night: Bored tunnel works	NA	2	R	T	-	-	-	V	-	-

Assessment location		Impact criteria				Significance criteria									
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	Significant effect
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
613272	Brooks Drive, Hale Barns	63/68[A]	41/43[A]	41/43[A]	Day: Watercourse diversion Evening: Bored tunnel works Night: Bored tunnel works	A	5	R	T	-	-	D2	-	-	MA06-C-C6[50]
613277	Thorley Lane, Ringway	68/73[B]	39/40[C]	39/40[C]	Day: Retaining walls construction Evening: General site works Night: General site works[9]	A	1	R	T	H	-	D14	-	-	~
613278	Bankside, Hale Barns	70/75[A]	31/36[C]	31/36[C]	Day: Overbridge construction Evening: Overbridge construction Night: Overbridge construction[9]	A	6	R	T	H	-	D23	-	-	MA06-C-C2[48]

Assessment location		Impact criteria				Significance criteria									
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	Significant effect
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
613295	Haslemere Avenue, Hale Barns	67/72[B]	30/33[C]	30/33[C]	Day: Overbridge construction Evening: Highway works Night: Highway works[9]	A	1	R	T	H	-	D3	-	-	MA06-C-C2[48]
613296	Brooks Drive, Hale Barns and committed development (Map Book ref.: MA06/285S)	61/65[A]	40/41[A]	40/41[B]	Day: Station construction Evening: Bored tunnel works Night: Bored tunnel works	NA	15	R	T	-	-	-	-	-	
613303	Chapel House Farm, Roaring Gate Lane, Hale	56/61[B]	48/50[C]	48/50[C]	Day: Retaining walls construction Evening: Bored tunnel works Night: Bored tunnel works	NA	4	R	T	H	-	-	-	-	

Assessment location		Impact criteria				Significance criteria									
Reference	Area represented	Typical/highest monthly outdoor L_{pAeq} [dB] at the facade [Assessment category A/B/C]			Construction activity resulting in highest forecast noise levels	Type of effect	Number of properties represented	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	Significant effect
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
613311	Castle Mill Lane, Ashley	54/61[B]	45/45[C]	61/63[C]	Day: Drainage works Evening: Railhead use Night: Emergency refuge area works	S	7	R	T	H	-	N3	V	NI	MA06-C-C7[51]

[51] Likely significant effect added at Castle Mill Lane (as a result of the additional land permanently required to reconfigure M56 Junction 6 (AP2-006-014)).

Table 23: MA06 Assessment of construction noise at non-residential receptors (AP2 revised scheme)

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										
612800	World Cargo Centre (Lower Sensitivity Offices), Manchester Airport, Manchester	70/75	32/39	11	-	Day: Highway works Night: Highway works[9]	1	A4	T	H	-	D12	-	-	MA06-C-N10[52]
612814	World Freight Terminal (Lower Sensitivity Offices), Manchester Airport, Manchester	68/72	33/37	10	-	Day: Highway works Night: Highway works[9]	1	A4	T	H	-	D17	-	-	MA06-C-N10[52]
612816	Premier Inn Manchester Airport (M56/J6) Runger Lane South Hotel, Manchester	69/76	30/36	5	-	Day: Pumping works Night: Pumping works[9]	1	A3	T	H	-	D2	-	-	MA06-C-N9[53]
613252	Morland House (Offices), Altrincham Road, Wilmslow	67/69	-/-	5	-	Day: Highway works	1	A4	T	H	-	D6	-	-	*
613298	Avro Way (Lower Sensitivity Offices),	61/66	-/34	6	-	Day: Highway works	1	A4	T	H	-	D8	-	-	*

[52] Likely significant effect added at World Cargo Centre and Freight Terminal (Lower Sensitivity Offices), Manchester Airport (as a result of the additional land permanently required to reconfigure M56 Junction 6 (AP2-006-014)).

[53] Likely significant effect added at Premier Inn Manchester Airport (M56/J6) Runger Lane South Hotel (as a result of the additional land permanently required to reconfigure M56 Junction 6 (AP2-006-014)).

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										
	Manchester and committed development (Map Book ref.: MA06/291S and MA06/282S)					Night: Highway works[9]									
613300	THG Icon (Studio), Sunbank Lane, Manchester	66/71	32/38	12	-	Day: Highway works Night: Highway works[9]	1	A1	T	H	-	D55	-	-	*
613301	Premier Inn Manchester Airport (M56/J6) Runger Lane North Hotel, Manchester	73/77	38/43	14	-	Day: Highway works Night: Highway works[9]	1	A3	T	H	-	D18	-	-	MA06-C-N8[54]

[54] Likely significant effect added at Premier Inn Manchester Airport (M56/J6) Runger Lane North Hotel, Manchester (as a result of the additional land permanently required to reconfigure M56 Junction 6 (AP2-006-014)).

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										
613302	Holiday Inn Express Manchester Airport, Runger Lane, Manchester and committed development (Map Book ref.: MA06/073)	71/75	31/38	9	-	Day: Highway works Night: Highway works[9]	1	A3	T	H	-	D15	-	-	MA06-C-N7[55]

[55] Different likely significant effect at Holiday Inn Express Manchester Airport, Runger Lane, Manchester and committed development (Map book ref.: MA06/073) (as a result of the additional land permanently required to reconfigure M56 Junction 6 (AP2-006-014)).

Airborne sound: indirect effects

2.4.26 Construction road traffic associated with the construction phases of the SES2 scheme and AP2 amendments would generate airborne noise. Given that the construction traffic model information is not available for the SES2 changes and AP2 amendments separately, the in-combination effects of SES2 changes and AP2 amendments is presented in the AP2 section. The change in traffic noise level at a reference distance of 10m from the edge of the nearside carriageway resulting from the presence of construction traffic for a given road has been predicted. Data has 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 24 as well as road links which have effects removed as a result of the SES2 scheme and AP2 amendments.

2.4.27 Explanation of the information within Table 24 is provided in Table 6 and Volume 5, Appendix: SV-001-00000 of the main ES.

Table 24: MA06 Assessment of construction traffic noise levels – indirect effects (AP2 revised scheme)

Road name	Portion of road affected	Number of properties affected (approx.)	Daytime traffic sounds levels, $L_{pA10,\ 18\ hr}$ dB			Change compared to current traffic sound level (dB)		Combined impact	Significant effect
			Without the AP2 revised scheme (2031)	Typical month during construction	Peak month during construction	Typical month during construction	Peak month during construction		
Ashley Road	Between Mereside Road and Rostherne Lane	R:8 (5) NR:1	61.9	64.1	66.8	2.2	4.9	-	MA06-C-N11[56]
Chester Road	Between Millington Lane and A556 slip road	R:0 (0) NR:1	56.7	58.6	61.8	1.9	5.1	-	MA06-C-N4[57]
Rostherne Lane	Between Marsh Lane and New Road	R:0 (0) NR:0	46.4	46.8	48.1	0.4	1.7	-	~[58]
Rostherne Lane	Between New Road and Chester Road	R:3 (3) NR:0	43.8	48.3	50.5	4.5	6.5	-	~[58]
Arthog Road	Between the B5162 Park Road and Bankhall Lane	R:50 (221) NR:0	56.6	57.8	60.0	1.2	3.4	-	MA06-C-C8[59]

[56] Likely Significant effect added at 2 Dairy Cottage (Holiday let) (as a result of new construction traffic data for AP2 revised scheme).

[57] Different likely significant effect at Bucklow Manor Care Home (as a result of new construction traffic data for AP2 revised scheme).

[58] Likely significant effect removed at Rostherne Lane (as a result of new construction traffic data for AP2 revised scheme).

[59] Likely significant effect added at Hale Barns (as a result of new construction traffic data for AP2 revised scheme).

Road name	Portion of road affected	Number of properties affected (approx.)	Daytime traffic sounds levels, $L_{pA10,\ 18\ hr}$ dB			Change compared to current traffic sound level (dB)		Combined impact	Significant effect
			Without the AP2 revised scheme (2031)	Typical month during construction	Peak month during construction	Typical month during construction	Peak month during construction		
Bankhall Lane	Between Arthog Road and Hill Top	R:6 (221) NR:0	57.3	58.5	60.2	1.2	2.9[60]	-	MA06-C-C8[59]
Bankhall Lane	Between Hill Top and Broad Lane	R:12 (221) NR:0	57.5	59.1	61.7	1.6	4.2	-	MA06-C-C8[59]
Broad Lane	Between Hale Road and Bankhall Lane	R:25 (221) NR:0	35.7	50.6	57.4	14.9	21.7[61]	-	MA06-C-C8[59]
Broad Lane/Hawley Lane	Between Bankhall Lane and Chapel Lane	R:41 (221) NR:0	57.5	59.7	63.3	2.2	5.8	-	MA06-C-C8[59]
Chapel Lane	Between Hawley Lane and High Elm Road	R:24 (221) NR:0	56.9	59.4	63.2	2.5	6.3	-	MA06-C-C8[59]
Elmridge Drive/High Elm Road	Between Chapel Lane and the A538 Hale Road	R:36 (221) NR:0	53.4	54.4	59.2	1.0	5.8	-	MA06-C-C8[59]

[60] Overall change in sound level at receptors likely to be greater than 3dB when considering influence from adjoining road links.

[61] Overall change in sound levels at receptors likely to be reduced when considering influence from adjoining road links.

Road name	Portion of road affected	Number of properties affected (approx.)	Daytime traffic sounds levels, $L_{pA10,\ 18\ hr}$ dB			Change compared to current traffic sound level (dB)		Combined impact	Significant effect
			Without the AP2 revised scheme (2031)	Typical month during construction	Peak month during construction	Typical month during construction	Peak month during construction		
High Elm Road	Between Greengate and the A538 Hale Road	R:27 (221) NR:0	59.9	62.2	65.4	2.3	5.5	O	MA06-C-C8[59]

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

Airborne sound levels used in other assessments

2.4.29 There is no change in the airborne sound levels used in other assessments compared to the main ES or, where relevant, the SES2.

2.5 Davenport Green to Ardwick (MA07)

Part 1: Supplementary Environmental Statement 2

Baseline

Existing acoustic environment

2.5.1 Road traffic information, such as flows and speeds, is used to determine the baseline sound levels. Since the production of the main ES, additional road traffic information has been obtained for the SES2 scheme and AP2 revised scheme. Where relevant, this road traffic information has been used to update the existing baseline sound modelling. This has led to updates to the existing baseline sound levels at receptors in the community of Didsbury West and Ardwick within the Davenport Green to Ardwick area.

2.5.2 There are AP2 amendments which involve works close to properties which were not included within the main ES. The additional baseline sound levels for these properties are presented in Table 25.

Existing baseline data collection methodology

2.5.3 The baseline collection methodology as outlined in the main ES Volume 5, Appendix: SV-001-00000 is not required to be modified by the SES2 changes.

Existing baseline sound measurement locations

2.5.4 No additional baseline sound measurement locations were identified as required by the design changes identified in the SES2 scheme.

Existing baseline sound modelling

2.5.5 Road traffic information, such as flows and speeds, is used to determine baseline sound levels. Additional road traffic information has been obtained for the SES2 scheme and AP2 revised scheme. Where relevant, this road traffic information has been used to update the existing baseline sound modelling.

Future baseline methodology

2.5.6 No changes to the future baseline methodology were required by the design changes identified in the SES2 scheme though additional road traffic information has been used to update the future baseline sound modelling. Where no updates to baseline sound levels are required, the baseline sound modelling information is as described in Section 13 in Volume 2, Community Area report: Davenport Green to Ardwick (MA07) of the main ES.

Baseline sound levels

2.5.7 Baseline sound levels which have been updated for the SES2 scheme are presented for assessment locations 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).

2.5.8 These values are presented in Table 25. 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 the main ES 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.

2.5.9 For all other assessment locations not presented in Table 25, the baseline sound levels used in the original scheme remain relevant based on the changes identified in the SES2 scheme.

Table 25: MA07 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 (2039)				
			Daytime L_{pAeq}	Evening/ weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
615178	Anthony Close, Manchester	-	51	51	48	51	48	51	78	4,A,i,b
615181	Anthony Close, Manchester	-	58	58	55	58	55	58	85	4,A,i,b
615183	Anthony Close, Manchester	-	45	45	42	45	42	57	84	5,A,i,b
615184	Anthony Close, Manchester	-	60	60	57	60	57	60	87	4,A,i,b
616913	Lancasterian School, Manchester	-	63	60	56	63	57	62	67	3,A,i,b
616914	West Didsbury Police Station, Elizabeth Slinger Road, Manchester	-	54	52	48	54	47	52	57	3,A,i,b
616915	Withington Community Hospital, Burton Road, Manchester	-	61	58	54	60	54	59	64	3,A,i,b
616916	Burton Road, Manchester	-	63	61	57	63	57	62	67	3,A,i,b
616917	Barlow Moor Court, Manchester	-	48	46	41	48	42	47	53	3,A,i,b
616918	Moorfield Road. Manchester	-	48	45	41	48	41	46	53	3,A,i,b

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2039)				
			Daytime L_{pAeq}	Evening/ weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
616919	Barlow Moor Road, Manchester	-	66	64	59	66	60	65	70	3,A,i,b
616920	Barlow Moor Road, Manchester	-	62	60	56	62	56	61	66	3,A,i,b
616921	Darley Avenue Manchester	-	47	45	40	47	41	46	51	3,A,i,b
616922	Darley Avenue, Manchester	-	47	45	40	47	41	46	51	3,A,i,b
616923	Barlow Moor Road, Manchester	-	62	60	56	62	56	61	66	3,A,i,b
616924	The Beeches, Manchester	-	66	63	59	66	59	64	69	3,A,i,b
616925	The Beeches, Manchester	-	47	44	40	47	40	45	52	3,A,i,b
616926	Stanton Avenue, Manchester	-	47	45	40	47	41	46	51	3,A,i,b
616927	The Beeches, Manchester	-	48	46	41	48	42	47	52	3,A,i,b
616928	The Beeches, Manchester	-	47	44	40	47	40	45	51	3,A,i,b
616929	The Beeches, Manchester	-	46	44	39	46	40	45	51	3,A,i,b
616930	Manchester Islamic Educational Trust Campus, Barlow Moor Road, Manchester	-	47	45	40	47	41	46	51	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 (2039)				
			Daytime L_{pAeq}	Evening/ weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
616931	Barlow Moor Road, Manchester	-	66	63	59	65	59	64	69	3,A,i,b
616932	Barlow Moor Road, Manchester	-	66	63	59	66	59	64	69	3,A,i,b
616933	Burton Road, Manchester	-	64	61	57	63	57	62	67	3,A,i,b
616934	Burton Road, Manchester and northern grove, Manchester	-	61	58	54	60	54	59	64	3,A,i,b
616935	Burton Road, Manchester and Northern Grove	-	46	43	39	46	40	44	54	3,A,i,b
616936	Burton Road and Northern Grove, Manchester	-	61	58	54	60	54	59	64	3,A,i,b
616937	Northern Grove and Clyde Road, Manchester	-	42	39	35	42	35	40	56	3,A,i,b
616938	Northern Grove and Clyde Road, Manchester	-	<40	<35	<30	<43	<37	42	53	3,C,i,b
616939	Clyde Road and Old Lansdowne Road, Manchester	-	43	40	36	43	36	41	55	3,A,i,b
616940	Clyde Road and Old Lansdowne Road	-	48	45	41	48	42	47	55	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 (2039)				
			Daytime L_{pAeq}	Evening/ weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
616941	Old Lansdowne Road Manchester and committed development (Map Book ref.: MA07/584A)	-	44	41	37	44	37	42	56	3,A,i,b
616942	Barlow Moor Road and Agalia Gardens, Manchester	-	64	61	57	64	58	63	68	3,A,i,b
616943	Barton Moor Road, Manchester	-	66	63	59	66	59	64	69	3,A,i,b
616944	Tripps Mews, Manchester	-	43	40	36	43	36	41	57	3,A,i,b
616945	Browmere Drive, Manchester	-	65	62	58	65	59	64	69	3,A,i,b
616946	Didsbury Central Mosque, Manchester	-	66	63	59	65	59	64	69	3,A,i,b
616947	Barlow Moor Road, Manchester	-	64	61	57	64	58	63	68	3,A,i,b
616948	Barlow Moor Road, Manchester	-	64	62	58	64	58	63	68	3,A,i,b
616949	Northern Grove and Clyde Road, Manchester	-	49	47	42	49	43	48	54	3,A,i,b
616950	Barlow Moor Road, Manchester	-	65	62	58	64	58	63	68	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 (2039)				
			Daytime L_{pAeq}	Evening/ weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
616951	Bright Horizons Day Nursery, Manchester	-	59	56	52	58	52	57	62	3,A,i,b
616952	Langham Court, Manchester	-	45	43	39	45	39	44	49	3,A,i,b
616954	Optima Consultancy (Offices) Barlow Moor Road, Manchester	-	62	60	56	62	56	61	66	3,A,i,b
616955	Moor Allerton Preparatory School, Manchester	-	59	57	53	59	53	58	63	3,A,i,b
616956	Barlow Moor Road, Manchester	-	60	58	54	60	54	59	64	3,A,i,b
616957	Mersey Road, Manchester	-	54	51	47	54	47	52	57	3,A,i,b
616958	Mersey Road, Manchester	-	48	45	41	48	41	46	54	3,A,i,b
616959	Mersey Road. Manchester	-	42	40	36	42	36	41	46	3,A,i,b
616960	Langham Court, Manchester	-	47	45	41	47	41	46	51	3,A,i,b
616961	Mersey Road, Manchester	-	46	44	40	46	40	45	50	3,A,i,b
616962	The Hollies, Manchester	-	47	45	41	47	41	46	51	3,A,i,b
616963	The Hollies, Manchester	-	47	44	40	47	40	45	50	3,A,i,b
616964	The Hollies, Manchester	-	46	44	40	46	40	45	50	3,A,i,b

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2039)				
			Daytime L_{pAeq}	Evening/ weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
616965	Mersey meadows. Manchester	-	48	46	42	48	42	47	52	3,A,i,b
616966	Mersey Meadows, Manchester	-	48	45	41	48	42	47	52	3,A,i,b
616967	Mersey Meadows, Manchester	-	47	45	41	47	41	46	51	3,A,i,b
616968	Mersey Meadows, Manchester	-	47	45	40	47	41	46	51	3,A,i,b
616969	Larkers, Manchester	-	48	46	42	48	42	47	52	3,A,i,b
616970	Palatine Road and Barlow Moor Road, Manchester	-	48	45	41	48	41	46	51	3,A,i,b
616971	Meridian Place and Browmere Drive, Manchester	-	46	43	39	46	39	44	51	3,A,i,b
616972	Ashton Old Road (Nursery), Manchester and committed development (Map Book ref.: MA07/559S)	-	68	65	61	68	61	66	71	3,A,i,b
616987	Brennock Close, Manchester	-	47	44	40	46	40	44	62	5,A,i,b
616988	Brennock Close and Kylemore Way, Manchester	-	45	43	39	45	39	43	61	3,A,i,b

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
Reference	Area represented		For construction sound assessment (2025)			For operational sound assessment (2039)				
			Daytime L_{pAeq}	Evening/ weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
616989	Falconwood Way, Manchester	-	62	60	56	62	56	61	67	3,A,i,b
616990	Falconwood Way, Manchester	-	62	59	55	61	55	60	66	3,A,i,b
617013	The Royals (Offices), Wythenshawe, Manchester	-	71	68	64	72	65	70	75	3,A,i,b
617014	Anthony Close, Manchester	-	60	60	57	60	57	60	87	4,A,i,b
617015	Anthony Close, Manchester	-	53	53	50	53	50	53	80	4,A,i,b
617016	Britannia Country House Hotel, Palatine Road, Manchester	-	47	45	41	48	41	46	51	3,A,i,b
617027	Palatine Road, Manchester	-	52	49	45	52	46	51	56	3,A,i,b
617028	Mersey Road, Manchester	-	52	49	45	52	46	51	56	3,A,i,b

Ground-borne sound and vibration

2.5.10 The SES2 changes do not change the likely significant ground-borne sound and vibration effects identified in the main ES.

Airborne sound: direct impacts and effects

2.5.11 Activities associated with the construction phases of the SES2 Scheme will generate airborne sound. 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.

2.5.12 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.

2.5.13 The results, impact criteria and significance criteria for the assessment of the SES2 Scheme at non-residential receptors are presented in Table 26. Explanation of the information within Table 26 is provided in Volume 5, Appendix: SV-001-00000 of the main ES, with the additional notes presented in Table 3.

2.5.14 The principal SES2 changes responsible for the change in construction noise effect at the specific assessment locations reported in the following tables, are identified in the associated footnotes.

Table 26: MA07 Assessment of construction noise at non-residential receptors (SES2 scheme)

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										
616972	Ashton Old Road (Nursery), Manchester and committed development (Map Book ref.: MA07/559S)	71/78	-/-	-	-	Day: Highway works	1	A3	T	-	-	D5	-	-	MA07-C-N15[62]

[62] New likely significant effect at Ashton Old Road (Nursery), Manchester (committed development Map Book ref.: MA07/559S) (as a result of new committed development data).

Airborne sound levels used in other assessments

2.5.15 There is no change in the airborne sound levels used in other assessments compared to the main ES due to SES2 changes.

Part 2: Additional Provision 2 Environmental Statement

Construction

Effects during construction

Introduction

2.5.16 The assessment is reported first for ground-borne vibration and then for airborne sound. Under each of these headings, the results of the quantitative identification of impacts, effects and significant effects are presented. The significant effects and the evidence used to support these conclusions are presented in the SES2 and AP2 ES Volume 2, Community Area report: Davenport Green to Ardwick (MA07).

Avoidance and mitigation measures

2.5.17 The avoidance and mitigation measures are set out in the main ES Volume 2, Community Area report: Davenport Green to Ardwick (MA07), Section 13.

Identification of impacts and effects

2.5.18 Assessment locations defined for the quantitative assessment of construction impacts are shown on SES2 and AP2 ES, Volume 5, Sound, noise and vibration Map Book: Map Series SV-03.

Ground-borne sound and vibration

2.5.19 Activities associated with the construction phases of the AP2 revised 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.

2.5.20 The results, impact criteria and significance criteria for the assessment of the AP2 revised scheme at residential and non-residential receptors are presented in Table 27. Explanation of the information within Table 27 is provided in Volume 5, Appendix: SV-001-00000 of the main ES, with additional notes presented in Table 3.

2.5.21 The amendment responsible for the change in construction ground-borne sound and vibration effect at the specific assessment locations reported in the following table, are identified in the associated footnotes.

Table 27: MA07 Assessment of construction vibration at residential and non-residential receptors (AP2 revised scheme)

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	Type of receptor	Receptor design	Unique feature	Combined impact	Impact duration [m]	
			Day 07:00 – 23:00	Night 23:00 – 07:00									
616965	Mersey meadows. Manchester	0.6	0.08/0.35	-/-	Site set up (vibratory roller)	A	6	R	T	-	O	D 3	MA07-C-C7[63]
616966	Mersey Meadows, Manchester	0.3	0.04/0.24	-/-	Site set up (vibratory roller)	A	7	R	T	-	-	D 3	~
616967	Mersey Meadows, Manchester	0.2	0.04/0.12	-/-	Site set up (vibratory roller)	NA	10	R	T	-	-		
617013	The Royals (Offices), Wythenshawe, Manchester	2.0	0.04/<0.80	-/-	Site set up (vibratory roller)	A	1	V3	T	-	O	D 3	MA07-C-N2[64]
617016	Britannia Country House Hotel, Palatine Road, Manchester	0.2	0.04/0.16	-/-	Site set up (vibratory roller)	NA	1	V2	T	-	-		

[63] New likely significant effect at Mersey Meadows (as a result of the relocation of vent shaft and headhouse from Palatine Road to the Hollies (AP2-007-003)).

[64] Different likely significant effect at The Royals (Offices) (as a result of the modifications to Manchester Tunnel Altrincham Road vent shaft (AP2-007-002)).

Airborne sound: direct impacts and effects

2.5.22 Activities associated with the construction phases of the AP2 revised scheme will generate airborne sound. 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.

2.5.23 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.

2.5.24 The results, impact criteria and significance criteria for the assessment of the AP2 revised scheme at residential and non-residential receptors are presented in Table 28 and Table 29. Explanation of the information within Table 28 and Table 29 is provided in Volume 5, Appendix: SV-001-00000 of the main ES, with additional notes presented in Table 3.

2.5.25 The amendment responsible for the change in construction noise effect at the specific assessment locations reported in the following tables, are identified in the associated footnotes.

Table 28: MA07 Assessment of construction noise at residential receptors (AP2 revised scheme)

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	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											
615178	Anthony Close, Manchester	67/67[A]	38/40[B]	38/40[C]	Day: Culvert diversion Evening: Bored tunnel works Night: Bored tunnel works	A	7	R	T	-	-	D4	-	-	MA07-C-C9[65]
615181	Anthony Close, Manchester	62/67[A]	43/46[C]	43/46[C]	Day: Culvert diversion Evening: Bored tunnel works Night: Bored tunnel works	A	8	R	T	H	-	D4	-	-	MA07-C-C9[65]
615183	Anthony Close, Manchester	77/77[A]	41/43[A]	41/43[B]	Day: Culvert diversion Evening: Bored tunnel works Night: Bored tunnel works	S	4	R	T	-	-	D5	-	NI[66]	MA07-C-C9[65]

[65] New likely significant effect at Anthony Close, Manchester (as a result of diversion of Blackbrook Culvert (AP2-007-006)).

[66] Only two of these four properties qualify for noise insulation under the draft Code of Construction Practice (CoCP) Volume 5, Appendix: CT-002-00000 of the main ES.

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	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											
615184	Anthony Close, Manchester	82/82[B]	40/42[C]	40/42[C]	Day: Culvert diversion Evening: Bored tunnel works Night: Bored tunnel works	S	6	R	T	H	-	D5	-	NI[67]	MA07-C-C9[65]
616916	Burton Road, Manchester	55/58[B]	-/-[C]	-/-[C]	Day: Demolitions	NA	7	R	T	H	-	-	-	-	-
616917	Barlow Moor Court, Manchester	42/50[A]	30/30[A]	30/30[B]	Day: Demolitions Evening: Vent shaft construction Night: Vent shaft construction	NA	12	R	T	-	-	-	-	-	-
616918	Moorfield Road. Manchester	39/46[A]	-/-[A]	-/-[B]	Day: Demolitions	NA	50	R	T	-	-	-	-	-	-
616919	Barlow Moor Road, Manchester	50/54[C]	30/30[C]	30/30[C]	Day: Demolitions Evening: Vent shaft construction Night: Vent shaft construction	NA	4	R	T	H	-	-	-	-	-
616920	Barlow Moor Road, Manchester	40/43[B]	-/-[C]	-/-[C]	Day: Demolitions	NA	13	R	T	H	-	-	-	-	-

[67] Only three of these six properties qualify for noise insulation under the draft Code of Construction Practice (CoCP) Volume 5, Appendix: CT-002-00000 of the main ES.

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	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											
616921	Darley Avenue Manchester	45/51[A]	32/32[A]	32/32[B]	Day: Highway works Evening: Vent shaft construction Night: Vent shaft construction	NA	6	R	T	-	-	-	-	-	-
616922	Darley Avenue, Manchester	53/56[A]	39/39[A]	39/39[B]	Day: General site works Evening: Vent shaft construction Night: Vent shaft construction	NA	6	R	T	-	-	-	-	-	-
616923	Barlow Moor Road, Manchester	41/45[B]	-/-[C]	-/-[C]	Day: Demolitions	NA	6	R	T	H	-	-	-	-	-
616924	The Beeches, Manchester	58/61[C]	-/-[C]	-/-[C]	Day: Demolitions	NA	7	R	T	H	-	-	-	-	-
616925	The Beeches, Manchester	76/78[A]	38/38[A]	38/38[B]	Day: Demolitions Evening: Vent shaft construction Night: Vent shaft construction	S	38	R	T	-	-	D8	-	NI[68]	MA07-C-C8[69]

[68] Only 22 of these 38 properties qualify for noise insulation under the draft Code of Construction Practice (CoCP) Volume 5, Appendix: CT-002-00000 of the main ES.

[69] New likely significant effect at The Beeches, Manchester (as a result of the relocation of vent shaft and headhouse from Palatine Road to the Hollies (AP2-007-003)).

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	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											
616926	Stanton Avenue, Manchester	57/65[A]	42/42[A]	42/42[B]	Day: Highway works Evening: Vent shaft construction Night: Vent shaft construction	NA	49	R	T	-	-	-	-	-	-
616927	The Beeches, Manchester	59/65[A]	45/45[A]	45/45[B]	Day: Highway works Evening: Vent shaft construction Night: Vent shaft construction	NA	36	R	T	-	-	-	-	-	-
616928	The Beeches, Manchester	70/74[A]	41/41[A]	41/41[B]	Day: Highway works Evening: Vent shaft construction Night: Vent shaft construction	A	9	R	T	-	-	D3	-	-	MA07-C-C8[69]
616929	The Beeches, Manchester	76/77[A]	40/40[A]	40/40[A]	Day: Highway works Evening: Vent shaft construction Night: Vent shaft construction	S	12	R	T	-	-	D2	-	NI	MA07-C-C8[69]
616931	Barlow Moor Road, Manchester	60/63[C]	-/-[C]	-/-[C]	Day: Demolitions	NA	24	R	T	H	-	-	-	-	-
616932	Barlow Moor Road, Manchester	72/74[C]	38/38[C]	38/38[C]	Day: Demolitions Evening: Vent shaft construction Night: Vent shaft construction	NA	25	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	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											
616933	Burton Road, Manchester	62/65[B]	-/-[C]	-/-[C]	Day: Demolitions	NA	7	R	T	H	-	-	-	-	-
616934	Burton Road, Manchester and northern grove, Manchester	43/50[B]	-/-[C]	-/-[C]	Day: Demolitions	NA	26	R	T	H	-	-	-	-	-
616935	Burton Road, Manchester and Northern Grove	59/61[A]	31/31[A]	31/31[A]	Day: Demolitions Evening: Vent shaft construction Night: Vent shaft construction	NA	13	R	T	-	-	-	-	-	-
616936	Burton Road and Northern Grove, Manchester	40/47[B]	-/-[C]	-/-[C]	Day: Demolitions	NA	91	R	T	H	-	-	-	-	-
616937	Northern Grove and Clyde Road, Manchester	43/47[A]	-/-[A]	-/-[A]	Day: Demolitions	NA	59	R	T	-	-	-	-	-	-
616938	Northern Grove and Clyde Road, Manchester	51/53[A]	-/-[A]	-/-[A]	Day: Demolitions	NA	17	R	T	-	-	-	-	-	-
616939	Clyde Road and Old Lansdowne Road, Manchester	39/46[A]	-/-[A]	-/-[A]	Day: Demolitions	NA	69	R	T	-	-	-	-	-	-
616940	Clyde Road and Old Lansdowne Road	40/48[A]	-/-[A]	-/-[B]	Day: Demolitions	NA	15	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	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											
616941	Old Lansdowne Road Manchester and committed development (Map Book ref.: MA07/584A)	39/46[A]	-/-[A]	-/-[A]	Day: Demolitions	NA	23	R	T	-	-	-	-	-	-
616942	Barlow Moor Road and Agalia Gardens, Manchester	57/60[B]	-/-[C]	-/-[C]	Day: Demolitions	NA	8	R	T	H	-	-	-	-	-
616943	Barton Moor Road, Manchester	53/56[C]	-/-[C]	-/-[C]	Day: Demolitions	NA	9	R	T	H	-	-	-	-	-
616944	Tripps Mews, Manchester	36/44[A]	-/-[A]	-/-[A]	Day: Demolitions	NA	1	R	T	-	-	-	-	-	-
616945	Browmere Drive, Manchester	38/41[C]	-/-[C]	-/-[C]	Day: Demolitions	NA	6	R	T	H	-	-	-	-	-
616947	Barlow Moor Road, Manchester	76/79[B]	-/-[C]	-/-[C]	Day: Demolitions	S	12	R	T	H	-	D6	-	NI	MA07-C-C8[70]
616948	Barlow Moor Road, Manchester	65/68[B]	-/-[C]	-/-[C]	Day: Demolitions	NA	11	R	T	H	-	-	-	-	-
616949	Northern Grove and Clyde Road, Manchester	62/64[A]	-/-[A]	-/-[B]	Day: Demolitions	NA	25	R	T	-	-	-	-	-	-

[70] New likely significant effect at Barlow Moor Road, Manchester (as a result of the relocation of vent shaft and headhouse from Palatine Road to the Hollies (AP2-007-003)).

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	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											
616950	Barlow Moor Road, Manchester	60/63[C]	30/31[C]	30/31[C]	Day: Demolitions Evening: Vent shaft construction Night: Vent shaft construction	NA	3	R	T	H	-	-	-	-	-
616952	Langham Court, Manchester	55/63[A]	39/39[A]	39/39[A]	Day: Highway works Evening: Vent shaft construction Night: Vent shaft construction	NA	65	R	T	-	-	-	-	-	-
616956	Barlow Moor Road, Manchester	49/52[B]	-/-[C]	-/-[C]	Day: Demolitions	NA	10	R	T	H	-	-	-	-	-
616957	Mersey Road, Manchester	42/51[A]	-/30[B]	-/30[C]	Day: Demolitions Evening: Vent shaft construction Night: Vent shaft construction	NA	16	R	T	-	-	-	-	-	-
616958	Mersey Road, Manchester	46/51[A]	34/34[A]	34/34[B]	Day: Highway works Evening: Vent shaft construction Night: Vent shaft construction	NA	45	R	T	-	-	-	-	-	-
616959	Mersey Road. Manchester	46/49[A]	34/34[A]	34/34[A]	Day: Highway works Evening: Vent shaft construction Night: Vent shaft construction	NA	45	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	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											
616960	Langham Court, Manchester	69/72[A]	42/42[A]	42/42[B]	Day: Highway works Evening: Vent shaft construction Night: Vent shaft construction	A	41	R	T	-	-	D3	-	-	MA07-C-C8[71]
616961	Mersey Road, Manchester	61/68[A]	40/40[A]	40/40[B]	Day: Highway works Evening: Vent shaft construction Night: Vent shaft construction	A	2	R	T	-	-	D2	-	-	MA07-C-C8[72]
616962	The Hollies, Manchester	70/74[A]	45/45[A]	45/45[B]	Day: Highway works Evening: Vent shaft construction Night: Vent shaft construction	A	4	R	T	-	-	D2	-	-	MA07-C-C8[73]
616963	The Hollies, Manchester	58/66[A]	37/37[A]	37/37[B]	Day: Highway works Evening: Vent shaft construction Night: Vent shaft construction	A	14	R	T	-	-	D1	-	-	MA07-C-C8[73]

[71] New likely significant effect at Langham Court, Manchester (as a result of the relocation of vent shaft and headhouse from Palatine Road to the Hollies (AP2-007-003)).

[72] New likely significant effect at Mersey Road, Manchester (as a result of the relocation of vent shaft and headhouse from Palatine Road to the Hollies (AP2-007-003)).

[73] New likely significant effect at The Hollies, Manchester (as a result of the relocation of vent shaft and headhouse from Palatine Road to the Hollies (AP2-007-003)).

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	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											
616964	The Hollies, Manchester	52/60[A]	40/40[A]	40/40[B]	Day: Highway works Evening: Vent shaft construction Night: Vent shaft construction	NA	24	R	T	-	-	-	-	-	-
616965	Mersey meadows. Manchester	70/74[A]	55/55[A]	55/55[B]	Day: Highway works Evening: Vent shaft construction Night: Vent shaft construction	A	6	R	T	-	-	D62 N59	-	-	MA07-C-C7[74]
616966	Mersey Meadows, Manchester	65/73[A]	49/49[A]	49/49[B]	Day: Highway works Evening: Vent shaft construction Night: Vent shaft construction	A	7	R	T	-	-	D13	-	-	MA07-C-C8[74]
616967	Mersey Meadows, Manchester	58/62[A]	43/43[A]	43/43[B]	Day: General site works Evening: Vent shaft construction Night: Vent shaft construction	NA	10	R	T	-	-	-	-	-	-

[74] New likely significant effect at Mersey Meadows, Manchester (as a result of the relocation of vent shaft and headhouse from Palatine Road to the Hollies (AP2-007-003)).

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	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											
616968	Mersey Meadows, Manchester	55/62[A]	41/41[A]	41/41[B]	Day: Highway works Evening: Vent shaft construction Night: Vent shaft construction	NA	8	R	T	-	-	-	-	-	-
616969	Larkers, Manchester	54/59[A]	40/41[A]	40/41[B]	Day: Highway works Evening: Vent shaft construction Night: Vent shaft construction	NA	33	R	T	-	-	-	-	-	-
616970	Palatine Road and Barlow Moor Road, Manchester	47/53[A]	35/35[A]	35/35[B]	Day: Highway works Evening: Vent shaft construction Night: Vent shaft construction	NA	77	R	T	-	-	-	-	-	-
616971	Meridian Place and Browmere Drive, Manchester	41/46[A]	-/30[A]	-/30[A]	Day: Demolitions Evening: Vent shaft construction Night: Vent shaft construction	NA	70	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	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											
616972	Ashton Old Road (Nursery), Manchester and committed development (Map Book ref.: MA07/559S)	77/79	-/-	-	Day: Highway works	A	1	A3	T	-	-	D19	-	-	MA07-C-N15[75]
616987	Brennock Close, Manchester	47/50[A]	-/30[A]	-/30[B]	Day: General site works Evening: Bored tunnel works Night: Bored tunnel works	NA	6	R	T	-	-	-	-	-	-
616988	Brennock Close and Kylemore Way, Manchester	47/50[A]	-/31[A]	-/31[A]	Day: General site works Evening: Bored tunnel works Night: Bored tunnel works	NA	4	R	T	-	-	-	-	-	-
616989	Falconwood Way, Manchester	51/54[B]	39/43[C]	39/43[C]	Day: General site works Evening: Bored tunnel works Night: Bored tunnel works	NA	32	R	T	H	-	-	-	-	-

[75] Different likely significant effect at Ashton Old Road (Nursery), Manchester (committed development Map Book ref.: MA07/559S) (as a result of the reconfiguration of Ardwick construction sidings (AP2 007-009)).

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	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											
616990	Falconwood Way, Manchester	50/53[B]	38/42[C]	38/42[C]	Day: Demolitions Evening: Bored tunnel works Night: Bored tunnel works	NA	35	R	T	H	-	-	-	-	-
617014	Anthony Close, Manchester	70/72[B]	43/45[C]	43/45[C]	Day: Culvert diversion Evening: Bored tunnel works Night: Bored tunnel works	A	4	R	T	H	-	D6	-	-	MA07-C-C9[76]
617015	Anthony Close, Manchester	60/66[A]	43/45[B]	43/45[C]	Day: Culvert diversion Evening: Bored tunnel works Night: Bored tunnel works	A	12	R	T	H	-	D1	-	-	MA07-C-C9[76]
617027	Palatine Road, Manchester	69/71[A]	54/54[A]	54/54[C]	Day: General site works Evening: Vent shaft construction	A	58	R	T	-	-	D58	-	-	MA07-C-C8[77]

[76] New likely significant effect at Anthony Close, Manchester (as a result of the diversion of Blackbrook Culvert (AP2-007-006)).

[77] New likely significant effect at Palatine Road, Manchester (as a result of the relocation of vent shaft and headhouse from Palatine Road to the Hollies (AP2-007-003)).

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	Type of receptor	Receptor design	Existing environment	Unique feature	Impact duration (Months)	Combined impact	Mitigation effect	
		Day 07:00 – 19:00	Evening 19:00 – 23:00	Night 23:00 – 07:00											
					Night: Vent shaft construction										
617028	Mersey Road, Manchester	66/68[A]	52/52[A]	52/52[C]	Day: General site works Evening: Vent shaft construction Night: Vent shaft construction	A	52	R	T	-	-	D26	-	-	MA07-C-C8[78]

[78] New likely significant effect at Mersey Road, Manchester (as a result of the relocation of vent shaft and headhouse from Palatine Road to the Hollies (AP2-007-003)).

Table 29: MA07 Assessment of construction noise at non-residential receptors (AP2 revised scheme)

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	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										
616913	Lancasterian School, Manchester	44/52	-/30	-	-	Day: Demolitions Night: Vent shaft construction	1	A3	T	H	-	-	-	-	-
616914	West Didsbury Police Station, Elizabeth Slinger Road, Manchester	41/43	-/30	-	-	Day: Demolitions Night: Vent shaft construction	1	A3	T	-	-	-	-	-	-
616915	Withington Community Hospital, Burton Road, Manchester	40/48	-/-	-	-	Day: Demolitions	1	A3	T	H	-	-	-	-	-
616930	Manchester Islamic Educational Trust Campus, Barlow Moor Road, Manchester	79/81	40/40	31	2	Day: Highway works Night: Vent shaft construction	1	A3	T	-	-	D13	-	-	MA07-C-N6[79]
616946	Didsbury Central Mosque, Manchester	75/78	-/-	10	-	Day: Demolitions	1	A2	T	H	-	D6	-	-	MA07-C-N8[80]

[79] New likely significant effect at Manchester Islamic Education Trust Campus, Manchester (as a result of the relocation of vent shaft and headhouse from Palatine Road to the Hollies (AP2-007-003)).

[80] New likely significant effect at Didsbury Central Mosque, Manchester (as a result of the relocation of vent shaft and headhouse from Palatine Road to the Hollies (AP2-007-003)).

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	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										
616951	Bright Horizons Day Nursery, Manchester	69/72	-/-	10	-	Day: Demolitions	1	A3	T	H	-	D6	-	-	MA07-C-N7[81]
616954	Optima Consultancy (Offices) Barlow Moor Road, Manchester	58/61	-/-	1	-	Day: Demolitions	1	A4	T	H	-	-	-	-	$
616955	Moor Allerton Preparatory School, Manchester	40/48	-/-	-	-	Day: Demolitions	1	A3	T	H	-	-	-	-	-
617016	Britannia Country House Hotel, Palatine Road, Manchester	69/71	55/55	21	11	Day: General site works Night: Vent shaft construction	1	A3	T	-	-	D62 N60	-	-	MA07-C-N5[82]

[81] New likely significant effect at Bright Horizons Day Nursery, Manchester (as a result of the relocation of vent shaft and headhouse from Palatine Road to the Hollies (AP2-007-003)).

[82] New likely significant effect at Britannia Country House Hotel, Manchester (as a result of the relocation of vent shaft and headhouse from Palatine Road to the Hollies (AP2-007-003)).

Airborne sound: indirect effects

2.5.26 Construction road traffic associated with the construction phases of the SES2 scheme and AP2 amendments would generate airborne noise. Given that the construction traffic model information is not available for the SES2 changes and AP2 amendments separately, the in-combination effects of SES2 changes and AP2 amendments is presented in the AP2 section. The change in traffic noise level at a reference distance of 10m from the edge of the nearside carriageway resulting from the presence of construction traffic for a given road has been predicted. Data has 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 30 as well as road links which have effects removed as a result of the SES2 scheme and AP2 amendments.

2.5.27 Explanation of the information within Table 31 is provided in in Table 6 and Volume 5, Appendix: SV-001-00000 of the main ES.

Table 30: MA07 Assessment of construction traffic noise levels – indirect effects (AP2 revised scheme)

Road name	Portion of road affected	Number of properties affected (approx.)	Daytime traffic sound levels $L_{Aeq,16hr}$ dB			Change compared to current traffic sound level (dB)		Combined impact	Significant effect
			Without the Proposed Scheme (2026)	Typical month during construction	Peak month during construction	Typical month during construction	Peak month during construction		
Kingsway	Mauldeth Road and Grangethorpe Drive	R: 45	68.7	68.8	69.0	0.1	0.3	No	[83]
Firbank Road	Between Greenbrow Road and Highdales Road	R: 45 (58) NR: 1	50.5	55.2	60.5	4.7	10.0	No	MA07-C-C10[84] MA07-C-N9[85]
Highdales Road	Between Firbank Road and Hollyhedge Road	R: 13 (58)	57.1	58.9	61.2	1.8	4.1	No	MA07-C-C10[86]
Birch Street	Malpas Street and Runhall Close	R: 36	49.8	52.9	56.3	3.1	5.2	No	MA07-C-C11[87]

[83] Likely significant effect removed at Kingsway (as a result of new construction traffic data for AP2 revised scheme).

[84] New likely significant effect at Firbank Road (as a result of new construction traffic data for AP2 revised scheme).

[85] New likely significant effect at Noddy's Day Nursery (as a result of new construction traffic data for AP2 revised scheme).

[86] New likely significant effect at Highdales Road (as a result of new construction traffic data for AP2 revised scheme).

[87] New likely significant effect at Birch Street (as a result of new construction traffic data for AP2 revised scheme).

Road name	Portion of road affected	Number of properties affected (approx.)	Daytime traffic sound levels $L_{Aeq,16hr}$ dB			Change compared to current traffic sound level (dB)		Combined impact	Significant effect
			Without the Proposed Scheme (2026)	Typical month during construction	Peak month during construction	Typical month during construction	Peak month during construction		
Old Lane	Louisa Street and Sandywell Street	R: 37 (125)	44.3	48.4	56.0	4.1	8.4	No	MA07-C-C12[88]
Wheler Street	Sandywell Street and Prenton Street	R: 88 (125)	44.3	48.4	56.0	4.1	8.4	No	MA07-C-C12[89]
Parkhouse Street	Wilson Street and Greenside Street	R: 38 NR: 2	54.3	55.3	58.8	1.0	4.5	No	MA07-C-C13[90] MA07-C-N10[91] MA07-C-N11[92]
Albert Street	Bellis Close and Rouse Close	R: 70 (100) NR: 1	54.8	59.2	60.2	4.4	5.4	No	MA07-C-C14[93] MA07-C-N14[94]
Grey Mare Lane	Albert Street and Howarth Close	R: 30 (100)	50.3	54.1	56.7	3.8	6.4	No	MA07-C-C14[95]

[88] New likely significant effect at Old Lane (as a result of new construction traffic data for AP2 revised scheme).

[89] New likely significant effect at Wheler Street (as a result of new construction traffic data for AP2 revised scheme).

[90] New likely significant effect at Parkhouse Street (as a result of new construction traffic data for AP2 revised scheme).

[91] New likely significant effect at Your Nursery Ltd. (as a result of new construction traffic data for AP2 revised scheme).

[92] New likely significant effect at St. Barnabas C of E Primary Academy (as a result of new construction traffic data for AP2 revised scheme).

[93] New likely significant effect at Albert Street (as a result of new construction traffic data for AP2 revised scheme).

[94] New likely significant effect at The Church of the Resurrection and St. Barnabas (as a result of new construction traffic data for AP2 revised scheme).

[95] New likely significant effect at Grey Mare Lane (as a result of new construction traffic data for AP2 revised scheme).

Road name	Portion of road affected	Number of properties affected (approx.)	Daytime traffic sound levels $L_{Aeq,16hr}$ dB			Change compared to current traffic sound level (dB)		Combined impact	Significant effect
			Without the Proposed Scheme (2026)	Typical month during construction	Peak month during construction	Typical month during construction	Peak month during construction		
Grey Mare Lane	Albert Street and Alan Turing Way	NR: 2	56.1	59.5	60.7	3.4	4.6	No	MA07-C-N12[96] MA07-C-N13[97]

[96] New likely significant effect at St. Brigid's Primary School (as a result of new construction traffic data for AP2 revised scheme).

[97] New likely significant effect at The East Manchester Academy (as a result of new construction traffic data for AP2 revised scheme).

Airborne sound levels used in other assessments

2.5.28 The construction sound results contained in this document have been used by other disciplines, namely agriculture, cultural heritage, landscape and visual, communities and socio economics, in their assessments. This includes the information in Table 29. Locations of interest to these other disciplines which may not appear in Table 29 are presented in Table 31.

Table 31: 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							
616994	Coverdale Baptist Church (Residential Shelter, Place of Worship), Coverdale Crescent, Manchester	46/50	34/36	0	0	Day: Culvert diversion Night: Bored tunnel works	-	Y	-	-	-	-

2.6 Manchester Piccadilly Station (MA08)

Part 1: Supplementary Environmental Statement 2

Baseline

Existing acoustic environment

2.6.1 Road traffic information, such as flows and speeds, is used to determine the baseline sound levels. Since the production of the main ES, additional road traffic information has been obtained for the SES2 scheme and AP2 revised scheme. Where relevant, this road traffic information has been used to update the existing baseline sound modelling. This has led to updates to the existing baseline sound levels at receptors in the community of Piccadilly within the Manchester Piccadilly Station area.

2.6.2 There are AP2 amendments which involve works close to properties which were not included within the main ES. The additional baseline sound levels for these properties are presented in Table 32.

Existing baseline data collection methodology

2.6.3 The baseline collection methodology as outlined in the main ES Volume 5, Appendix: SV-001-00000 is not required to be modified by the SES2 changes.

Existing baseline sound measurement locations

2.6.4 No additional baseline sound measurement locations were identified as required by the design changes identified in the SES2 scheme.

Existing baseline sound modelling

2.6.5 Road traffic information, such as flows and speeds, is used to determine baseline sound levels. Additional road traffic information has been obtained for the SES2 scheme and AP2 revised scheme. Where relevant, this road traffic information has been used to update the existing baseline sound modelling.

Future baseline methodology

2.6.6 No changes to the future baseline methodology were required by the design changes identified in the SES2 scheme though additional road traffic information has been used to update the future baseline sound modelling. Where no updates to baseline sound levels are required, the baseline sound modelling information is as described in Section 13 in Volume 2, Community Area report: Manchester Piccadilly Station (MA08) of the main ES.

Baseline sound levels

2.6.7 Baseline sound levels which have been updated for the SES2 scheme are presented for assessment locations 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).

2.6.8 These values are presented in Table 32. 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 the main ES 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.

2.6.9 For all other assessment locations not presented in Table 32, the baseline sound levels used in the original scheme remain relevant based on the changes identified in the SES2 scheme.

Table 32: MA08 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 (2039)				
			Daytime L_{pAeq}	Evening/ weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
615224	Piccadilly Point, Berry Street, Manchester	-	57	55	51	57	51	55	77	5,A,i,b
615281	Staycity (Hotel), Piccadilly, Manchester	-	49	47	42	51	44	49	74	3,A,i,b
615300	Malmaison Hotel, Gore Street, Manchester	-	63	61	57	63	56	61	73	3,A,i,b
615326	The Reach at Piccadilly Hotel (formerly referred to as La Reserve Aparthotel), Ducie Street, Manchester	-	56	53	49	56	50	55	66	3,A,i,b
615330	Premier Inn, Dale Street, Manchester	-	57	54	50	53	46	51	67	3,A,i,b
615332	Bridge House (Hotel), Ducie Street, Manchester and committed development (Map Book ref.: MA08/414S)	-	45	43	38	47	41	45	62	3,A,i,b
615345	Your Smile Clinic (Healthcare), Dale Street, Manchester	-	53	50	46	50	44	49	64	3,A,i,b
615349	Great Ancoats Street, Manchester	-	59	57	53	60	54	58	75	3,A,i,b
615351	Brewer Street, Manchester	-	48	46	41	50	44	49	59	3,A,i,b
615353	Spindle Mews, Manchester	-	54	52	48	54	49	52	75	5,A,i,b

Assessment location		Measurement location	Baseline sound levels (dB)							Data source coding
			For construction sound assessment (2025)			For operational sound assessment (2039)				
Reference	Area represented		Daytime L_{pAeq}	Evening/ weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
615356	Staycity – Northern Quarters Aparthotel, Laystall Street, Manchester and committed development (Map Book ref.: MA08/216)	-	49	47	43	52	45	50	55	3,A,i,b
615366	Piccadilly (Hotel), Manchester and committed development (Map Book ref.: MA08/089)	-	56	54	50	58	52	57	70	3,A,i,b
615369	Vesta Street, Manchester	-	55	53	49	55	50	53	75	5,A,i,b
615403	New Union Street	-	45	43	39	45	39	44	58	3,A,i,b
615404	Lockyard Lane, Manchester	-	43	40	36	43	37	42	60	3,A,i,b
616749	Wadeson Road, Manchester	-	60	57	53	60	53	58	63	3,A,i,b
616751	Wadeson Road, Manchester	-	58	55	51	58	51	56	62	3,A,i,b
616753	Wadeson Road, Manchester	-	55	53	49	55	49	54	62	3,A,i,b
616754	Brownslow Walk, Manchester	-	54	51	47	53	47	52	63	3,A,i,b
616760	Lockton Close, Manchester	-	62	60	56	62	56	61	66	3,A,i,b
616797	Eternal Life Sanctuary (Church), Lomax Street, Manchester	-	58	55	51	58	52	57	62	3,A,i,b
616804	DoubleTree by Hilton Hotel, Piccadilly Place, Manchester	-	61	58	54	60	54	59	74	3,A,i,b
616805	Store Street, Manchester	-	66	63	59	67	60	65	70	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 (2039)				
			Daytime L_{pAeq}	Evening/ weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
616818	James Brindley Basin, Manchester	-	56	53	49	57	51	56	69	3,A,i,b
616820	Staycity – Northern Quarters Aparthotel, Laystall Street, Manchester and committed development (Map Book ref.: MA08/216)	-	62	60	56	63	57	62	67	3,A,i,b
616868	Lampwick Lane, Manchester	-	51	50	46	51	47	48	75	5,A,i,b
616869	Munday Street, Manchester	-	55	54	50	55	51	55	82	5,A,i,b
616870	Munday Street, Manchester	-	53	52	48	54	49	50	76	5,A,i,b
616871	Munday Street, Manchester	-	56	56	52	57	53	60	87	5,A,i,b
616872	Munday Street, Manchester	-	55	54	50	56	51	53	80	5,A,i,b
616911	Laystall Street, Manchester and committed development (Map Book ref.: MA08/433S)	-	51	49	45	54	47	52	58	3,A,i,b
616912	Old Mill Street and committed development (Map Book ref.: MA08/424S)	-	59	56	52	59	53	58	68	3,A,i,b
616973	Weybridge Road, Manchester	-	43	40	36	43	37	42	62	3,A,i,b
616974	Weybridge Road, Manchester	-	45	43	38	45	39	44	63	3,A,i,b
616975	Old Mill Street, Manchester	-	64	62	57	64	58	63	68	3,A,i,b
616976	Saltford Avenue, Manchester	-	42	39	35	42	36	41	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 (2039)				
			Daytime L_{pAeq}	Evening/ weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
616977	Old Mill Street, Manchester	-	62	60	55	62	56	61	66	3,A,i,b
616978	Old Mill Street and Carruthers Street, Manchester	-	62	60	56	63	57	62	67	3,A,i,b
616979	Chippenham Road, Manchester	-	59	57	52	60	54	59	64	3,A,i,b
616981	Every Street, Manchester	-	60	57	53	59	53	58	70	3,A,i,b
616982	Every Street, Manchester	-	61	59	55	61	55	60	69	3,A,i,b
616983	Every Street and Gurney Street, Manchester	-	62	60	56	62	56	61	72	3,A,i,b
616984	Every Street and Harding Street, Manchester	-	66	63	59	66	59	64	69	3,A,i,b
616985	All Souls Rectory (Place of Worship), Every Street, Manchester	-	66	63	59	65	59	64	69	3,A,i,b
616986	Redhill Street, Manchester	-	52	49	45	52	46	51	57	3,A,i,b
617017	Mayfield Depot (external amenity), Manchester and committed development (Planning ref.: 124972/FO/2019)	-	63	61	57	63	56	61	82	3,A,i,b
617018	Mayfield Depot (offices), Manchester and committed development (Planning ref.: 124972/FO/2019)	-	59	57	53	59	53	58	73	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 (2039)				
			Daytime L_{pAeq}	Evening/ weekend L_{pAeq}	Night-time L_{pAeq}	Daytime $L_{pAeq,16hr}$	Night-time $L_{pAeq,8hr}$	Arithmetic average $L_{pAFmax,5min}$	Highest night-time $L_{pAFmax,5min}$	
617019	Mayfield Depot (theatre), Manchester and committed development (Planning ref.: 125248/FO/2019)	-	59	57	53	59	53	58	73	3,A,i,b

Ground-borne sound and vibration

2.6.10 Activities associated with the construction phases of the SES2 changes 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.

2.6.11 The results, impact criteria and significance criteria for the assessment of the SES2 changes at residential and non-residential receptors are presented in Table 35. Explanation of the information within Table 21 is provided in Volume 5, Appendix: SV-001-00000 of the main ES, with additional notes presented in Table 3.

2.6.12 The amendment responsible for the change in construction ground-borne sound and vibration effect at the specific assessment locations reported in the following table, are identified in the associated footnotes.

Table 33: MA08 Assessment of construction 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	Type of receptor	Receptor design	Unique feature	Combined impact	Impact duration [m]	
			Day 07:00 – 23:00	Night 23:00 – 07:00									
615332	Bridge House (Hotel), Ducie Street, Manchester and committed development (Map Book ref.: MA08/414S)	0.4	0.12/0.36	-/-	Site set up (vibratory roller)	A	1	V2	T	-	O	D 5	MA08-C-N37[98]

[98] New likely significant effect at Bridge House Hotel (as a result of new committed development data).

Airborne sound: direct impacts and effects

2.6.13 Activities associated with the construction phases of the SES2 Scheme will generate airborne sound. 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.

2.6.14 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.

2.6.15 The results, impact criteria and significance criteria for the assessment of the SES2 Scheme at residential and non-residential receptors are presented in Table 34 and Table 35. Explanation of the information within Table 34 and Table 35 is provided in Volume 5, Appendix: SV-001-00000 of the main ES, with the additional notes presented in Table 3.

2.6.16 The principal SES2 changes responsible for the change in construction noise effect at the specific assessment locations reported in the following tables, are identified in the associated footnotes.

Table 34: MA08 Assessment of construction noise at residential receptors (SES2 scheme)

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	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											
615224	Piccadilly Point, Berry Street, Manchester	65/68[A]	32/36[C]	32/36[C]	Day: Station construction Evening: Bored tunnel works Night: Bored tunnel works	A	110	R	T	H	-	D35	-	-	MA08-C-C2[99]
615349	Great Ancoats Street, Manchester	70/73[A]	-/-[C]	-/-[C]	Day: Metrolink construction	A	100	R	T	H	-	D47	-	-	MA08-C-C9[100]
615351	Brewer Street, Manchester	66/67[A]	-/-[A]	-/-[B]	Day: Pipe jack works	A	117	R	T	-	-	D6	-	-	MA08-C-C3[101]
615353	Spindle Mews, Manchester	63/66[A]	-/-[B]	-/-[C]	Day: Metrolink construction	A	57	R	T	-	-	D8	-	-	MA08-C-C9[102]

[99] Different likely significant effect at Berry Street, Piccadilly Point (as a result of SES2 changes to the construction programme).

[100] Different likely significant effect at Great Ancoats Street, Manchester (as a result of change to baseline in the SES2 scheme).

[101] Different likely significant effect at Brewer Street, Manchester (as a result of SES2 changes to the construction programme).

[102] Different likely significant effect at Spindle Mews, Manchester (as a result of change in baseline in the SES2 scheme).

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	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											
615369	Vesta Street, Manchester	62/67[A]	33/36[B]	33/36[C]	Day: Metrolink construction Evening: Bored tunnel works Night: Bored tunnel works	A	169	R	T	-	-	D5	-	-	MA08-C-C9[103]
616749	Wadeson Road, Manchester	72/73[B]	-/36[C]	-/36[C]	Day: Pipe jack works Evening: Bored tunnel works Night: Bored tunnel works	A	2	R	T	H	-	D7	-	-	MA08-C-C1[104]
616750	Harehill Close, Manchester	64/66[A]	-/32[C]	-/32[C]	Day: Pipe jack works Evening: Bored tunnel works Night: Bored tunnel works	A	5	R	T	H	-	D4	-	-	MA08-C-C1[105]

[103] Different likely significant effect at Versa Street, Manchester (as a result of change in baseline in the SES2 scheme).

[104] Different likely significant effect at Wadeson Road, Manchester (as a result of SES2 changes to the construction programme).

[105] Different likely significant effect at Harehill Close, Manchester (as a result of SES2 changes to the construction programme).

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	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											
616751	Wadeson Road, Manchester	72/73[A]	-/36[C]	-/36[C]	Day: Pipe jack works Evening: Bored tunnel works Night: Bored tunnel works	A	6	R	T	H	-	D10	-	-	MA08-C-C1[104]
616753	Wadeson Road, Manchester	69/70[A]	-/33[B]	-/33[C]	Day: Pipe jack works Evening: Bored tunnel works Night: Bored tunnel works	A	4	R	T	-	-	D9	-	-	MA08-C-C1[104]
616754	Brownslow Walk, Manchester	65/66[A]	-/31[B]	-/31[C]	Day: Pipe jack works Evening: Bored tunnel works Night: Bored tunnel works	A	5	R	T	-	-	D7	-	-	MA08-C-C1[106]
616760	Lockton Close, Manchester	70/71[B]	-/33[C]	-/33[C]	Day: Pipe jack works Evening: Bored tunnel works Night: Bored tunnel works	A	11	R	T	H	-	D7	-	-	MA08-C-C1[107]

[106] Different likely significant effect at Brownslow Walk, Manchester (as a result of SES2 changes to the construction programme).

[107] Different likely significant effect at Lockton Close, Manchester (as a result of SES2 changes to the construction programme).

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	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											
616868	Lampwick Lane, Manchester	62/69[A]	30/33[B]	30/33[C]	Day: Metrolink construction Evening: Bored tunnel works Night: Bored tunnel works	A	143	R	T	-	-	D5	-	-	MA08-C-C9[108]
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[109]
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[109]
616871	Munday Street, Manchester	71/73[A]	37/41[C]	37/41[C]	Day: Metrolink construction Evening: Bored	A	37	R	T	H	-	D6	-	-	MA08-C-C9[109]

[108] Different likely significant effect at Lampwick Lane, Manchester (as a result of SES2 changes to the construction programme).

[109] Different likely significant effect at Munday Street, Manchester (as a result of change in baseline in the SES2 scheme).

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	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											
					tunnel works Night: Bored tunnel works										
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[109]
616911	Laystall Street, Manchester and committed development (Map Book ref.: MA08/433S)	61/68[A]	34/37[A]	34/37[C]	Day: Pipe jack works Evening: Bored tunnel works Night: Bored tunnel works	A	89	R	T	-	-	D6	-	-	MA08-C-C13[110]

[110] New likely significant effect at committed development (Map book ref.: MA08/433S) (as a result of new committed development data).

Table 35: MA08 Assessment of construction noise at non-residential receptors (SES2 scheme)

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										
615281	Staycity (Hotel), Piccadilly, Manchester	89/90	-/-	38	-	Day: Demolitions	1	A3	T	-	-	D96	V	-	[111]
615300	Malmaison Hotel, Gore Street, Manchester	76/82	35/41	16	-	Day: Pipe jack works Night: Pipe jack works	1	A3	T	H	-	D42	-	-	MA08-C-N17[112]
615326	The Reach at Piccadilly Hotel (formerly referred to as La Reserve Aparthotel), Ducie Street, Manchester	68/75	31/31	16	-	Day: Pipe jack works Night: Pipe jack works	1	A3	T	-	-	D29	V	-	MA08-C-N32[113]
615330	Premier Inn, Dale Street, Manchester	71/74	-/-	14	-	Day: Highway works	1	A3	T	H	-	D48	V	-	MA08-C-N31[114]

[111] Likely significant effect removed (as a result of the demolition assumption for Gateway House (SES2-008-005)).

[112] Different likely significant effect at the Malmaison Hotel (as a result of the demolition assumption for Gateway House (SES2-008-005)).

[113] Different likely significant effect at La Reserve Aparthotel (as a result of the demolition assumption for Gateway House (SES2-008-005)).

[114] Different likely significant effect at the Premier Inn, Dale Street (as a result of the demolition assumption for Gateway House (SES2-008-005)).

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										
615332	Bridge House (Hotel), Ducie Street, Manchester and committed development (Map Book ref.: MA08/414S)	64/69	-/-	21	-	Day: Demolitions	1	A3	T	-	-	D99	V	-	MA08-C-N36[115]
615345	Your Smile Clinic (Healthcare), Dale Street, Manchester	62/64	-/-	9	-	Day: Highway works	1	A4	T	-	-	D23	-	-	MA08-C-N18[116]
615366	Piccadilly (Hotel), Manchester and committed development (Map Book ref.: MA08/089)	63/65	-/-	7	-	Day: Demolitions	1	A3	T	H	-	D20	-	-	MA08-C-N37[117]
616804	DoubleTree by Hilton Hotel, Piccadilly Place, Manchester	76/82	35/41	18	-	Day: Pipe jack works	1	A3	T	H	-	D72	-	-	MA08-C-N14[118]

[115] New likely significant effect at the Bridge House Hotel (as a result of new committed development data).

[116] Different likely significant effect at the Your Smile Clinic, Dale Street (as a result of the demolition assumption for Gateway House (SES2-008-005)).

[117] Different likely significant effect at committed development (Map book ref.: MA08/089) (as a result of the demolition assumption for Gateway House (SES2-008-005)).

[118] Different likely significant effect at DoubleTree by Hilton Hotel (as a result of the demolition assumption for Gateway House (SES2-008-005)).

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										
						Night: Pipe jack works									

Airborne sound levels used in other assessments

2.6.17 There is no change in the airborne sound levels used in other assessments compared to the main ES.

Part 2: Additional Provision 2 Environmental Statement

Construction

Effects during construction

Introduction

2.6.18 The assessment is reported first for ground-borne vibration and then for airborne sound. Under each of these headings, the results of the quantitative identification of impacts, effects and significant effects are presented. The significant effects and the evidence used to support these conclusions are presented in the SES2 and AP2 ES Volume 2, Community Area report: Manchester Piccadilly Station (MA08).

Avoidance and mitigation measures

2.6.19 The avoidance and mitigation measures are set out in the main ES Volume 2, Community Area report: Manchester Piccadilly Station (MA08), Section 13.

Identification of impacts and effects

2.6.20 Assessment locations defined for the quantitative assessment of construction impacts are shown on SES2 and AP2 ES, Volume 5, Sound, noise and vibration Map Book: Map Series SV-03.

Ground-borne sound and vibration

2.6.21 The AP2 revised scheme do not change the likely significant ground-borne sound and vibration effects identified in the main ES.

Airborne sound: direct impacts and effects

2.6.22 Activities associated with the construction phases of the AP2 revised scheme will generate airborne sound. 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.

2.6.23 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.

2.6.24 The results, impact criteria and significance criteria for the assessment of the AP2 revised scheme at residential and non-residential receptors are presented in Table 36 and Table 37. Explanation of the information within Table 36 and Table 37 is provided in Volume 5, Appendix: SV-001-00000 of the main ES, with additional notes presented in Table 3.

2.6.25 The amendment responsible for the change in construction noise effect at the specific assessment locations reported in the following tables, are identified in the associated footnotes.

Table 36: MA08 Assessment of construction noise at residential receptors (AP2 revised scheme)

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	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											
615403	New Union Street	49/53[A]	-/32[A]	-/32[A]	Day: Pipe jack works Evening: Bored tunnel works Night: Bored tunnel works	NA	480	R	T	-	-	-	-	-	-
615404	Lockyard Lane, Manchester	44/49[A]	-/-[A]	-/-[A]	Day: Pipe jack works	NA	22	R	T	-	-	-	-	-	-
616805	Store Street, Manchester	64/70[C]	36/40[C]	36/40[C]	Day: Pipe jack works Evening: Bored tunnel works Night: Bored tunnel works	A	374	R	T	H	-	-	-	-	[119]
616818	James Brindley Basin, Manchester	53/59[A]	-/-[B]	-/-[C]	Day: Pipe jack works	A	34	R	T	-	-	-	-	-	[120]

[119] Likely significant effect removed at Store Street (as a result of the utility diversion of Travis Street sewer via Ducie Street (AP2 008-006)).

[120] Likely significant effect removed at Millbank Street (as a result of the utility diversion of Travis Street sewer via Ducie Street (AP2 008-006)).

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	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											
616912	Old Mill Street and committed development (Map Book ref.: MA08/424S)	56/59[A]	-/-[C]	-/-[C]	Day: Metrolink construction	NA	39	R	T	H	-	-	-	-	-
616973	Weybridge Road, Manchester	45/48[A]	-/-[A]	-/-[A]	Day: Metrolink construction	NA	19	R	T	-	-	-	-	-	-
616974	Weybridge Road, Manchester	44/48[A]	-/-[A]	-/-[A]	Day: Metrolink construction	NA	7	R	T	-	-	-	-	-	-
616975	Old Mill Street, Manchester	48/51[B]	-/-[C]	-/-[C]	Day: Demolitions	NA	14	R	T	H	-	-	-	-	-
616976	Saltford Avenue, Manchester	44/48[A]	-/-[A]	-/-[A]	Day: Metrolink construction	NA	68	R	T	-	-	-	-	-	-
616977	Old Mill Street, Manchester	44/47[B]	-/-[C]	-/-[C]	Day: Metrolink construction	NA	19	R	T	H	-	-	-	-	-
616978	Old Mill Street and Carruthers Street, Manchester	43/47[B]	-/-[C]	-/-[C]	Day: Pipe jack works	NA	19	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	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											
616979	Chippenham Road, Manchester	44/46[A]	-/31[C]	-/31[C]	Day: Metrolink construction Evening: Bored tunnel works Night: Bored tunnel works	NA	14	R	T	H	-	-	-	-	-
616981	Every Street, Manchester	50/54[B]	35/39[C]	35/39[C]	Day: Retaining walls construction Evening: Bored tunnel works Night: Bored tunnel works	NA	32	R	T	H	-	-	-	-	-
616982	Every Street, Manchester	51/55[B]	33/37[C]	33/37[C]	Day: Retaining walls construction Evening: Bored tunnel works Night: Bored tunnel works	NA	11	R	T	H	-	-	-	-	-
616983	Every Street and Gurney Street, Manchester	50/54[B]	31/34[C]	31/34[C]	Day: Retaining walls construction Evening: Bored tunnel works Night: Bored tunnel works	NA	13	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	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											
616984	Every Street and Harding Street, Manchester	50/53[C]	34/38[C]	34/38[C]	Day: Metrolink construction Evening: Bored tunnel works Night: Bored tunnel works	NA	26	R	T	H	-	-	-	-	-
616986	Redhill Street, Manchester	51/54[A]	-/-[A]	-/-[C]	Day: Metrolink construction	NA	225	R	T	-	-	-	-	-	-

Table 37: MA08 Assessment of construction noise at non-residential receptors (AP2 scheme)

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										
615356	Staycity – Northern Quarters Aparthotel, Laystall Street, Manchester and committed development (Map Book ref.: MA08/216)	52/57	-/-	6	-	Day: Pipe jack works	1	A3	T	-	-	D32	-	-	MA08-C-N23[121]
616797	Eternal Life Sanctuary (Church), Lomax Street, Manchester	61/64	-/32	5	-	Day: Pipe jack works Night: Pipe jack works	1	A2	T	H	-	D5	-	-	MA08-C-N35[122]

[121] Different likely significant effect at Staycity Northern Quarters Aparthotel (as a result of the utility diversion of Travis Street sewer via Ducie Street (AP2 008-006)).

[122] New likely significant effect at the Eternal Life Sanctuary (as a result of the utility diversion of Travis Street sewer via Ducie Street (AP2 008-006)).

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										
616820	Staycity – Northern Quarters Aparthotel, Laystall Street, Manchester and committed development (Map Book ref.: MA08/216)	71/73	31/35	9	-	Day: Pipe jack works Night: Pipe jack works	1	A3	T	H	-	D12	-	-	MA08-C-N23[123]
616985	All Souls Rectory (Place of Worship), Every Street, Manchester	52/56	35/38	-	-	Day: Retaining walls construction Night: Bored tunnel works	1	A2	T	H	-	-	-	-	$
617017	Mayfield Depot (external amenity), Manchester and committed development (Planning ref.: 124972/FO/2019)	46/49	-/-	-	-	Day: 0	1	A4	T	H	-	-	-	-	-

[123] Different likely significant effect at Staycity Northern Quarters Aparthotel (as a result of the utility diversion of Travis Street sewer via Ducie Street (AP2 008-006)).

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										
617018	Mayfield Depot (offices), Manchester and committed development (Planning ref.: 124972/FO/2019)	62/65	30/34	5	-	Day: Viaduct construction Night: Bored tunnel works	1	A4	T	H	-	D30	-	-	*
617019	Mayfield Depot (theatre), Manchester and committed development (Planning ref.: 125248/FO/2019)	50/54	-/-	1	-	Day: Overbridge construction	1	A1	T	H	-	-	-	-	$

Airborne sound: indirect effects

2.6.26 Construction road traffic associated with the construction phases of the SES2 scheme and AP2 amendments would generate airborne noise. Given that the construction traffic model information is not available for the SES2 changes and AP2 amendments separately, the in-combination effects of SES2 changes and AP2 amendments is presented in the AP2 section. The change in traffic noise level at a reference distance of 10m from the edge of the nearside carriageway resulting from the presence of construction traffic for a given road has been predicted. Data has 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 38 as well as road links which have effects removed as a result of the SES2 scheme and AP2 amendments.

2.6.27 Explanation of the information within Table 38 is provided in in Table 6 and Volume 5, Appendix: SV-001-00000 of the main ES.

Table 38: MA08 Assessment of construction traffic noise levels – indirect effects (AP2 revised scheme)

Road name	Portion of road affected	Number of properties affected (approx.)	Daytime traffic sound levels $L_{Aeq,16hr}$ dB			Change compared to current traffic sound level (dB)		Combined impact	Significant effect
			Without the AP2 revised scheme (2031)	Typical month during construction	Peak month during construction	Typical month during construction	Peak month during construction		
Adair Street	Andrews Square and Great Ancoats Street	NR: 1	63.8	61.7	64.6	-2.1	0.8	Yes	[124]
Gurney Street	Every Street and Palmerston Street	R: 13	53.1	57.6	58.6	4.5	5.5	No	MA08-C-C14[125]
Newton Street	Ancoats Street and Postal Street	R: 160 NR: 4	57.4	60.9	61.8	3.5	4.4	No	MA08-C-C15[126] MA08-C-N39[127] MA08-C-N40[128] MA08-C-N41[129] MA08-C-N42[130]

[124] Likely significant effect removed at Aeroworks (office) (as a result of new construction traffic data for AP2 revised scheme).

[125] New likely significant effect along Gurney Street (as a result of new construction traffic data for AP2 revised scheme).

[126] New likely significant effect along Newton Street (as a result of new construction traffic data for AP2 revised scheme).

[127] New likely significant effect at Hatters Hostel (as a result of new construction traffic data for AP2 revised scheme).

[128] New likely significant effect at The Cow Hollow Hotel (as a result of new construction traffic data for AP2 revised scheme).

[129] New likely significant effect at The Greater Manchester Police Museum and Archives (as a result of new construction traffic data for AP2 revised scheme).

[130] New likely significant effect at Grayscanlanhill (offices) (as a result of new construction traffic data for AP2 revised scheme).

Road name	Portion of road affected	Number of properties affected (approx.)	Daytime traffic sound levels $L_{Aeq,16hr}$ dB			Change compared to current traffic sound level (dB)		Combined impact	Significant effect
			Without the AP2 revised scheme (2031)	Typical month during construction	Peak month during construction	Typical month during construction	Peak month during construction		
Newton Street	Hilton Street and Dale Street	NR: 1	55.5	60.6	61.3	5.1	5.8	No	MA08-C-N38[131]

[131] New likely significant effect at easyHotel (as a result of new construction traffic data for AP2 revised scheme).

Airborne sound levels used in other assessments

2.6.28 The construction sound results contained in this document have been used by other disciplines, namely agriculture, cultural heritage, landscape and visual, communities and socio economics, in their assessments. This includes the information in Table 36 and Table 37. Locations of interest to these other disciplines which may not appear in Table 36 and Table 37 are presented in Table 39.

Table 39: 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							
615241	Piccadilly Point, Berry Street, Manchester	61/65	34/38	3	0	Day: Station construction Night: Bored tunnel works	-	-	-	-	Y	-
616799	Great Ancoats Street, Manchester	86/88	46/49	17	0	Day: Pipe jack works Night: Pipe jack works	-	-	-	-	Y	-

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