In Parliament – Session 2021 - 2022

HS2

High Speed Rail (Crewe – Manchester) Environmental Statement

Volume 5: Map Book

Sound, noise and vibration
(SV-02, SV-03, SV-08, SV-09)

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M275

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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Contents

Map series name	SV-02 - Operational Airborne Noise and Vibration Impacts and Likely Significant Effects	SV-03 - Construction Airborne Noise and Vibration Likely Significant Effects	SV-08 - Daytime Operational Sound Contour Maps	HE-03 – Archaeological Sub-Zones
Map series description	SV-02 presents the direct operational noise impacts and likely significant effects of the Proposed Scheme. The SV-02 figure series necessarily contains a large amount of information relating to the operational noise and vibration assessment. It is designed to communicate visually the assessment process from the prediction of impacts to the determination of likely residual significant effects. The corresponding text is included in Vol2 and Vol5. A more detailed explanation of each legend item included on the figures can be found in the data dictionary.	The SV-03 figure series accompanies the construction noise & vibration assessments. It shows the locations at which a quantitative assessment of the direct effects of construction noise and/or vibration has been carried out. These are labelled as assessment locations with a reference number to enable cross-reference to the construction noise and vibration reports contained in Volume 5: Appendix SV-002-0XX. A more detailed explanation of each legend item included on the figures can be found in the data dictionary.	SV-08 presents the predicted daytime operational sound from the new railway. The sound levels from the new railway (expressed as _{LpAeq,T}) are presented in typical noise mapping colours in 5 dB steps. There is a panel at the top right of the figure; this panel contains a key communicating the daytime sound levels represented by the various colours. A corresponding and similar panel is found on SV-02 and SV-09, along with the key sound contours that were used within the environmental assessment. A more detailed explanation of each legend item included on the figures can be found in the data dictionary.	SV-09 presents the predicted night-time operational sound from the new railway. The sound levels from the new railway (expressed as _{LpAeq,T}) are presented in typical noise mapping colours in 5 dB steps. There is a panel at the top right of the figure; this panel contains a key communicating the night-time sound levels represented by the various colours. A corresponding and similar panel is found on SV-02 and SV-08, along with the key sound contours that were used within the environmental assessment. A more detailed explanation of each legend item included on the figures can be found in the data dictionary.
Community Area name				
MA01 Hough to Walley's Green	✓	✓	✓	✓
MA02 Wimboldsley to Lostock Gralam	✓	✓	✓	✓
MA03 Pickmere to Agden and Hulseheath	✓	✓	✓	✓
MA04 Broomedge to Glazebrook	✓	✓	✓	✓
MA05 Risley to Bamfurlong	✓	✓	✓	✓
MA06 Hulseheath to Manchester Airport	✓	✓	✓	✓
MA07 Davenport Green to Ardwick	✓	✓	✓	✓
MA08 Manchester Piccadilly Station	✓	✓	✓	✓
ORW1 Preston Station (PSTN)		✓		
ORW2 Carlisle Station (CSTN)		✓		
ORW3 Annandale Depot (ADEP)		✓		

Mapping explanatory notes

Structure of the HS2 Phase 2b Environmental Statement

This map book is part of the suite of documents that make up the Environmental Statement (ES) that accompanies the deposit of the High Speed Rail (Crewe – Manchester) hybrid Bill. The structure of the ES is shown in the diagram below:

Non-technical summary

Provides a summary in non-technical language of the Proposed Scheme and its likely significant effects on the environment. This presents a summary of information included within the Environmental Statement.

Glossary, abbreviations and references

Contains terms, abbreviations and references.

Volume 1: Introduction and methodology

Provides an overview of the Proposed Scheme and the Environmental Impact Assessment (EIA) process.

Volume 3: Route-wide effects

Describes the effects that are likely to occur at a geographical scale greater than the community areas described in the Volume 2: Community Area reports.

Volume 4: Off-route effects

Sets out the likely significant effects at locations beyond the Phase 2b Western Leg corridor and its local environment.

Map Book

Volume 2: Community Area (CA) reports

Consists of eight reports and their associated map books. These reports set out the design and environmental assessment for the Proposed Scheme at a community area level, as shown below.

MA01 Report	MA02 Report	MA03 Report	MA04 Report	MA05 Report	MA06 Report	MA07 Report	MA08 Report
Hough to Walley's Green	Wimboldsley to Lostock Gralam	Pickmere to Agden and Hulseheath	Broomedge to Glazebrook	Risley to Bamfurlong	Hulseheath to Manchester Airport	Davenport Green to Ardwick	Manchester Piccadilly Station
MA01 Map Book	MA02 Map Book	MA03 Map Book	MA04 Map Book	MA05 Map Book	MA06 Map Book	MA07 Map Book	MA08 Map Book

Volume 5: Appendices and map books

The majority of appendices in Volume 5 examine certain topics in detail, either within a community area or more widely. Appendices assessing a particular topic are identified by the reference codes below. Volume 5 also contains supporting documents, such as the draft Code of Construction Practice. The topics which also have map books are noted below.

Map Book	Map Book		Map Book	Map Book		Map Book	Map Book	Map Book		Map Book	Map Book	Map Book		Map Book
Agriculture, forestry and soils	Air quality	Climate change	Community	Ecology and biodiversity	Electromagnetic interference	Health	Historic environment	Land quality	Landscape and visual	Major accidents and natural disasters	Socio-economics	Sound, noise and vibration	Traffic and transport	Waste and material resources	Water resources and flood risk
AG Appendices	AQ Appendices	CL Appendices	CM Appendices	EC Appendices	EM Appendices	HA Appendices	HE Appendices	LQ Appendices	LV Appendices	MA Appendices		SV Appendices	TR Appendices	WM Appendices	WR Appendices

Scope and Methodology Report

Draft Code of Construction Practice

Alternatives report

Planning data

Wider effects report

Working Draft Environmental Statement consultation summary report

Borrow pit report

Published outside the ES

Background Information and Data (BID) and associated BID map books

Copyright statements

Copyright statements are presented in the Data dictionary and definitions section at the front of the map book, due to limited space to include this on the individual maps themselves.

Ordnance Survey data

All maps produced as part of the ES contain Ordnance Survey (OS) data. HS2 Ltd use the most up to date mapping available, where possible, supplied by the OS and as such, we cannot be held responsible for any inaccuracies within this data. As part of our licence conditions, all digital maps carry a watermark.

Chainage

Most of the maps presented as part of the ES have a chainage value shown next to the alignment. Chainage is presented on the maps in black font, in the form of XXX+YYY, e.g. 192+000 or 239+500.

Chainage (known as reference chainage) is referenced from Euston Station, which is 0+000, and the value presented is in metres, e.g. 192+000 refers to the point, 192,000m, or 192km, from Euston Station. Chainage values increase in intervals dependant on the map scale. For maps at 1:50,000 scale chainage is shown at 5km intervals. For maps at 1:25,000 scale chainage is shown at 2km intervals. For maps at 1:20,000, 1:10,000, 1:5,000 and 1:2,500 scales, chainage is shown at 1km intervals.

Chainage has been included on the maps as a useful tool for comparing different map sets showing the different environmental themes or engineering plans, due to map sets having different scales, and therefore, showing differing amounts of alignment on the map.

Map orientation

The majority of the maps presented in these map books are presented with the railway alignment running horizontally across the page. The direction of travel to London would be following the alignment to the left hand side of the page, and Manchester to the right.

The exception to this, are map series LV-00, LV-02, LV-07 and LV-08, which present the alignment running from bottom to top of the page. This is to allow more of the modelled outputs to be shown at the appropriate map scale. In this instance, the direction of travel to London would be to the bottom of the page, and Manchester to the top.

Map books

In total, there are 29 map books, which make up the ES, found in volume 2, volume 4 and volume 5. A list of the titles is provided below for reference.

Name	Name
Volume 2: Map book – MA01: Hough to Walley's Green	Volume 5: Map book – Agriculture (AG-01, AG02, AG-04)
Volume 2: Map book – MA02: Wimboldsley to Lostock Gralam	Volume 5: Map book – Air quality (AQ-01)
Volume 2: Map book – MA03: Pickmere to Agden and Hulseheath	Volume 5: Map book – Community (CM-01)
Volume 2: Map book – MA04: Broomedge to Glazebrook	Volume 5: Map book – Ecology and biodiversity (EC-01)
Volume 2: Map book – MA05: Risley to Bamfurlong	Volume 5: Map book – Historic Environment (HE-01, HE-02, HE-03)
Volume 2: Map book – MA06: Hulseheath to Manchester Airport	Volume 5: Map book – Land quality (LQ-01)
Volume 2: Map book – MA07: Davenport to Green Ardwick	Volume 5: Map book – MA01: Hough to Walley's Green Landscape and visual (LV-00, LV-02, LV-07, LV-08, LV-17)
Volume 2: Map book – MA08: Manchester Piccadilly Station	Volume 5: Map book – MA02: Wimboldsley to Lostock Gralam Landscape and visual (LV-00, LV-02, LV-07, LV-08, LV-17)
Volume 4: Map book – Off-route effects	Volume 5: Map book – MA03: Pickmere to Agden and Hulseheath Landscape and visual (LV-00, LV-02, LV-07, LV-08, LV-17)

Name	Name
Volume 5: Map book – MA04: Broomedge to Glazebrook Landscape and visual (LV-00, LV-02, LV-07, LV-08, LV-17)	Volume 5: Map book – MA05: Risley to Bamfurlong Landscape and visual (LV-00, LV-02, LV-07, LV-08, LV-17)
Volume 5: Map book – MA06: Hulseheath to Manchester Airport Landscape and visual (LV-00, LV-02, LV-07, LV-08, LV-17)	Volume 5: Map book – MA07: Davenport to Green Ardwick Landscape and visual (LV-00, LV-02, LV-07, LV-08, LV-17)
Volume 5: Map book – MA08: Manchester Piccadilly Station Landscape and visual (LV-00, LV-02, LV-07, LV-08, LV-17)	Volume 5: Map book – OR003 Annandale Depot Landscape and visual (LV-00, LV-02, LV-07, LV-08, LV-17)
Volume 5: Map book – Planning Data/Committed Development (CT-13)	Volume 5: Map book – Socio-economics (SE-01)
Volume 5: Map book – Sound, noise and vibration (SV-02, SV-03, SV-08, SV-09)	Volume 5: Map book – Traffic and transport (TR-01, TR-03, TR-04, TR-08)
Volume 5: Map book – Water resources and flood risk (WR-01, WR-02, WR-03, WR-05, WR-06)	

High Speed Rail (Crewe – Manchester) Environmental Statement

Data dictionary and definitions

Data dictionary and definitions

Legend features	Definition	Source	Copyright
Airborne noise and vibration assessment location	Locations near surface sections of the route at which a quantitative assessment of airborne sound and ground-borne vibration impacts due to the operation of the Proposed Scheme has been carried out. These are labelled with an assessment location reference code to enable cross-reference to the operational sound and vibration reports in Volume 5, Appendix SV-003-0MA0X.	High Speed Two (HS2) Ltd	
Airborne noise assessment location	Locations at which a quantitative assessment of airborne sound impacts due to the operation of the Proposed Scheme has been carried out. These are labelled with an assessment location reference code to enable cross-reference to the operational sound and vibration reports in Volume 5, Appendix SV-003-0MA0X.	High Speed Two (HS2) Ltd	
Airborne noise study area	This defines the area within which operational airborne sound impacts of the scheme have been quantitatively assessed. This area is defined as within 1km of surface sections of the route in rural areas and within 500m of surface sections of the route in urban areas.	High Speed Two (HS2) Ltd	
Airborne noise, ground-borne sound and vibration assessment location	Locations at which a quantitative assessment of airborne sound, ground-borne sound and vibration impacts due to the operation of the Proposed Scheme has been carried out. These are labelled with an assessment location reference code to enable cross-reference to the operational sound and vibration reports in Volume 5, Appendix SV-003-0MA0X.	High Speed Two (HS2) Ltd	
Baseline measurement locations	These represent locations at which sound measurements were carried out as part of the baseline sound surveys. Measurements of existing baseline sound levels at these locations have been used to derive baseline sound levels at operational and construction sound assessment locations. These baseline measurement locations are labelled with a reference number which enables cross-reference to the baseline sound reports contained in Volume 5: Appendix SV-002-0MA0X, which also describes how these are linked to baseline levels at assessment locations.	High Speed Two (HS2) Ltd	
Committed developments - SV only	This informs the assessment of the future baseline. A development consent or allocation that has full or outline planning permission, or is allocated in an adopted development plan.	High Speed Two (HS2) Ltd	
Community area boundary	The Environmental Statement has been split into eight sections called Community Areas.	High Speed Two (HS2) Ltd	© Crown copyright. Reproduced by permission of Ordnance Survey Licence Number 100049190. Year of Publication 2019.

Legend features	Definition	Source	Copyright
Construction airborne sound and vibration assessment location	Locations at which a quantitative assessment of construction noise and vibration impacts of the Proposed Scheme has been carried out. These are labelled with an assessment location reference code to enable cross-reference to the construction sound & vibration reports contained in Volume 5: Appendix SV-002-0MA0X.	High Speed Two (HS2) Ltd	
Construction airborne sound assessment location	Locations at which a quantitative assessment of construction noise impacts of the Proposed Scheme has been carried out. These are labelled with an assessment location reference code to enable cross-reference to the construction sound & vibration reports contained in Volume 5: Appendix SV-002-0MA0X.	High Speed Two (HS2) Ltd	
Construction vibration assessment locations	Locations at which a quantitative assessment of construction vibration impacts of the Proposed Scheme has been carried out. These are labelled with an assessment location reference code to enable cross-reference to the construction sound & vibration reports contained in Volume 5: Appendix SV-002-0MA0X.	High Speed Two (HS2) Ltd	
County boundary	County boundaries from Ordnance Survey boundary mapping.	Ordnance Survey	© Crown copyright. Reproduced by permission of Ordnance Survey Licence Number 100049190. Year of Publication 2019.
Depot, station, headhouse or portal building	Extends to cover operational footprint of each depot and station and the footprint of each tunnel vent shaft and headhouse at surface level. Excludes any ancillary buildings associated with these structures.	High Speed Two (HS2) Ltd	
District/borough/Unitary authority boundary	Ordnance Survey local authority boundary mapping.	Ordnance Survey	© Crown copyright. Reproduced by permission of Ordnance Survey Licence Number 100049190. Year of Publication 2019.
Engineering earthworks: Cutting	Cuttings created in the construction of the railway and associated works such as highways.	High Speed Two (HS2) Ltd	
Engineering earthworks: Embankment	Embankments created in the construction of the railway and associated works such as highways.	High Speed Two (HS2) Ltd	

Legend features	Definition	Source	Copyright
Envisaged features further reducing noise effects	Other environmental features e.g. landscaping: These lines represent environmental mitigation features provided for reasons other than noise mitigation which also reduce sound levels from the Proposed Scheme to the surrounding environment. These features are not placed specifically to reduce or remove a likely significant noise effect. Examples include landscaping and visual mitigation earthworks (non-engineering earthworks). Engineering e.g. cuttings: These lines represent engineering features which reduce sound levels from the Proposed Scheme to the surrounding environment but are not placed specifically to reduce or remove a likely significant noise effect. Examples include cuttings and safety barriers on viaducts which are not close to sensitive receptors.	High Speed Two (HS2) Ltd	
Envisaged mitigation to avoid / reduce significant noise effects	Landscaping and/or fence barriers: These lines represent the envisaged mitigation provided specifically to reduce sound levels from the Proposed Scheme at sensitive receptors in order to reduce or remove likely operational significant noise effects. Examples include noise fence barriers or earth bunds (non-engineering earthworks) acting as noise barriers. These features are labelled with the height of the top of the barrier/bund above rail level. Engineering e.g. cuttings: These lines represent engineering features of the route which reduce sound levels from the Proposed Scheme at potentially significant sensitive receptors. These features, therefore, serve a material purpose in reducing or avoiding likely significant noise effects. Examples include engineering cuttings near to sensitive receptors. These features are labelled with the height of the top of the feature above rail level.	High Speed Two (HS2) Ltd	
Ground-borne noise & vibration study area (highly sensitive non-residential)	This defines the area within which direct operational ground-borne sound and vibration impacts of the scheme at highly sensitive non-residential receptors have been quantitatively assessed. This area is defined as within 200m of the route.	High Speed Two (HS2) Ltd	
Ground-borne noise & vibration study area (residential and non-residential)	This defines the area within which direct operational ground-borne sound and vibration impacts of the scheme at residential and non-residential receptors have been quantitatively assessed. This area is defined as within 85m of the route.	High Speed Two (HS2) Ltd	
Ground-borne noise and/or vibration assessment location	Locations near tunnelled sections of the route at which a quantitative assessment of ground-borne sound and vibration impacts due to the operation of the Proposed Scheme has been carried out. These are labelled with an assessment location reference code to enable cross-reference to the operational sound & vibration reports contained in Volume 5: Appendix SV-003-0MA0X.	High Speed Two (HS2) Ltd	
Ground-borne noise or vibration impact	Buildings at which an operational ground-borne sound or vibration impact is predicted from the Proposed Scheme.	High Speed Two (HS2) Ltd	

Legend features	Definition	Source	Copyright
Land potentially required during construction	Boundary defining the maximum possible extent of construction works required to build HS2 as far as the current level of design allows. This only covers surface works and includes all tunnel portals, vent shafts and headhouses, but does not apply to wholly tunnelled sections or to air rights. It also encompasses associated highway, access, drainage and utility works.	High Speed Two (HS2) Ltd	
LpAFmax exceeds 60dB façade	Assessment locations where the predicted value of LpAFmax is 60 dB or greater having applied a façade correction of +2.5 dB to the predicted free field value.	High Speed Two (HS2) Ltd	
Noise Important Areas defined in national noise action plans (Defra 2019)	The Environmental Noise (England) Regulations 2006 (SI 2006/2238) required Defra, as the Competent Authority, to implement the Environmental Noise Directive in England, which requires amongst other things, the adoption of Action Plans, based upon the noise exposure assessment results. The noise action plan(s) "apply in particular to the most important areas as established by the strategic noise maps". These identified areas are referred to as noise important areas.	High Speed Two (HS2) Ltd	
Non engineering earthworks: Cutting	Cuttings created in the construction of landscape features and mitigation measures.	High Speed Two (HS2) Ltd	
Non engineering earthworks: Embankment	Embankments created in the construction of landscape features and mitigation measures.	High Speed Two (HS2) Ltd	
Operational airborne noise impacts at residential buildings	The buildings shown on SV-02 and SV-05 are colour-coded according to the magnitude of the predicted noise impacts of the Proposed Scheme. Noise impacts are calculated by comparing the sound levels predicted if the Proposed Scheme did not go ahead with those if it did (details of this process can be found in Volume 5: Appendix SV-001-00000). Panel B on SV02/SV-05 contains a key showing the colours used with the corresponding impact categories. The impacts presented are the greatest (i.e. worst-case) of the impacts predicted for daytime and night-time.	High Speed Two (HS2) Ltd	
Potential additional noise insulation (triggered by maximum sound levels at night)	This represents dwellings which would potentially be provided with noise insulation due maximum sound levels from the Proposed Scheme (further information regarding assessment criteria can be found in Volume 5 Appendix SV-001-00000).	High Speed Two (HS2) Ltd	
Potential additional noise insulation (triggered by WHO Night Noise Guidelines Interim Target)	This represents dwellings which would potentially be provided with noise insulation due to noise from the Proposed Scheme exceeding the World Health Organization (WHO) night noise guidelines interim target (further information regarding assessment criteria can be found in Volume 5 Appendix SV-001-00000).	High Speed Two (HS2) Ltd	

Legend features	Definition	Source	Copyright
Potential noise insulation (triggered by Noise Insulation Regulations 1996)	This represents dwellings which would potentially qualify for noise insulation under the Noise Insulation (Railways and Other Guided Transport Systems) Regulations 1996 (further information regarding assessment criteria can be found in Volume 5 Appendix SV-001-00000).	High Speed Two (HS2) Ltd	
Route in bored tunnel Route in green tunnel	Represents the proposed route of HS2, split into route in bored tunnel and route in green tunnel sections.	High Speed Two (HS2) Ltd	
Route on surface	Represents the proposed route of HS2, split into route on surface and tunnelled sections.	High Speed Two (HS2) Ltd	
Sound contours	The sound levels from the Proposed Scheme (expressed as LpAeq,T and representing sound from the new railway only) are presented as contours lines, which represent equal sound levels. Further details regarding contour values are provided on the SV-02, SV-05, SV-08 and SV-09 map series.	High Speed Two (HS2) Ltd	

HS2

High Speed Rail (Crewe – Manchester) Environmental Statement

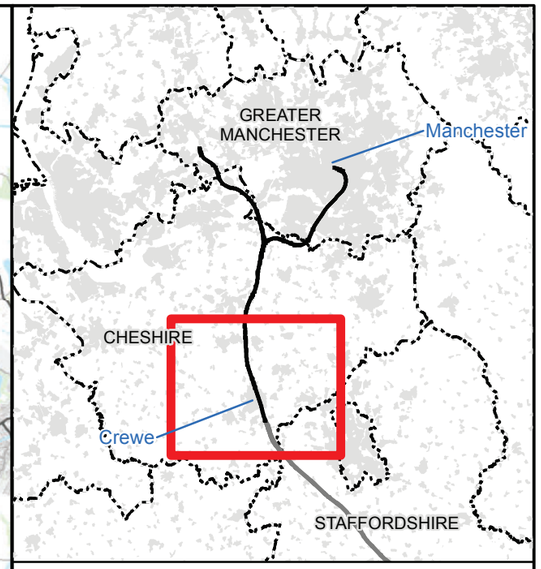
MA01: Hough to Walley's Green

SV-02 - Operational Noise and Vibration Impacts and Likely Significant Effects (with Assessment Location)

SV-03 - Assessment and Monitoring Locations for Construction Sound, Noise and Vibration Assessments

SV-08 - Daytime Operational Sound Contour Maps

SV-09 - Night-time Operational Sound Contour Maps



Map Series Information:

SV-02 presents the direct operational noise impacts and likely significant effects of the Proposed Scheme.

The SV-02 figure series necessarily contains a large amount of information relating to the operational noise and vibration assessment. It is designed to communicate visually the assessment process from the prediction of impacts to the determination of likely residual significant effects. The corresponding text is included in Vol2 and Vol5.

Key items on the map include the following:

- The Proposed Scheme (the proposed railway alignments and surrounding associated earthworks/roads);
- blue and green lines representing the wayside airborne noise mitigation measures included in the Proposed Scheme;
- the study areas, which indicate the areas within which direct sound and vibration impacts of the scheme have been quantitatively assessed;
- the calculated direct operational impacts of the scheme, displayed as colour-coded buildings and symbols representing buildings that would potentially qualify for noise insulation;
- sound contours representing sound produced by the new railway (displayed in a simpler manner than on SV-08 and SV-09 in order not to obscure the features on the map series);
- the assessment locations at which a quantitative prediction of sound and impacts have been carried out (representing a number of nearby buildings). These are labelled with a unique reference number to enable cross-reference to further detail regarding the assessments in Volume 5: Appendix SV-003-0MA0X; and
- labels indicating where the likely residual direct noise or vibration significant effects have been identified. These are labelled with a unique reference number to enable cross-reference to further detail regarding the assessments in Volume 5: Appendix SV-003-0MA0X.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

A more detailed explanation of each legend item included on the figures and on the separate legend page can be found in the data dictionary.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-02-INDEX-MA01

Map Name: Index Map of: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

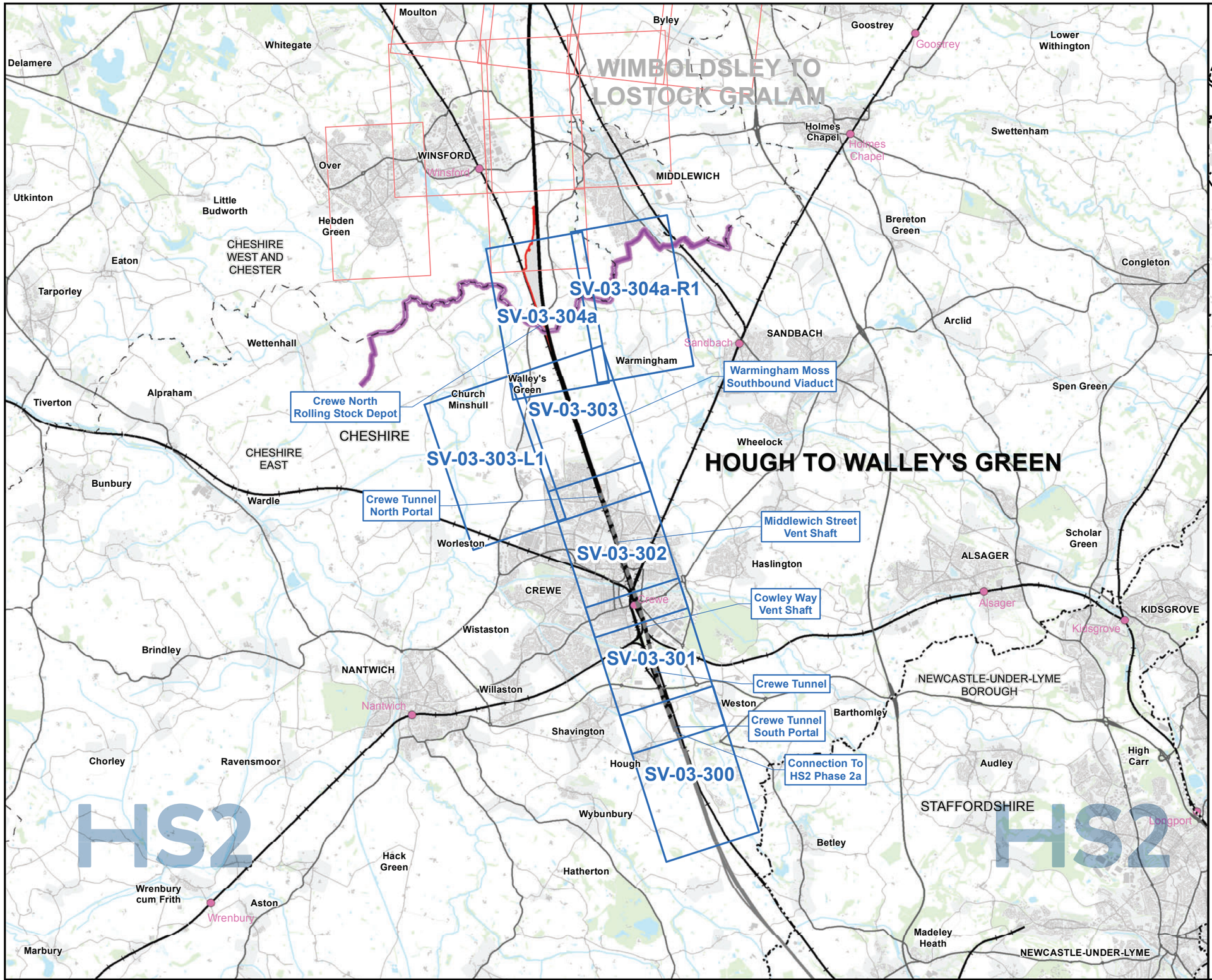
Community Area MA01: Hough to Walley's Green

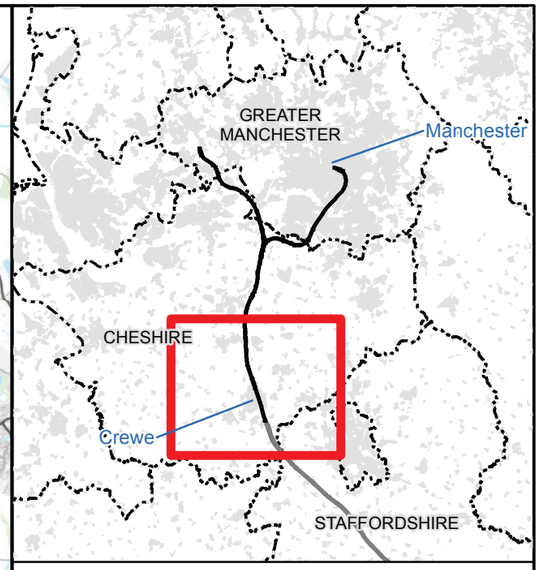
Scale at A3: 1:100,000

0 1,000 2,000 3,000 4,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002037-P01

Date: 10/08/21





Map Series Information:

The SV-03 figure series accompanies the construction noise & vibration assessments. It shows the locations at which a quantitative assessment of the direct effects of construction noise and/or vibration has been carried out. These are labelled as assessment locations with a reference number to enable cross-reference to the construction noise and vibration reports contained in Volume 5: Appendix SV-002-0MA01.

The figure series also shows locations at which baseline sound measurements were carried out.
These baseline measurement locations are labelled with a reference number to enable cross-reference to the baseline sound reports contained in Volume 5: Appendix SV-002-0MA01.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

A more detailed explanation of each legend item included on the figures can be found in the data dictionary.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-03-INDEX-MA01

Map Name:

Index Map of:
Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA01:
Hough to Walley's Green

Scale at A3: 1:100,000

0 1,000 2,000 3,000 4,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002083-P01

Date: 06/09/21

HS2 (rail only) noise level $L_{pAeq,T}$		Potential noise effect[1, 2]	
Night-time $L_{pAeq,T}$ (T=23:00 to 07:00)	Daytime $L_{pAeq,T}$ (T=07:00 to 23:00)	**Residential**	**Non-residential & quiet areas**
> 55 dB	> 65 dB	Likely significant effect on dwellings indicated by ◯, ✳ or ✕ avoided by noise insulation	Effect dependent on receptor and baseline. For further details see Volume 5, Appendix SV-003-0MA0X. Likely significant effect indicated by MA0X-O-N#[2]
40 to 55 dB	50 to 65 dB	Effect dependent on noise level change and significance criteria. Likely significant effects on groups of dwellings and any shared community open areas indicated by MA0X-O-C#[2]	
< 40 dB	< 50 dB	Generally no adverse effect expected[1]	

Operational airborne noise impacts at residential buildings[1]

- Major adverse
- Moderate adverse
- Minor adverse
- Negligible
- Beneficial

- ◯ Potential additional noise insulation (triggered by maximum noise levels at night)[1]
- ✳ Potential additional noise insulation (triggered by WHO Night Noise Guidelines Interim Target)[1]
- ✕ Potential noise insulation (triggered by Noise Insulation Regulations 1996)[1]
- ◯ L_{pAFmax} exceeds 60dB façade HS2 train only L_{pAFmax} +2.5dB façade correction

▭ Ground-borne noise or vibration impact at residential buildings

[1] For further information see Volume 5 Appendix SV-001-00000
[2] For details see relevant Volume 5 Appendix SV-003-0MA0X

SV-02 - Legend

Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Doc Number: -

Date:

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For SNV effects symbology please refer to SV-02 - Legend page

ML710059
PIT LANE
WOOLSTON DRIVE
NEWCASTLE ROAD
Hough
COBBS LANE
ML712766
WRINEHILL ROAD
BACK LANE
ML710058
CASEY LANE
ML710060
CHESHIRE EAST
Connection To HS2 Phase 2a
246+000
ML710052
NEWCASTLE ROAD
Lane End Farm
CHORLTON LANE
Dairy Farm
Heath Farm
610662
WESTON LANE
ML710057
CHORLTON LANE
ML710051
Chorlton
FRESHWATER DRIVE
WAYBUTT LANE
WYCHWOOD PARK
ASHBOURNE DRIVE
ML710050
NEWCASTLE ROAD
Crewe Tunnel South Portal
ML710049
MA01/413
For continuation refer to map number SV-02-301
CEMETERY ROAD
WYCHWOOD PARK
MAIN ROAD
Weston

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-300

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Community Area MA01: Hough to Walley's Green

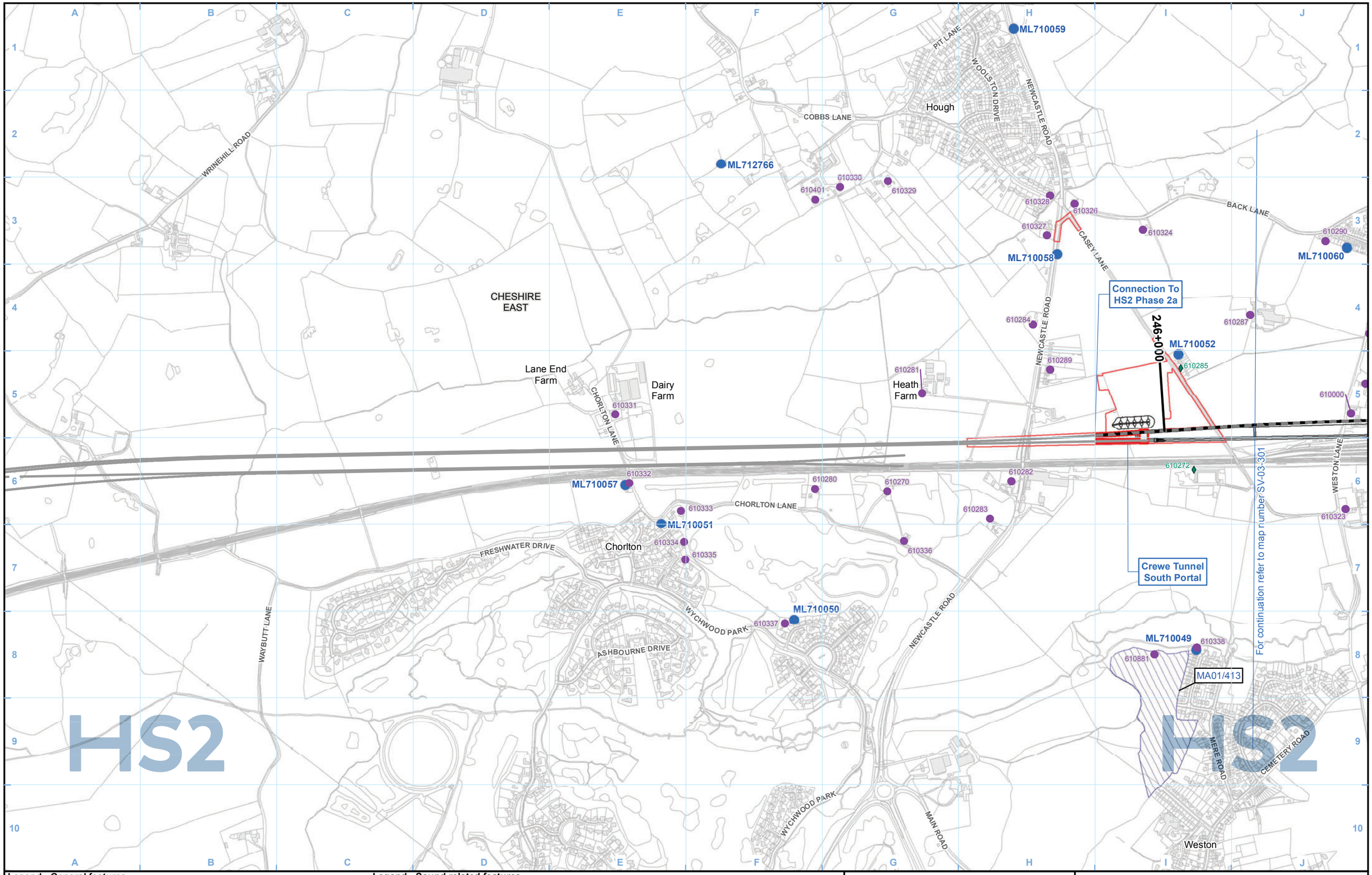
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002871-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

- Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA01) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA01-C-C# and MA01-C-N#, respectively.

Map Number: SV-03-300

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA01: Hough to Walley's Green

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002889-P01

Date: 06/09/21

For SNV effects symbology please refer to SV-02 - Legend page

ML710059
ML710058
ML710061
ML710060
ML710052
ML710048
MA01/413
ML710049
MA01/383
610662
610668
610669
610670
610826
610008
610664
610663
610010
610879
Shavington
Hough
Basford
Weston
CREWE
CHESHIRE EAST
Crewe Tunnel
Cowley Way Vent Shaft
MA01-O-N1
MA01-O-N2
246+000
247+000
248+000
249+000
For continuation refer to map number SV-02-300
For continuation refer to map number SV-02-302
NEWCASTLE ROAD
CASEY LANE
BACK LANE
WESTON LANE
A500 SHAVINGTON BYPASS
CREWE ROAD
GRESTY LANE
GRESTY GREEN ROAD
B5071 JACK MILLS WAY
BROADLEIGH WAY
CARLISLE STREET
RUSKIN ROAD
MANOR WAY
ERNEST STREET
NEVILLE STREET
BEDFORD STREET
DAVENPORT AVENUE
LAURA STREET
NILE STREET
BROOKLYN STREET
A5078 EDLESTON ROAD
A534 NANTWICH ROAD
A5109 MILL STREET
B5071 GRESTY ROAD
FIRST AVENUE
SECOND AVENUE
FOURTH AVENUE
GATEWAY
LANCASTER FIELDS
ELECTRA WAY
A534 CREWE ROAD
A534 CREWE GREEN ROAD
A5020 DAVID WHITBY ROAD
CEMETERY ROAD
WESTON ROAD
UNIVERSITY WAY
B5472
A5020

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-301

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Community Area MA01: Hough to Walley's Green

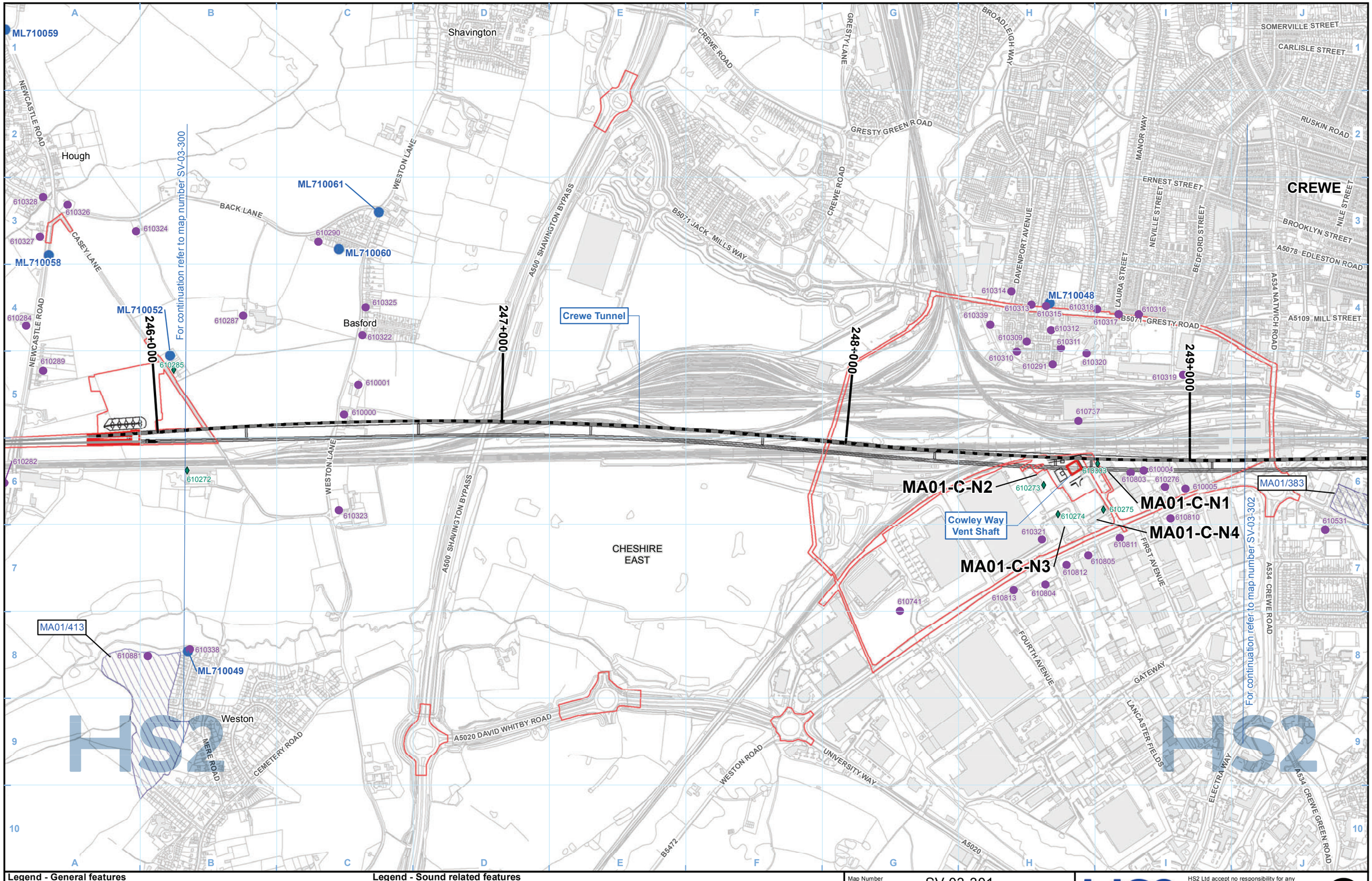
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002001-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

- Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA01) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA01-C-C# and MA01-C-N#, respectively.

Map Number: SV-03-301

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA01: Hough to Walley's Green

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002048-P01

Date: 06/09/21

For SNV effects symbology please refer to SV-02 - Legend page

For continuation refer to map number SV-02-301

For continuation refer to map number SV-02-303

CREWE

CHESHIRE EAST

Barrows Green

Coppenhall

Bridge Farm

Holly Tree Farm

Foden Farm

Maw Green

Groby Farm

Sydney

Crewe Tunnel North Portal

Crewe Tunnel

Middlewich Street Vent Shaft

249+000

250+000

251+000

252+000

MA01-O-N1

MA01-O-N2

MA01-O-N3

MA01-O-N4

MA01-O-N5

MA01-O-N6

MA01-O-C1

MA01/207

MA01/143

MA01/411

MA01/383

MA01/210

ML710055

ML710056

ML710054

ML710053

ML710047

ML710007

ML710006

ML710008

ML710009

SOMERVILLE STREET

KINGSWAY

CARLISLE STREET

RUSKIN ROAD

MANOR WAY

ERNEST STREET

NEVILLE STREET

BEDFORD STREET

LAURA STREET

NILE STREET

BROOKLYN STREET

A5078 EDLESTON ROAD

B5071 GRESTY ROAD

A534 NANTWICH ROAD

A5109 MILL STREET

WALTHALL STREET

GAINSBOROUGH ROAD

ALTON STREET

WISTASTON ROAD

LEWIS STREET

A5078 DUNWOODY WAY

FLAG LANE

WEST AVENUE

RICHARD MOON STREET

BRIGHT STREET

RIGG STREET

STAFFORD STREET

A532 WEST STREET

DELAMERE STREET

VICTORIA STREET

MARKET STREET

BROAD STREET

BADGER AVENUE

A532 VERNON WAY

UNDERWOOD LANE

DERBY STREET

WALKER STREET

BADGER AVENUE

DUTTON WAY

MOUNT PLEASANT

FRANK WEBB AVENUE

FRANK BOTT AVENUE

B5076 BRADFIELD ROAD

SELWORTHY DRIVE

MOSSFORD AVENUE

MERLIN WAY

KESTREL DRIVE

MARLINS LANE

ELLIS STREET

HOLLAND STREET

MARLEY AVENUE

EVANS STREET

FORD LANE

B5076 MIDDLEWICH STREET

A532 MACON WAY

A534 CREWE ROAD

A534 CREWE GREEN ROAD

FIRST AVENUE

SECOND AVENUE

GATEWAY

LANCASTER FIELDS

ELECTRA WAY

LEA AVENUE

COLERIDGE WAY

TENNYSON AVENUE

KIPLING WAY

HUNGERFORD ROAD

WORDSWORTH DRIVE

OAK TREE DRIVE

ROCHESTER CRESCENT

HENRY STREET

ELM DRIVE

PLANE TREE DRIVE

PYRUS AVENUE

SORBUS DRIVE

PRUNUS ROAD

SYCAMORE AVENUE

ASH ROAD

REMER STREET

LIME TREE AVENUE

SYDNEY ROAD

GROBY ROAD

MAW GREEN ROAD

STONELEY ROAD

WALDRONS LANE

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-302

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

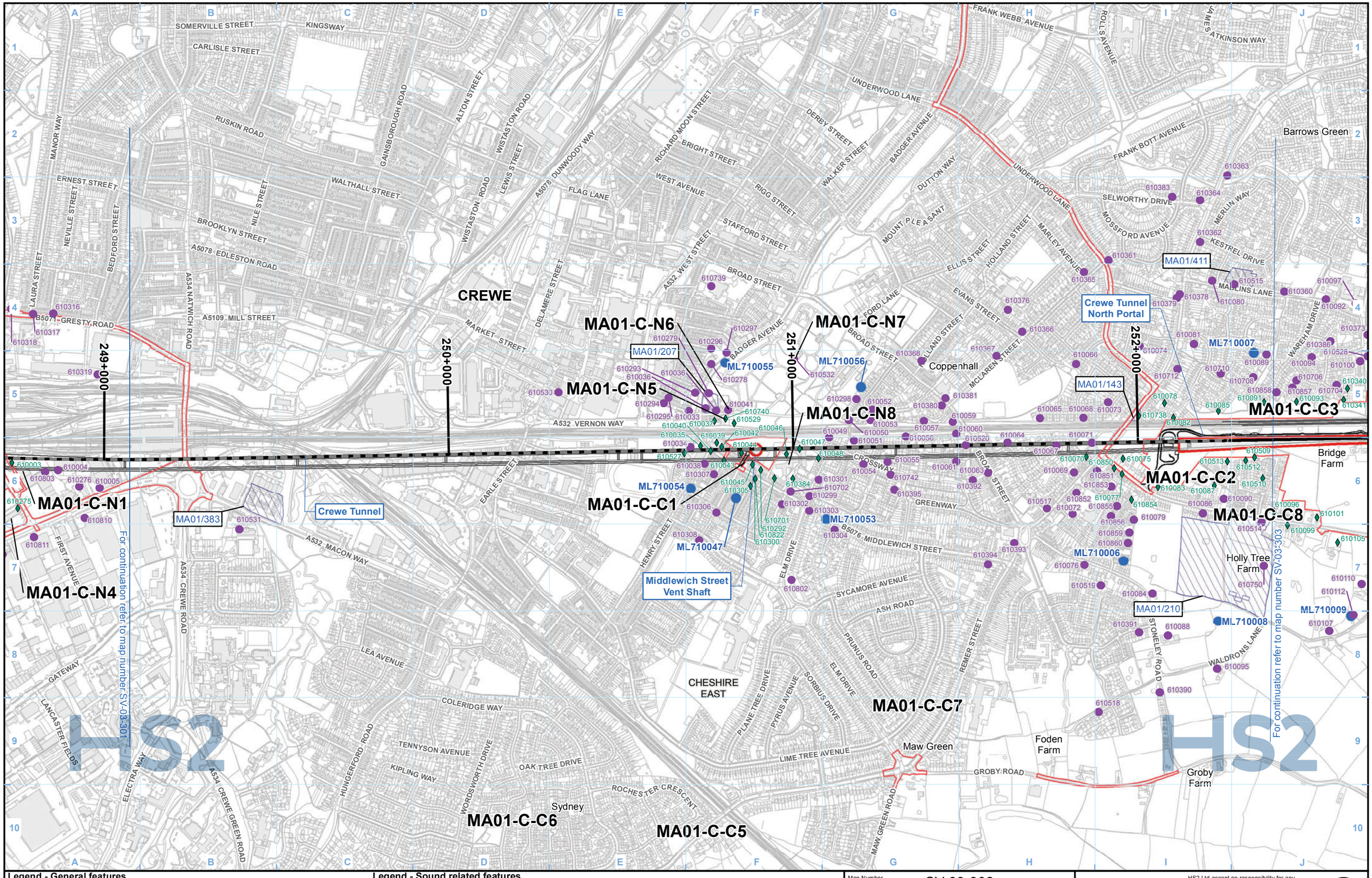
Community Area MA01: Hough to Walley's Green

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002002-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

- Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA01) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA01-C-C# and MA01-C-N#, respectively.

Map Number: SV-03-302

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA01: Hough to Walley's Green

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002049-P01

Date: 06/09/21

For SNV effects symbology please refer to SV-02 - Legend page

For continuation refer to map number SV-02-303-L1

For continuation refer to map number SV-02-302

For continuation refer to map number SV-02-304a

Barrows Green
CREWE
Moss Farm
Newstead Farm
CHESHIRE EAST
Warmingham Moss Southbound Viaduct
Spring Farm
Moat House Farm
Parkfield Farm
Bridge Farm
Winton Equestrian Centre
Parkers Road Overbridge
Holly Tree Farm
Coppenhall Moss
Hollyhurst Farm
Moss Farm
Moss Fields Farm
Moss Lane Farm
Ridding Farm
Groby Farm
Lane Ends Farm
Coppenhall House Farm

MA01-O-C2
MA01/170
MA01/411
MA01/168
MA01/405
MA01/143
MA01/360
MA01/210

252+000
253+000
254+000
255+000

ML710003
ML710004
ML710005
ML710007
ML710010
ML710012
ML710000
ML710001
ML710019
ML710006
ML710008
ML710009
ML710013
ML710014
ML710015
ML710016
ML710017

Up to 3m
Up to 3m
Up to 3m
Up to 5m
Up to 3m

FRANK BOTT AVENUE
B5076 BRADFIELD ROAD
BEACONSALL DRIVE
SELWORTHY DRIVE
MERLIN WAY
MOSSFORD AVENUE
KESTREL DRIVE
MARTINS LANE
PARKERS ROAD
THORN TREE DRIVE
BELTONY DRIVE
LABOURDAM DRIVE
MILLS WAY
A530
MOSS LANE
STONELEY ROAD
WALDRONS LANE
WARMINGHAM ROAD
GROBY ROAD
DURY LANE

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-303

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

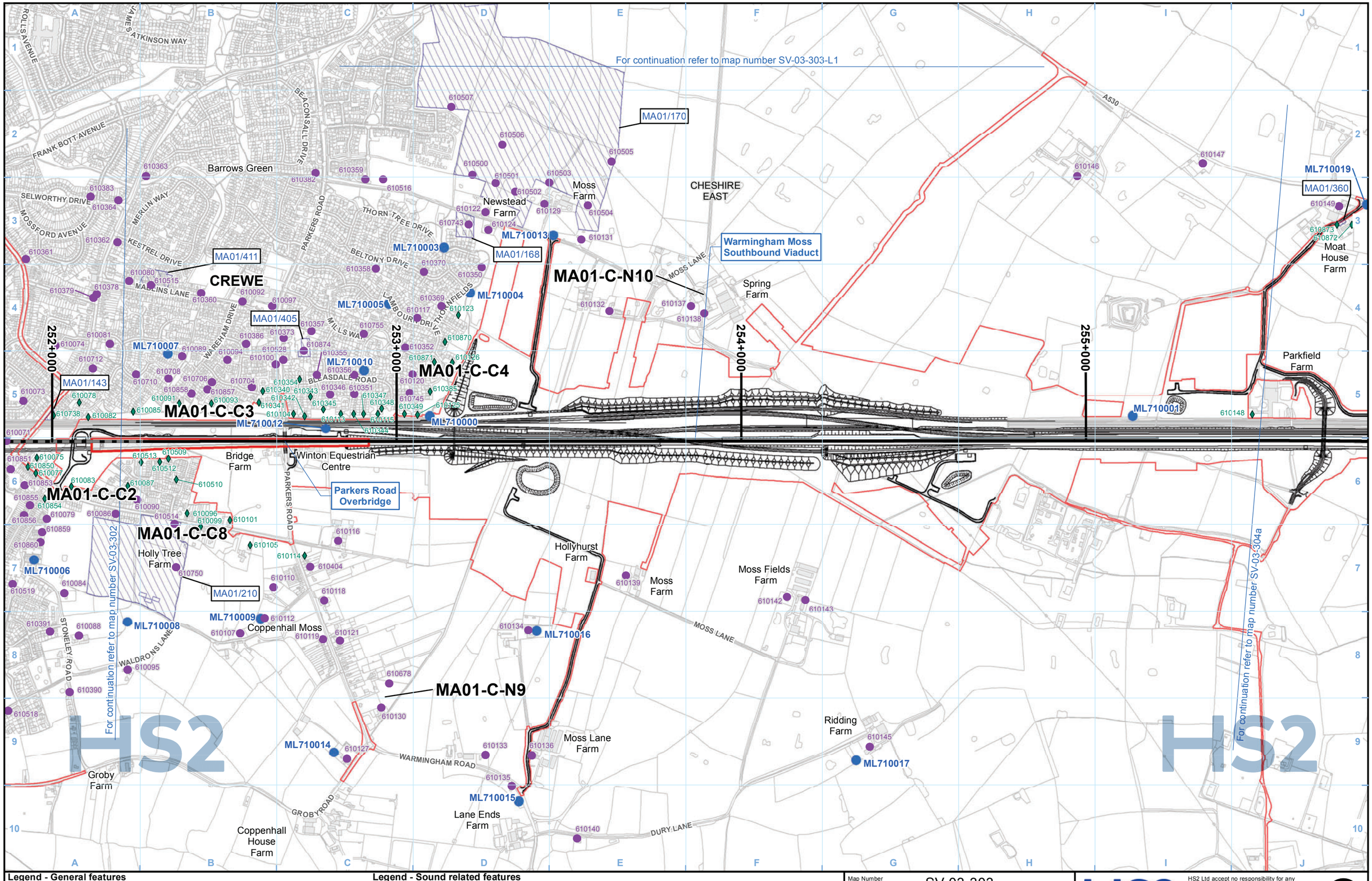
Community Area MA01: Hough to Walley's Green

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002003-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA01) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA01-C-C# and MA01-C-N#, respectively.

Map Number: SV-03-303

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA01: Hough to Walley's Green

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002050-P01

Date: 06/09/21

For SNV effects symbology please refer to SV-02 - Legend page

Leighton Grange

Leighton Hall Farm

A530 MIDDLEWICH ROAD

PYMS LANE

CHESHIRE EAST

Hoolgrave Manor

B5074

High Farm

Bradfield Green

EARDSWICK LANE

A530 MIDDLEWICH ROAD

B5076 FLOWERS LANE

SMITHY LANE

MINSHULL NEW ROAD

ML710011

For continuation refer to map number SV-02-303

MA01/170

HS2

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-303-L1

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Community Area MA01: Hough to Walley's Green

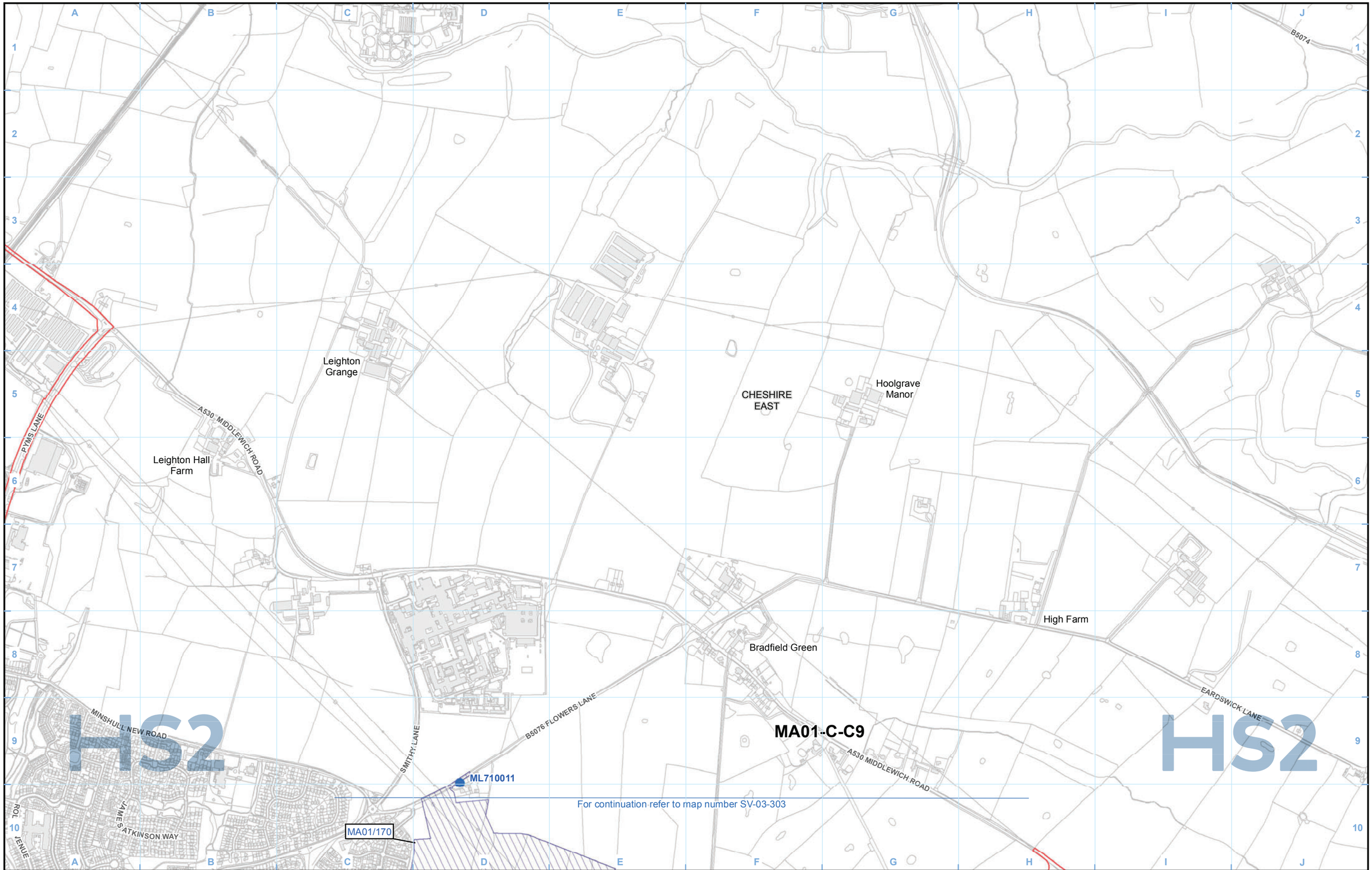
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002874-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

- Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA01) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA01-C-C# and MA01-C-N#, respectively.

Map Number: SV-03-303-L1

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA01: Hough to Walley's Green

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002890-P01

Date: 06/09/21

For SNV effects symbology please refer to SV-02 - Legend page

Brook House Farm
BROOKHOUSE LANE
CHESHIRE EAST
Weaver Bank
ML710021
610156
610158
610166
610168
Walley's Green
MA01/360
610147
610149
ML710019
610151
610155
610157
Moat House Farm
610873
610872
A530 MIDDLEWICH ROAD
Newfield Farm
610163
610407
610164
610160
CHESHIRE WEST AND CHESTER
Wimboldsley Grange Farm
610182
Lea Hall Farm
610165
610169
Newfield Hall Farm
Wimboldsley Hall Farm
257+000
256+000
258+000
Crewe North Rolling Stock Depot
For continuation refer to map number SV-02-303
Parkfield Farm
610148
ML710001
610171
Up to 4m
Up to 4m
A530 Nantwich Road Overbridge
MA01/145
610162
Park Hall Farm
A530 NANTWICH ROAD
610153
610173
610746
610180
MA02/328
610186
610185
ML710046
610178
610183
610877
Wimboldsley
Park House Farm
CHAPEL LANE
WIMBOLDSLEY TO LOSTOCK GRALAM
HOUGH TO WALLEY'S GREEN
610174
610388
610181
610184
610188
ML710023
Newfield Farm
610176
610177
SCHOOL LANE
Occlestone Green
HS2
HS2
For continuation refer to map number SV-02-304a-R1
ML710024
For continuation refer to map number SV-02-305
FORGE MILL LANE
Manor Farm
Field's Farm

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-304a

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

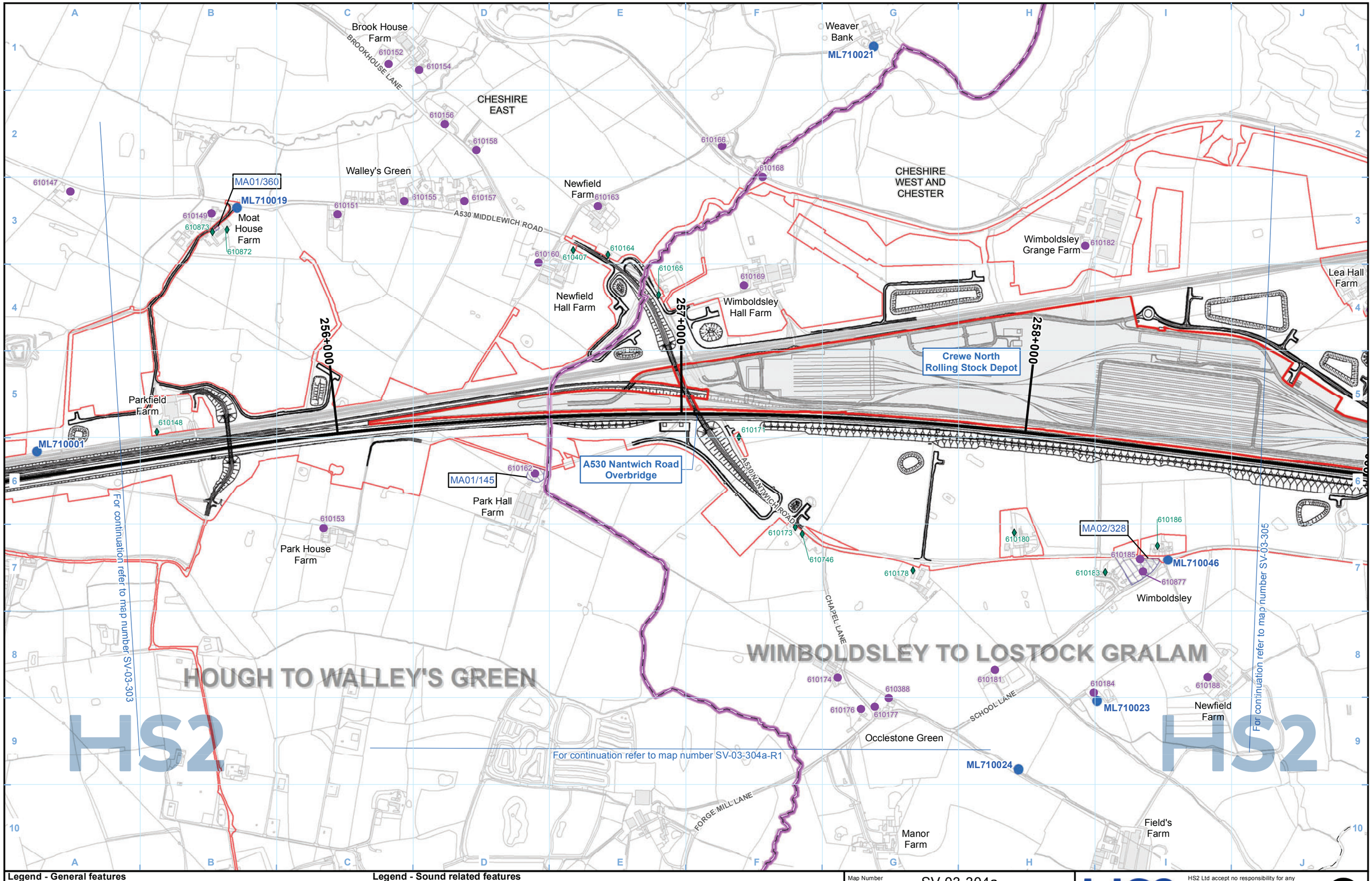
Community Area MA01: Hough to Walley's Green

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002004-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

- Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA01) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA01-C-C# and MA01-C-N#, respectively.

Map Number: SV-03-304a

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA01: Hough to Walley's Green

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002051-P01

Date: 06/09/21

For SNV effects symbology please refer to SV-02 - Legend page

For continuation refer to map number SV-02-304a

ML710020

WIMBOLDSLEY TO LOSTOCK GRALAM

HOUGH TO WALLEY'S GREEN

CHESHIRE EAST

CHESHIRE WEST AND CHESHIRE

Manor Farm

Field's Farm

Forge Mill Farm

Oak Tree Farm

Warmingham

Greenbank Farm

FORGE MILL LANE

SUTTON LANE

SCHOOL LANE

WHITE HALL LANE

CRABMILL LANE

GREEN LANE

DRAGON'S LANE

TETTON LANE

A533 BOOTH LANE

MIDDLEWICH

DAVENHAM WAY

WARMINGHAM LANE

SYCAMORE DRIVE

FAIRACRE DRIVE

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-304a-R1

Map Name

Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Community Area MA01: Hough to Walley's Green

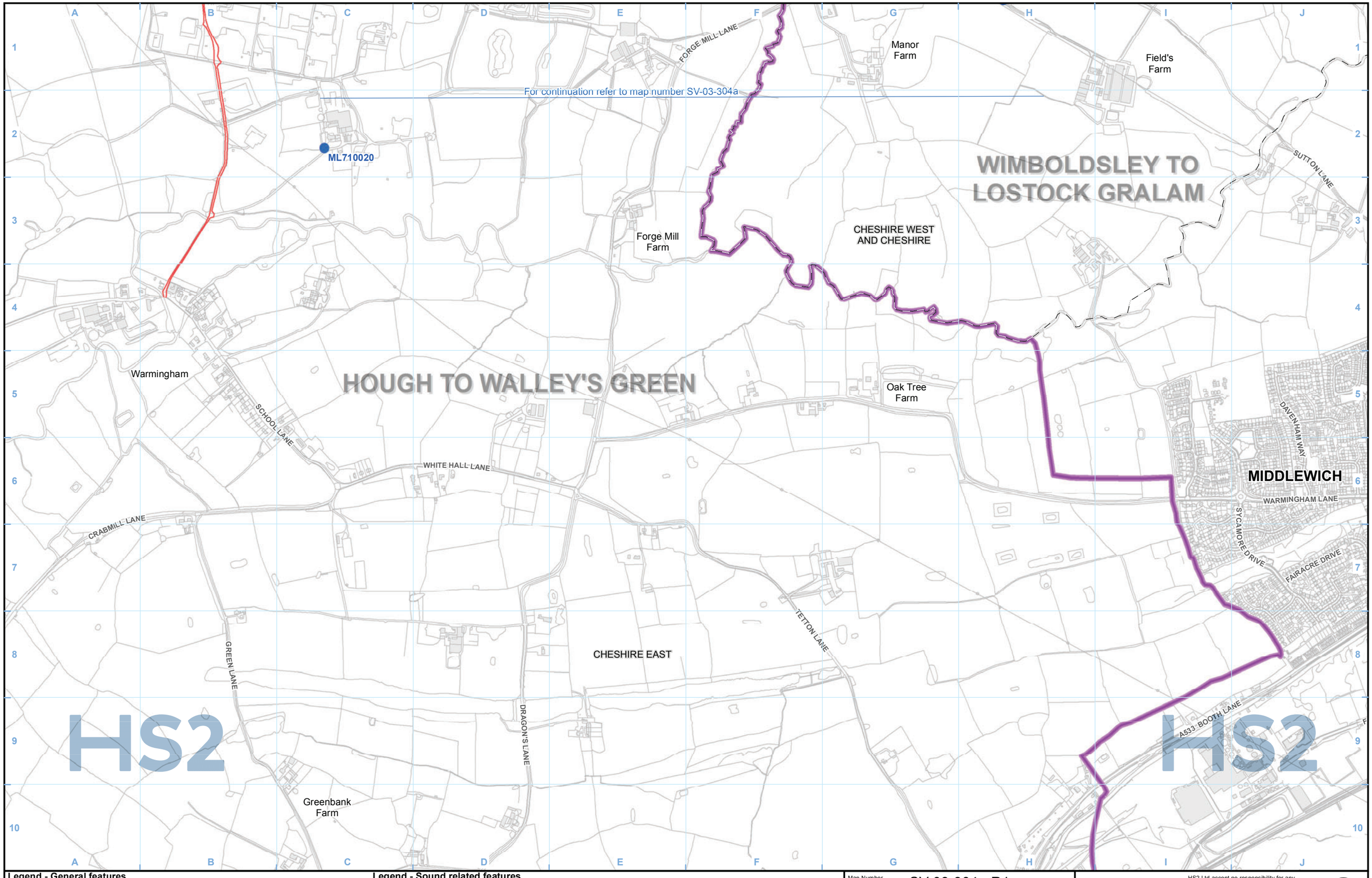
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003701-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

- Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA01) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA01-C-C# and MA01-C-N#, respectively.

Map Number: SV-03-304a-R1

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA01: Hough to Walley's Green

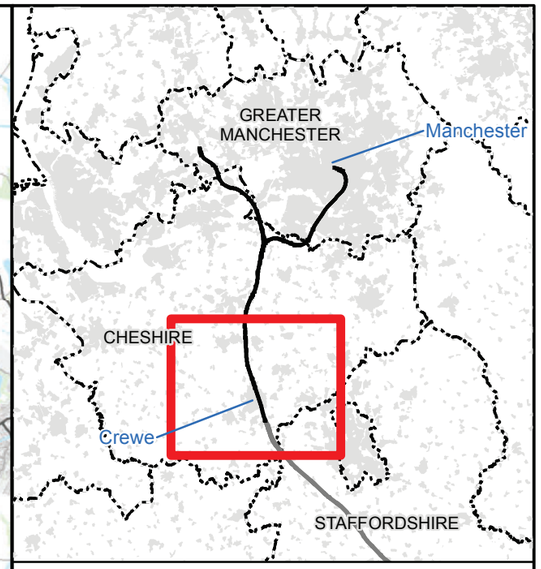
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003702-P01

Date: 06/09/21



Map Series Information:

SV-08 presents the predicted daytime operational sound from the new railway.

The sound levels from the new railway (expressed as $_{LpAeq,T}$) are presented in typical noise mapping colours in 5 dB steps. There is a panel at the top right of the figure; this panel contains a key communicating the daytime sound levels represented by the various colours. A corresponding and similar panel is found on SV-02 and SV-09, along with the key sound contours that were used within the environmental assessment.

Also presented on SV-08 are the following (which are also included on SV-02):

• A representation of the Proposed Scheme, including the railway alignment (indicating whether it is on the surface or in tunnel), any new and altered roads and all associated engineering and environmental mitigation earthworks;

• blue and green lines representing the wayside airborne noise mitigation measures included in the Proposed Scheme;

• the extent of the study area within which the direct impacts and effects of the scheme have been quantitatively assessed.

A more detailed explanation of each legend item included on the figures can be found in the data dictionary.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-08-INDEX-MA01

Map Name: Index Map of: Daytime Operational Sound Contour Maps

Community Area MA01: Hough to Walley's Green

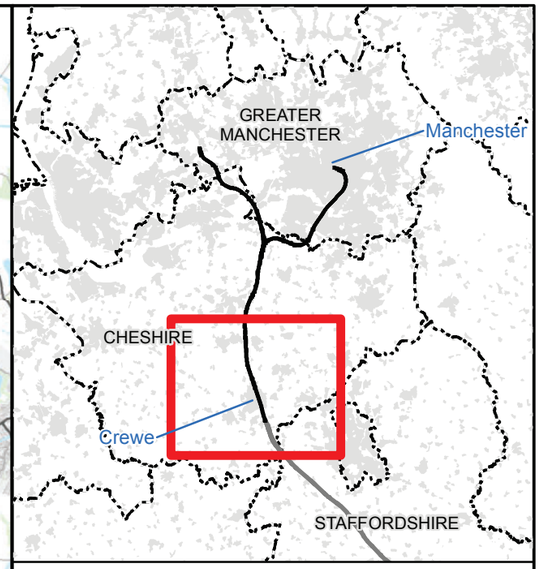
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:100,000

0 1,000 2,000 3,000 4,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003072-P01

Date: 06/09/21



Map Series Information:

SV-09 presents the predicted night-time operational sound from the new railway.

The sound levels from the new railway (expressed as $_{LpAeq,T}$) are presented in typical noise mapping colours in 5 dB steps. There is a panel at the top right of the figure; this panel contains a key communicating the night-time sound levels represented by the various colours. A corresponding and similar panel is found on SV-02 and SV-08, along with the key sound contours that were used within the environmental assessment.

Also presented on SV-09 are the following (which are also included on SV-02):

- A representation of the Proposed Scheme, including the railway alignment (indicating whether it is on the surface or in tunnel), any new and altered roads and all associated engineering and environmental mitigation earthworks;
- blue and green lines representing the wayside airborne noise mitigation measures included in the Proposed Scheme;
- the extent of the study area within which the direct impacts and effects of the scheme have been quantitatively assessed.

A more detailed explanation of each legend item included on the figures can be found in the data dictionary.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-09-INDEX-MA01

Map Name: Index Map of: Night-time Operational Sound Contour Maps

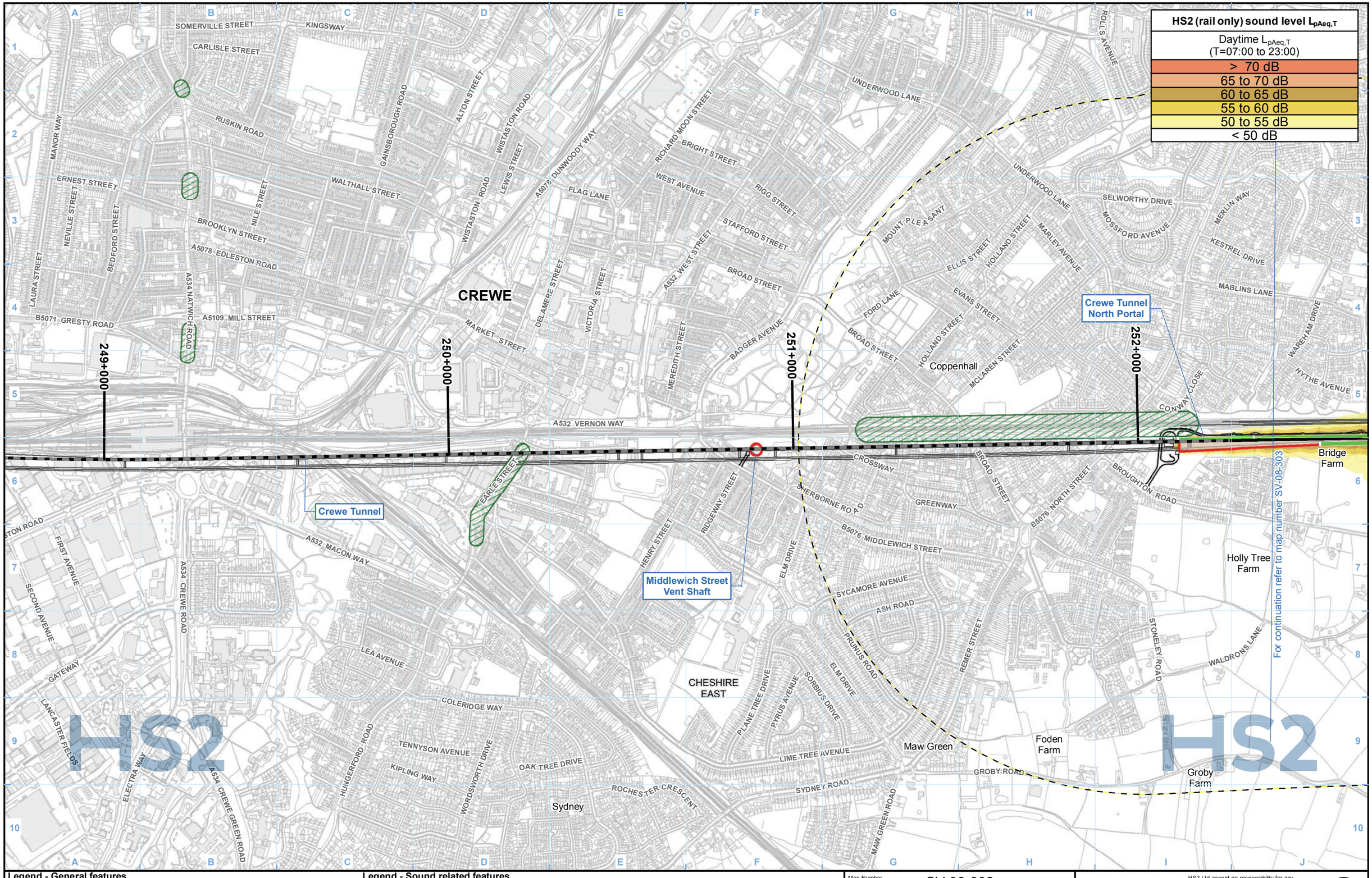
Community Area MA01: Hough to Walley's Green

Scale at A3: 1:100,000

0 1,000 2,000 3,000 4,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003113-P01

Date: 06/09/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-08-302

Map Name: Daytime Operational Sound Contour Maps

Community Area MA01: Hough to Walley's Green

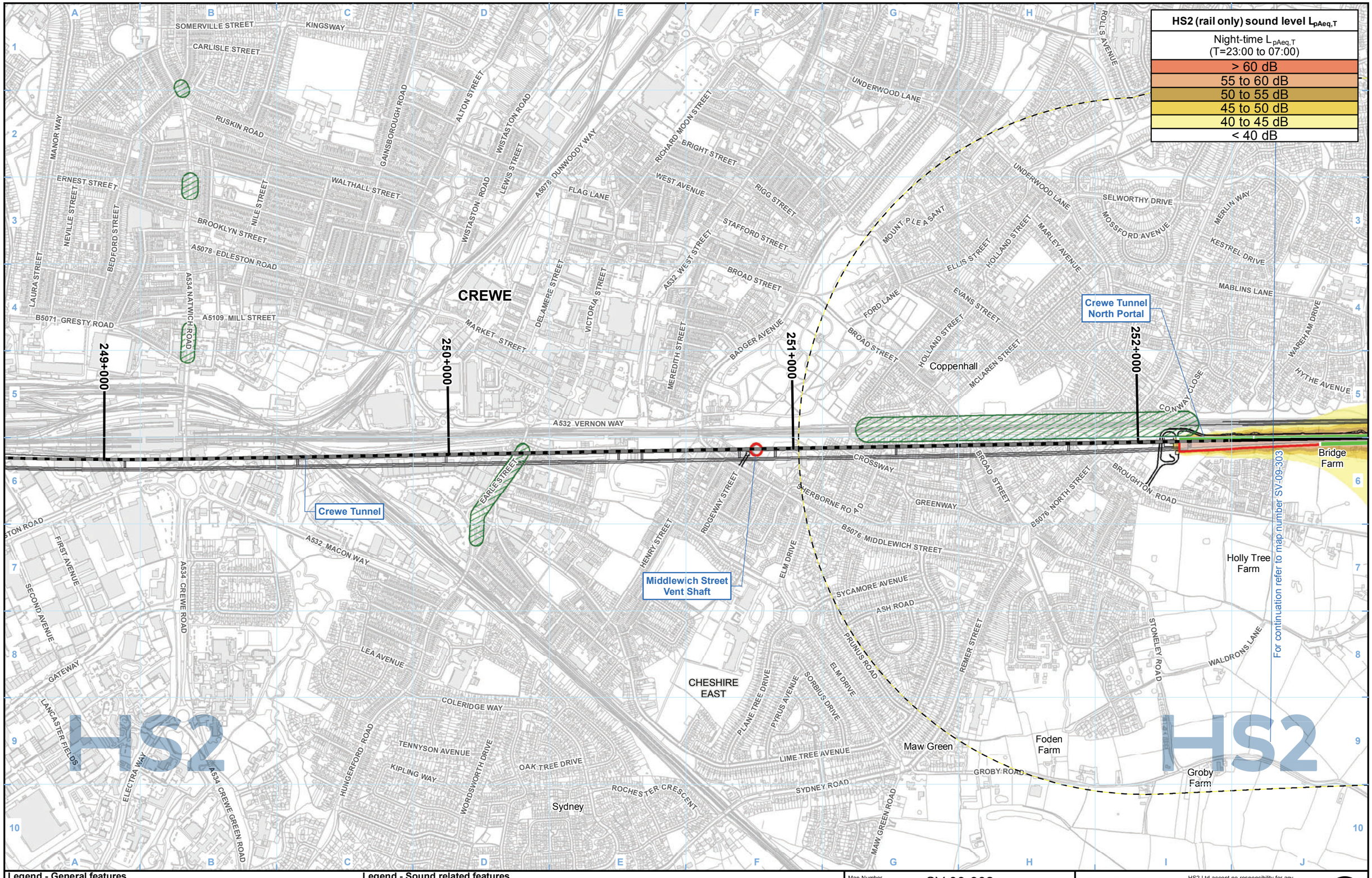
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003081-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-09-302

Map Name: Night-time Operational Sound Contour Maps

Community Area MA01: Hough to Walley's Green

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003122-P01

Date: 10/08/21

HS2 (rail only) sound level $L_{pAeq,T}$
Daytime $L_{pAeq,T}$ (T=07:00 to 23:00)
> 70 dB
65 to 70 dB
60 to 65 dB
55 to 60 dB
50 to 55 dB
< 50 dB

Barrows Green
CREWE
CHESHIRE EAST
Newstead Farm
Moss Farm
Warmingham Moss Southbound Viaduct
Spring Farm
Moat House Farm
Parkfield Farm
252+000
253+000
254+000
255+000
Up to 3m
Up to 3m
Up to 3m
Up to 5m
Up to 3m
Bridge Farm
Winton Equestrian Centre
Parkers Road Overbridge
Hollyhurst Farm
Moss Farm
Moss Fields Farm
Holly Tree Farm
Coppenhall Moss
Moss Lane Farm
Ridding Farm
Groby Farm
Lane Ends Farm
Coppenhall House Farm
SELWORTHY DRIVE
MOSSFORD AVENUE
MERLIN WAY
KESTREL DRIVE
MABLINS LANE
WAREHAM DRIVE
HYTHE AVENUE
CONWAY CLOSE
BROUGHTON ROAD
BEACONSALL DRIVE
PARKERS ROAD
THORN TREE DRIVE
BELTONY DRIVE
LAMBOURN DRIVE
THORNFIELDS
MILLS WAY
BLEASDALE ROAD
MOSS LANE
A530
STONELEY ROAD
WALDRONS LANE
WARMINGHAM ROAD
GROBY ROAD
DURY LANE
For continuation refer to map number SV-08-302
For continuation refer to map number SV-08-304a
HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks: Embankment, Cutting

Non engineering earthworks: Embankment, Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:

- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:

- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-08-303

Map Name: Daytime Operational Sound Contour Maps

Community Area MA01: Hough to Walley's Green

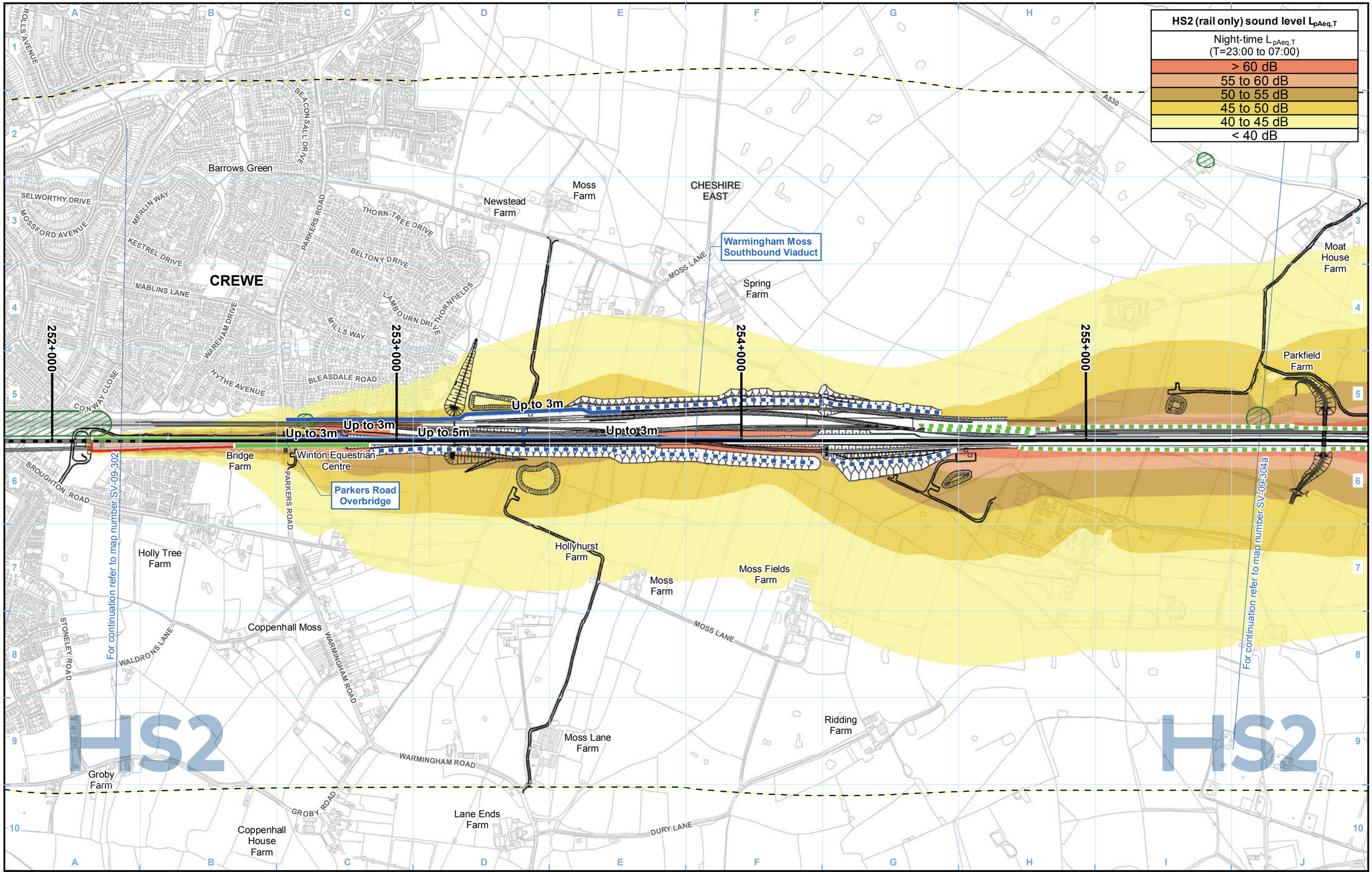
Registered in England. Registration number 06791686. Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003082-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-09-303

Map Name: Night-time Operational Sound Contour Maps

Community Area MA01: Hough to Walley's Green

Registered in England. Registration number 06791686. Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003123-P01

Date: 10/08/21

HS2 (rail only) sound level $L_{pAeq,T}$
Daytime $L_{pAeq,T}$ (T=07:00 to 23:00)
> 70 dB
65 to 70 dB
60 to 65 dB
55 to 60 dB
50 to 55 dB
< 50 dB

Brook House Farm
BROOKHOUSE LANE
Weaver Bank
CHESHIRE EAST
Walley's Green
Newfield Farm
CHESHIRE WEST AND CHESTER
A530 MIDDLEWICH ROAD
Moat House Farm
For continuation refer to map number SV-08-303
Wimboldsley Grange Farm
Lea Hall Farm
Newfield Hall Farm
Wimboldsley Hall Farm
256+000
257+000
258+000
Crewe North Rolling Stock Depot
Parkfield Farm
Up to 4m
Up to 4m
A530 Nantwich Road Overbridge
A530 NANTWICH ROAD
Park Hall Farm
Park House Farm
For continuation refer to map number SV-08-305
CHAPEL LANE
Wimboldsley
WIMBOLDSLEY TO LOSTOCK GRALAM
HOUGH TO WALLEY'S GREEN
SCHOOL LANE
Newfield Farm
Occlestone Green
FORGE MILL LANE
Manor Farm
Field's Farm

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-08-304a

Map Name: Daytime Operational Sound Contour Maps

Community Area MA01: Hough to Walley's Green

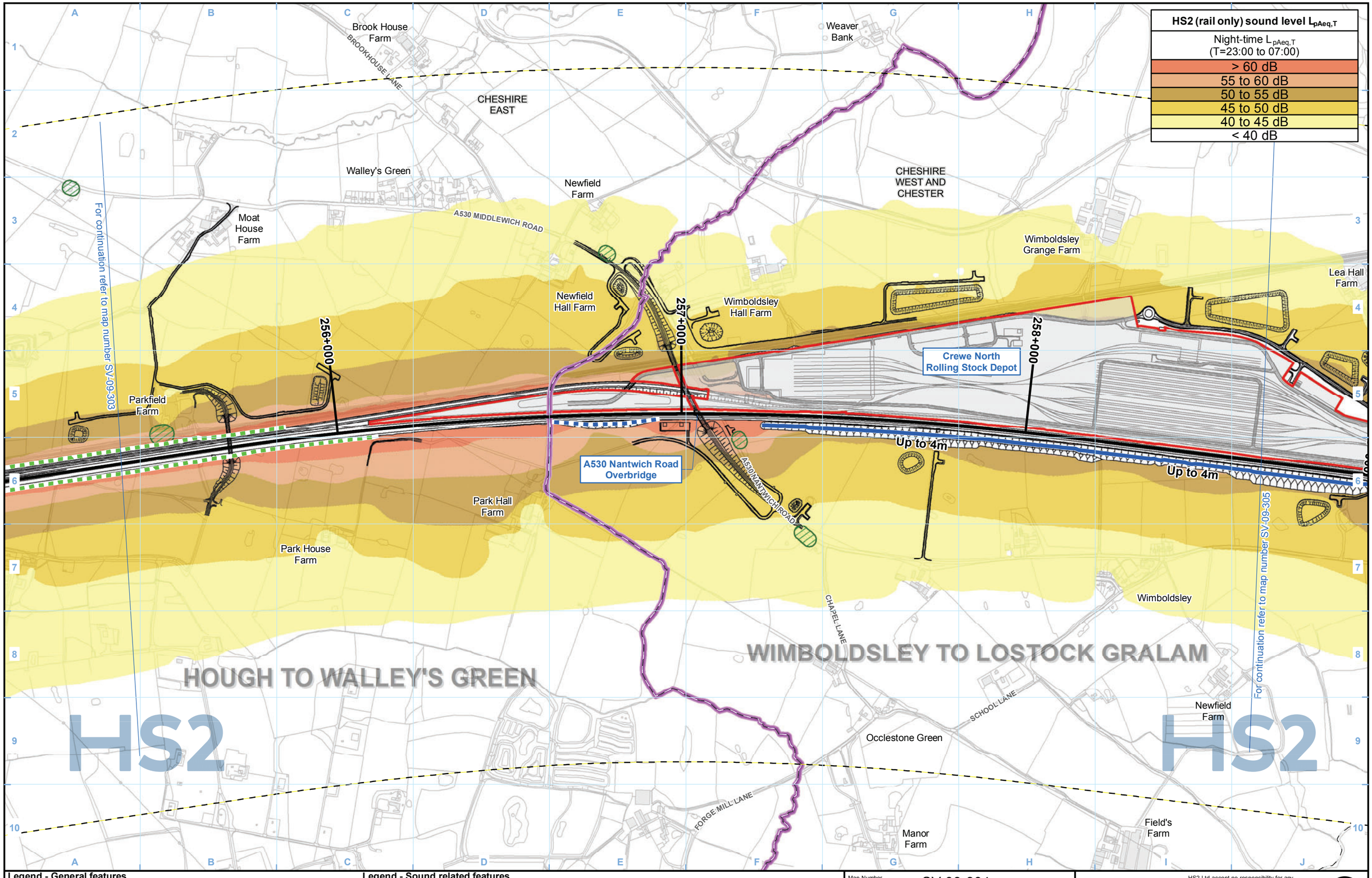
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003083-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-09-304a

Map Name: Night-time Operational Sound Contour Maps

Community Area MA01: Hough to Walley's Green

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003124-P01

Date: 10/08/21

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HS2

High Speed Rail (Crewe – Manchester) Environmental Statement

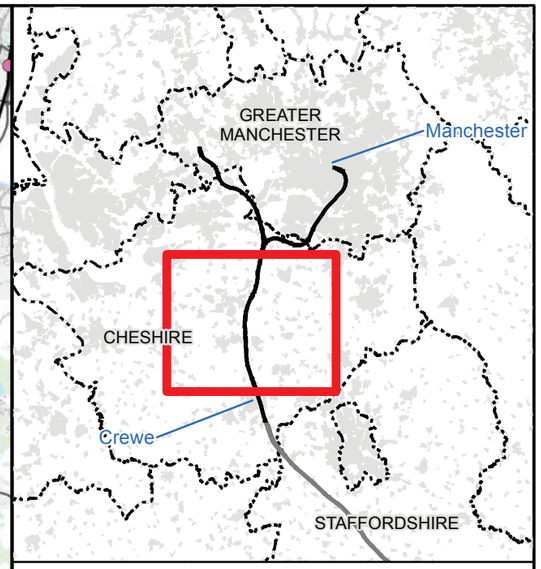
MA02: Wimboldsley to Lostock Gralam

SV-02 - Operational Noise and Vibration Impacts and Likely Significant Effects (with Assessment Location)

SV-03 - Assessment and Monitoring Locations for Construction Sound, Noise and Vibration Assessments

SV-08 - Daytime Operational Sound Contour Maps

SV-09 - Night-time Operational Sound Contour Maps



Map Series Information:

SV-02 presents the direct operational noise impacts and likely significant effects of the Proposed Scheme.

The SV-02 figure series necessarily contains a large amount of information relating to the operational noise and vibration assessment. It is designed to communicate visually the assessment process from the prediction of impacts to the determination of likely residual significant effects. The corresponding text is included in Vol2 and Vol5.

Key items on the map include the following:
- The Proposed Scheme (the proposed railway alignments and surrounding associated earthworks/roads);
- blue and green lines representing the wayside airborne noise mitigation measures included in the Proposed Scheme;
- the study areas, which indicate the areas within which direct sound and vibration impacts of the scheme have been quantitatively assessed;
- the calculated direct operational impacts of the scheme, displayed as colour-coded buildings and symbols representing buildings that would potentially qualify for noise insulation;
- sound contours representing sound produced by the new railway (displayed in a simpler manner than on SV-08 and SV-09 in order not to obscure the features on the map series);
- the assessment locations at which a quantitative prediction of sound and impacts have been carried out (representing a number of nearby buildings). These are labelled with a unique reference number to enable cross-reference to further detail regarding the assessments in Volume 5: Appendix SV-003-0MA0X; and
- labels indicating where the likely residual direct noise or vibration significant effects have been identified. These are labelled with a unique reference number to enable cross-reference to further detail regarding the assessments in Volume 5: Appendix SV-003-0MA0X.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

A more detailed explanation of each legend item included on the figures and on the separate legend page can be found in the data dictionary.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-02-INDEX-MA02

Map Name: Index Map of: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Community Area MA02: Wimboldsley to Lostock Gralam

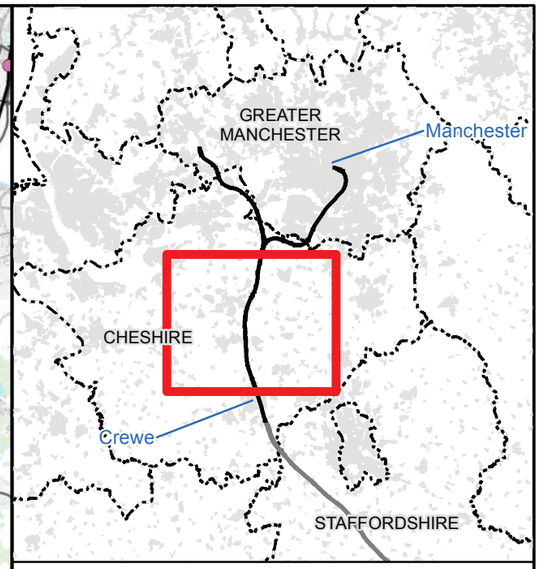
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:100,000

0 1,000 2,000 3,000 4,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002038-P01

Date: 10/08/21



Map Series Information:

The SV-03 figure series accompanies the construction noise & vibration assessments. It shows the locations at which a quantitative assessment of the direct effects of construction noise and/or vibration has been carried out. These are labelled as assessment locations with a reference number to enable cross-reference to the construction noise and vibration reports contained in Volume 5: Appendix SV-002-0MA02.

The figure series also shows locations at which baseline sound measurements were carried out.
These baseline measurement locations are labelled with a reference number to enable cross-reference to the baseline sound reports contained in Volume 5: Appendix SV-002-0MA02.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

A more detailed explanation of each legend item included on the figures can be found in the data dictionary.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-03-INDEX-MA02

Map Name: Index Map of: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA02: Wimboldsley to Lostock Gralam

Scale at A3: 1:100,000

0 1,000 2,000 3,000 4,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002084-P01

Date: 06/09/21

HS2 (rail only) noise level $L_{pAeq,T}$		Potential noise effect[1, 2]	
Night-time $L_{pAeq,T}$ (T=23:00 to 07:00)	Daytime $L_{pAeq,T}$ (T=07:00 to 23:00)	**Residential**	**Non-residential & quiet areas**
> 55 dB	> 65 dB	Likely significant effect on dwellings indicated by ◯, ✳ or ✕ avoided by noise insulation	Effect dependent on receptor and baseline. For further details see Volume 5, Appendix SV-003-0MA0X. Likely significant effect indicated by MA0X-O-N#[2]
40 to 55 dB	50 to 65 dB	Effect dependent on noise level change and significance criteria. Likely significant effects on groups of dwellings and any shared community open areas indicated by MA0X-O-C#[2]	
< 40 dB	< 50 dB	Generally no adverse effect expected[1]	

Operational airborne noise impacts at residential buildings[1]

- Major adverse
- Moderate adverse
- Minor adverse
- Negligible
- Beneficial

- ◯ Potential additional noise insulation (triggered by maximum noise levels at night)[1]
- ✳ Potential additional noise insulation (triggered by WHO Night Noise Guidelines Interim Target)[1]
- ✕ Potential noise insulation (triggered by Noise Insulation Regulations 1996)[1]
- ◯ L_{pAFmax} exceeds 60dB façade HS2 train only L_{pAFmax} +2.5dB façade correction

▭ Ground-borne noise or vibration impact at residential buildings

[1] For further information see Volume 5 Appendix SV-001-00000
[2] For details see relevant Volume 5 Appendix SV-003-0MA0X

SV-02 - Legend

Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Doc Number: -

Date:

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For SNV effects symbology please refer to SV-02 - Legend page

For continuation refer to map number SV-02-303

For continuation refer to map number SV-02-305

Brook House Farm
BROOKHOUSE LANE
CHESHIRE EAST
Weaver Bank
ML710021
610156
610158
610166
610168
Walley's Green
MA01/360
610147
610149
ML710019
610151
610155
610157
Moat House Farm
610873
610872
A530 MIDDLEWICH ROAD
Newfield Farm
610163
610407
610164
610160
CHESHIRE WEST AND CHESTER
Wimboldsley Grange Farm
610182
Lea Hall Farm
610165
610169
Wimboldsley Hall Farm
Newfield Hall Farm
256+000
257+000
258+000
Crewe North Rolling Stock Depot
Parkfield Farm
610148
ML710001
Up to 4m
610171
A530 Nantwich Road Overbridge
A530 NANTWICH ROAD
MA01/145
610162
Park Hall Farm
610153
Park House Farm
610173
610746
610180
MA02/328
610186
610185
ML710046
610178
610183
610877
Wimboldsley
CHAPEL LANE
WIMBOLDSLEY TO LOSTOCK GRALAM
HOUGH TO WALLEY'S GREEN
610174
610388
610177
610176
610181
610184
ML710023
610188
Newfield Farm
SCHOOL LANE
Occlestone Green
ML710024
FORGE MILL LANE
Manor Farm
Field's Farm
HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-304b

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

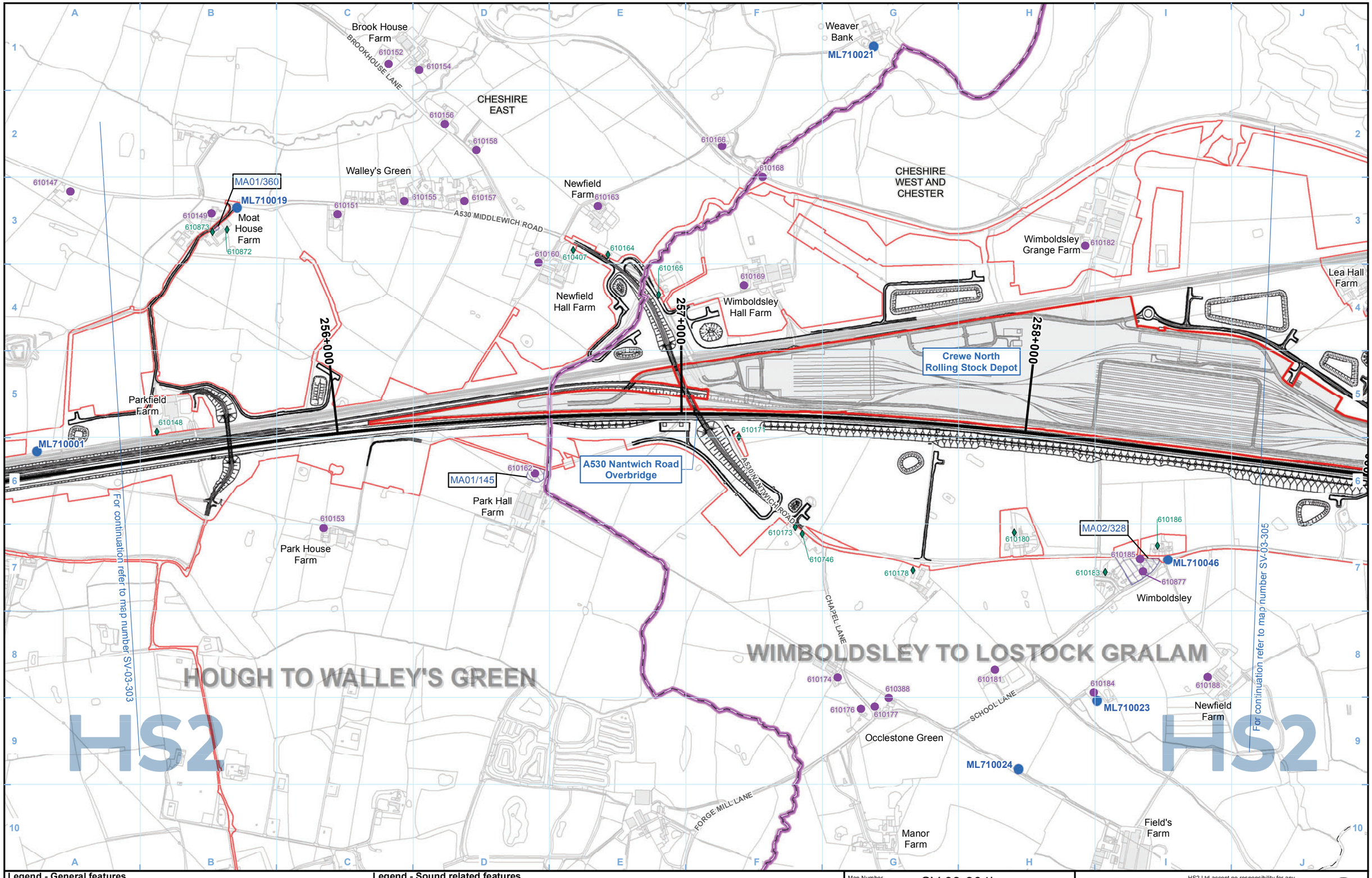
Community Area MA02: Wimboldsley to Lostock Gralam

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002005-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

- Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA02) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA02-C-C# and MA02-C-N#, respectively.

Map Number: SV-03-304b

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA02: Wimboldsley to Lostock Gralam

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002052-P01

Date: 06/09/21

For SNV effects symbology please refer to SV-02 - Legend page

MA02/247

Mole House Farm

ML710027

Clive Hall Farm

Pear Tree Farm

610196 610201

Clive Farm

610198 610204

Clive Green

610200

ML710026

610199

Lea Hall Farm

610189

ML710030

610216

MA02/217

610725

MA02/335

610875 610387

610724

610402 610876

610727

610217

Clive

610726

610723

610219 610403

MA02-O-C2

A54 Middlewich Road Viaduct

610722 610222

CHESHIRE WEST AND CHESTER

Stanthorne Park Mews

610202

Clive Green Lane Overbridge

259+000

260+000

261+000

262+000

Stanthorne Hall Farm

610228

ML710032

610239

610194

MA02-O-C1

ML710029

610206

Park Farm

Crewe North Rolling Stock Depot

Bank Farm

610238

Up to 4m

Up to 2m

Up to 3m

Up to 2m

Up to 4m

Up to 2m

610231

Yew-Tree Farm

Greenheyes Farm

610191

610193

610192

Shropshire Union Canal Viaduct

ML710046

610186

610185

610877

610183

Wimboldsley

MA02/328

For continuation refer to map number SV-02-304b

COAL PIT LANE

ML710028

610233

Stanthorne

610230 610408

610226

BIRCH LANE

610409

MA02-O-C3

610220

COAL PIT LANE

610224

610209

Lea House Farm

610205

610207

610188

Newfield Farm

610184

ML710023

ML710025

610197

Norcroft Farm

A530 NANTWICH ROAD

610225

ML710031

Mill Farm

610232

Bostock House Farm

ML710044

610234

610221

610732

ML712716

610229

A54 CHESTER ROAD

For continuation refer to map number SV-02-306

ML710045

Field's Farm

CHESHIRE EAST

Manor Park

Newtonia

HS2

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-305

Map Name

Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Community Area MA02: Wimboldsley to Lostock Gralam

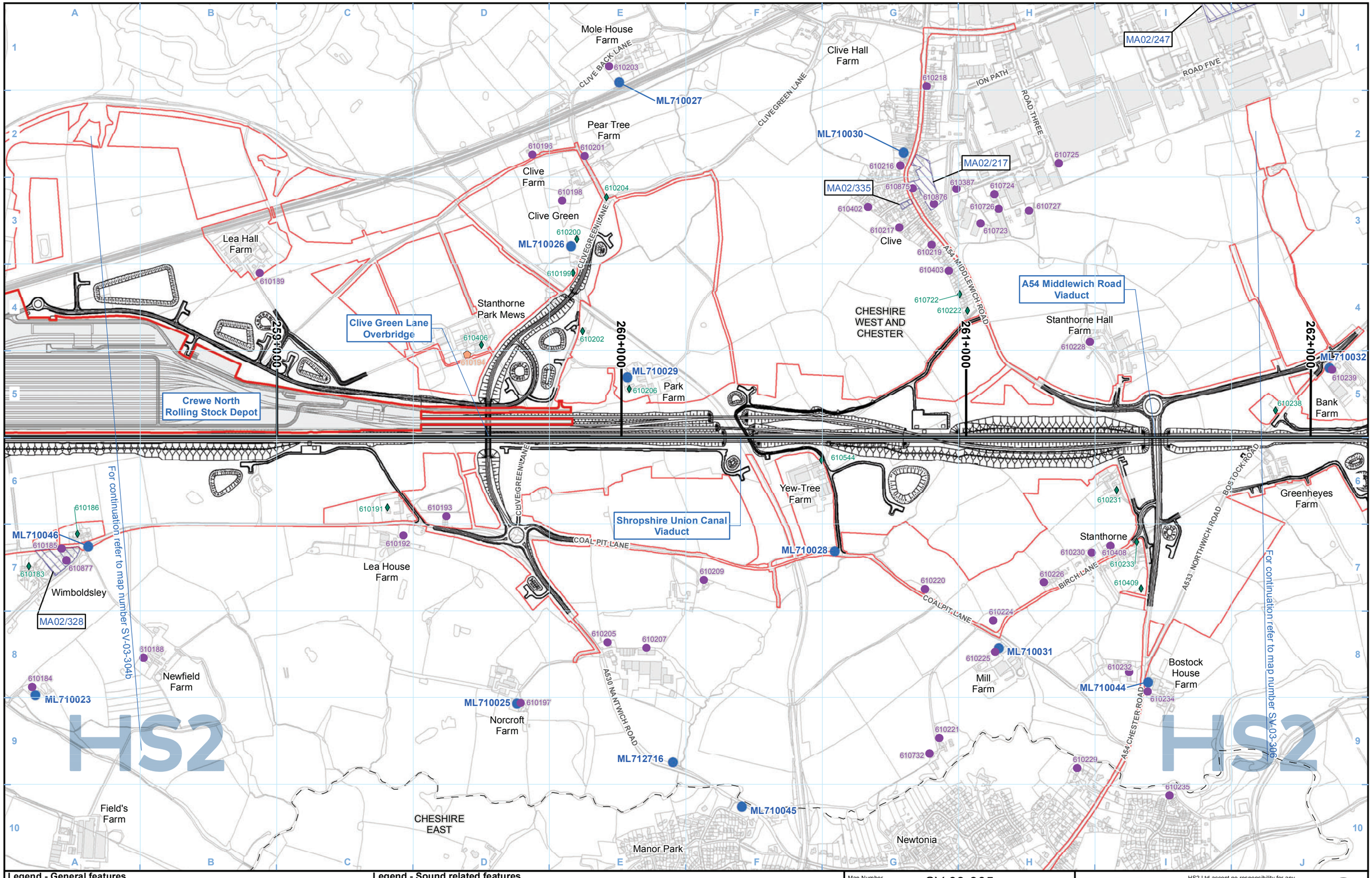
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002006-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks: Embankment; Cutting

Non engineering earthworks: Embankment; Cutting

Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA02) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA02-C-C# and MA02-C-N#, respectively.

Map Number: SV-03-305

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA02: Wimboldsley to Lostock Gralam

Registered in England. Registration number 06791686. Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002053-P01

Date: 06/09/21

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Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

- Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA02) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA02-C-C# and MA02-C-N#, respectively.

Map Number: SV-03-305-L1

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA02: Wimboldsley to Lostock Gralam

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003937-P01

Date: 06/09/21

For SNV effects symbology please refer to SV-02 - Legend page

Bostock Green

Clive Hall Farm

CLIVEGREEN LANE

ION PATH

ROAD THREE

ROAD FIVE

MA02/247

For continuation refer to map number SV-02-306-L1

LONDON ROAD

610250

610251

610243

610249

610248

ML710035

Bostock Hall Farm

ML712803

610241

A533 BOSTOCK ROAD

For continuation refer to map number SV-02-305

ML710030

MA02/217

610725

610216

MA02/335

610875

610387

610724

610727

610402

610876

610217

Clive

610726

610723

610219

610403

MA02-O-C2

610722

610222

CHESHIRE WEST AND CHESTER

261+000

Stanthorne Hall Farm

610228

A54 Middlewich Road Viaduct

MA02/062

610240

610733

262+000

ML710032

610239

Bank Farm

River Dane Viaduct

263+000

264+000

610238

Up to 2m

Up to 3m

Up to 2m

Up to 2m

Up to 4m

Yew Tree Farm

610231

Greenheyes Farm

BOSTOCK ROAD

A54 MIDDLEWICH ROAD

610233

610408

610230

A533 NORTHWICH ROAD

ML710028

610226

BIRCH LANE

610220

MA02-O-C3

610409

COALPIT LANE

610224

ML710031

610225

Mill Farm

610232

Bostock House Farm

ML710044

610234

A54 CHESTER ROAD

610221

610732

610229

ML710033

610246

A530 CROXTON LANE

610242

ML710045

Newtonia

ML710037

For continuation refer to map number SV-02-307

HS2

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-306

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

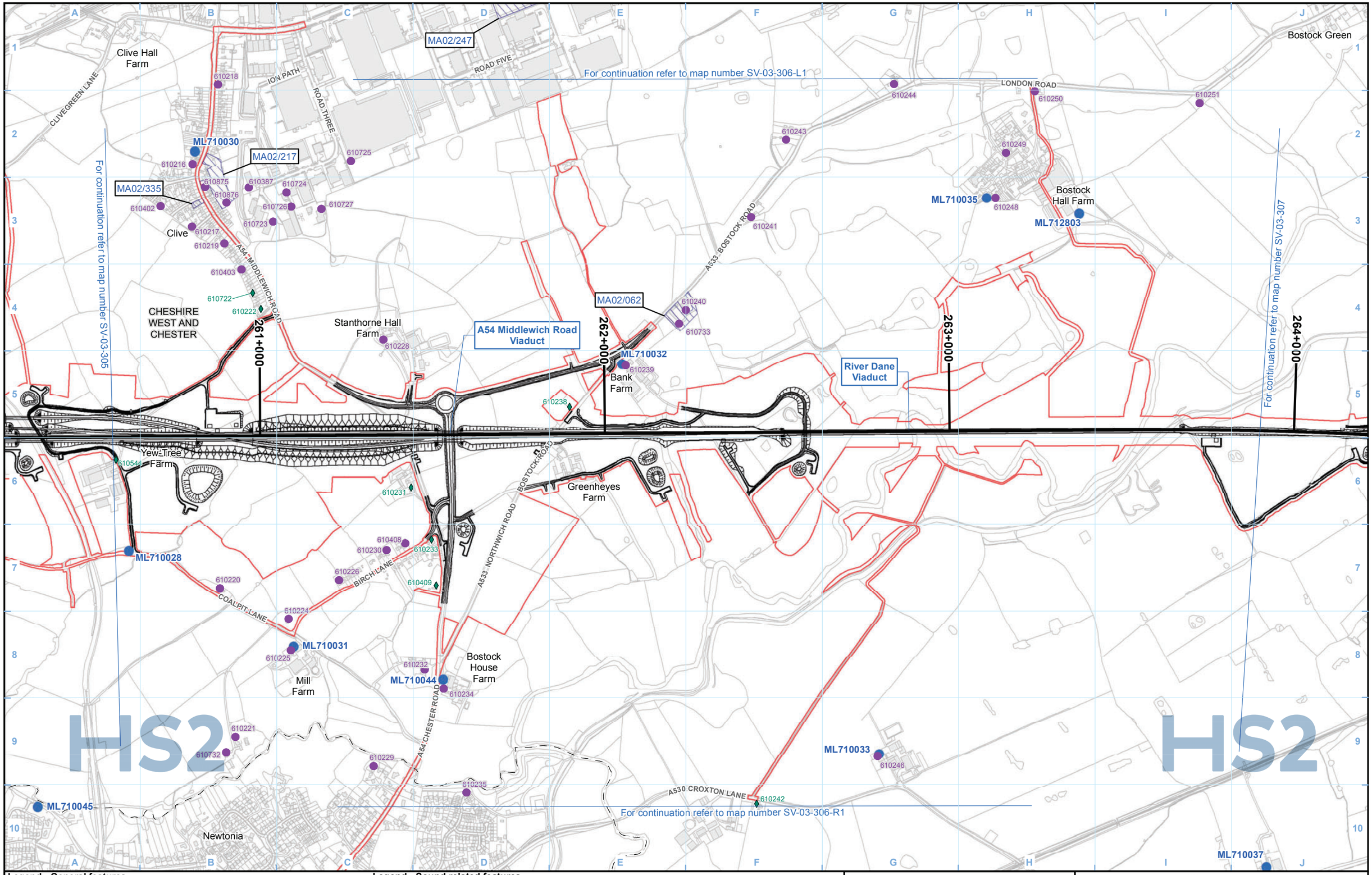
Community Area MA02: Wimboldsley to Lostock Gralam

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002007-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

- Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA02) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA02-C-C# and MA02-C-N#, respectively.

Map Number: SV-03-306

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA02: Wimboldsley to Lostock Gralam

Registered in England. Registration number 06791686. Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002054-P01

Date: 06/09/21

For SNV effects symbology please refer to SV-02 - Legend page

WINSFORD
Way's Green
Meadowbank
Gravel
Wharton
Wharton Green
CHESHIRE WEST AND CHESTER
Addashaw Farm
Bostock Farm
Home Farm
MA02/247
ML710034
For continuation refer to map number SV-02-306

GLADSTONE STREET
QUEENSWAY
DINGLE LANE
WAY'S GREEN
WEAVER STREET
A54 NEW HIGH STREET
HIGH STREET
BAKER'S LANE
OVERWAY
NEW ROAD
STOCKS HILL
BRADFORD ROAD
SCHOOL ROAD
SMOKEHALL LANE
A54 WINSFORD BYPASS
HILL STREET
KINGSWAY
LEVEN AVENUE
WEAVER VALLEY ROAD
A5018 WHARTON PARK ROAD
COALPORT DRIVE
THRUSH WAY
SHAW LANE
NAT LANE
MAYFIELD DRIVE
COLLINGTREE AVENUE
DEAKIN'S ROAD
JACK LANE
LEDWARD STREET
WHARTON ROAD
WALNUT DRIVE
LODGE DRIVE
NEWALL CRESCENT
B5355 CROOK LANE
ESK ROAD
PARK AVENUE
ROOKERY RISE
STATION ROAD
RILSHAW LANE
RIBBLE AVENUE
DERWENT AVENUE
BILLON AVENUE
BRADBURY ROAD
NUN HOUSE DRIVE
TRENT AVENUE
ROAD TWO
ROAD ONE
A54
A5018 BOSTOCK ROAD
A533
A533 DAVENHAM BYPASS

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-306-L1

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Community Area MA02: Wimboldsley to Lostock Gralam

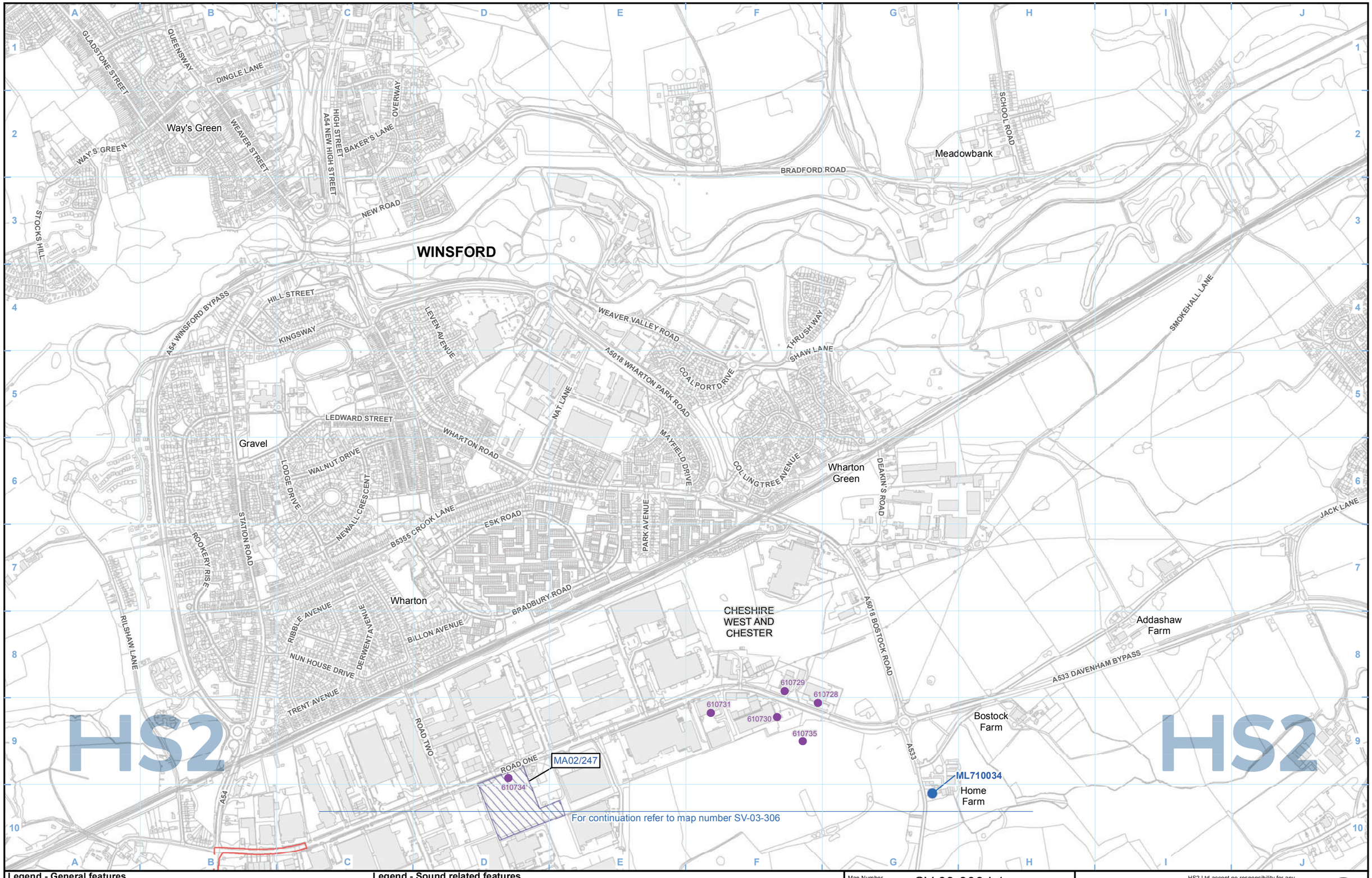
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002878-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks: Embankment; Cutting

Non engineering earthworks: Embankment; Cutting

Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA02) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA02-C-C# and MA02-C-N#, respectively.

Map Number: SV-03-306-L1

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA02: Wimboldsley to Lostock Gralam

Registered in England. Registration number 06791686. Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

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Doc Number: 2DE01-MWJ-EV-MAP-M000-002891-P01

Date: 06/09/21

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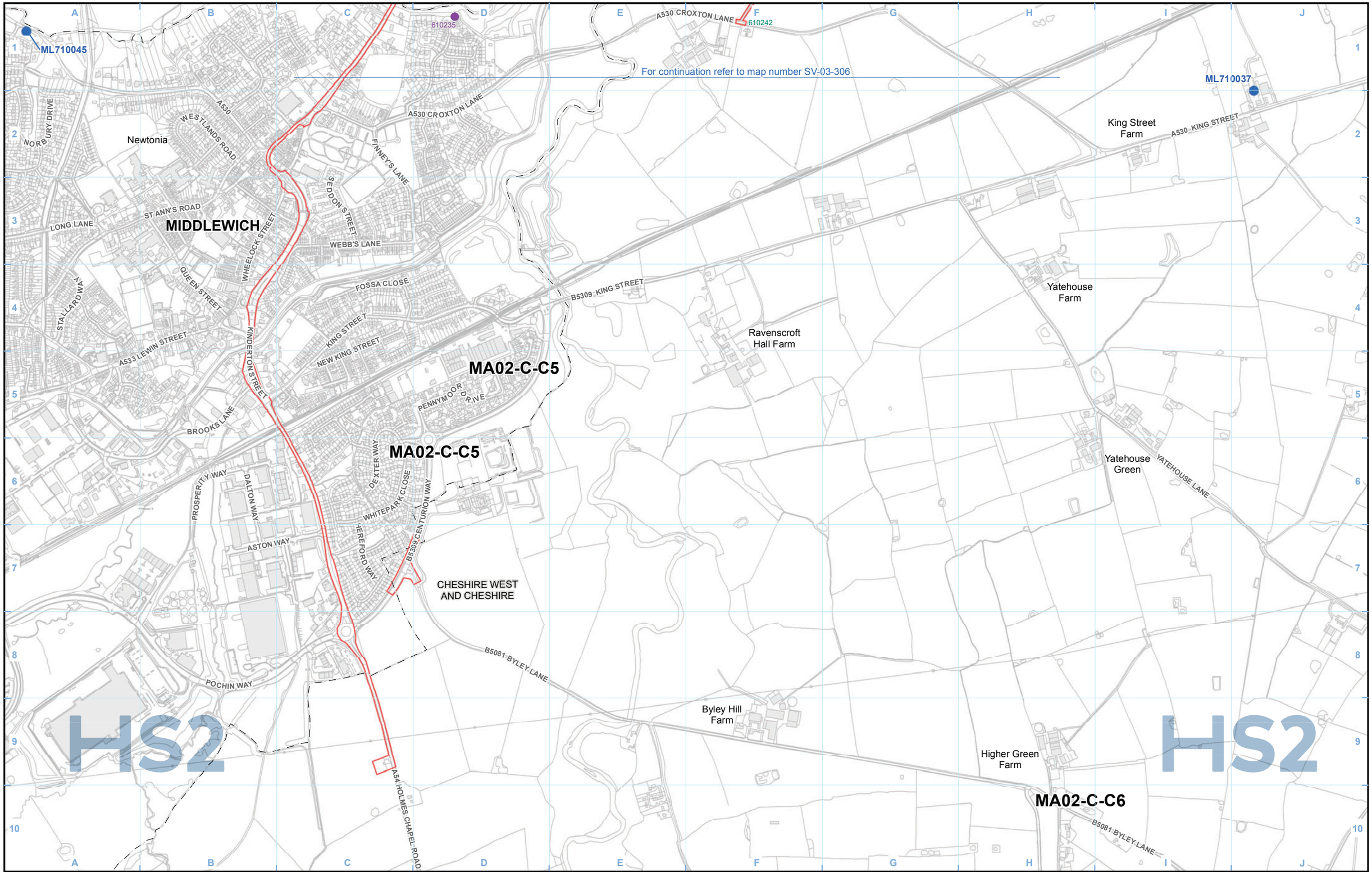

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

- Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA02) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA02-C-C# and MA02-C-N#, respectively.

Map Number: SV-03-306-R1

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA02: Wimboldsley to Lostock Gralam

Registered in England. Registration number 06791686. Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003938-P01

Date: 06/09/21

For SNV effects symbology please refer to SV-02 - Legend page

Bostock Green

For continuation refer to map number SV-02-307-L1

CHESHIRE WEST AND CHESTER

For continuation refer to map number SV-02-306

SHURLACH LANE

MANOR LANE

OLD LANE

WHATCROFT HALL LANE

A530 KING STREET

RUDHEATH WAY

CROWDERS LANE

DAVENHAM ROAD

B5082 PENN'S LANE

610251 610267 610266 610259 610265 610880 610262 610263 610256 610736 610258 610398 610269 610261 610399 610255 610257 610260

612506 612511 612513 612515 612503 613004 612507 612514 612512 612878 612508 612384 612509 612504 613204 613203 612505 612500 612516 613062 612510

MA02/347 MA02/348

Higher Shurlach

Park Farm

Billinge Green Farm

Manor Farm

Whatcroft Hall

Dairy Farm (Whatcroft)

Bridge Farm

Brook Farm

Oakwood Marina

Kingstreet Farm

Heath Farm

High House Farm

ML710038 ML710042 ML710039 ML712501 ML712503 ML712504 ML712505 ML710002 ML710043

MA02-O-C4 MA02-O-N1 MA02-O-C5

264+000 265+000 266+000 267+000

Up to 2m Up to 4m Up to 4m

Puddinglake Brook Viaduct

Trent And Mersey Canal Viaduct

Gad Brook Viaduct

For continuation refer to map number SV-02-307-R1

For continuation refer to map number SV-02-308

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-307

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Community Area MA02: Wimboldsley to Lostock Gralam

Registered in England. Registration number 06791686. Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

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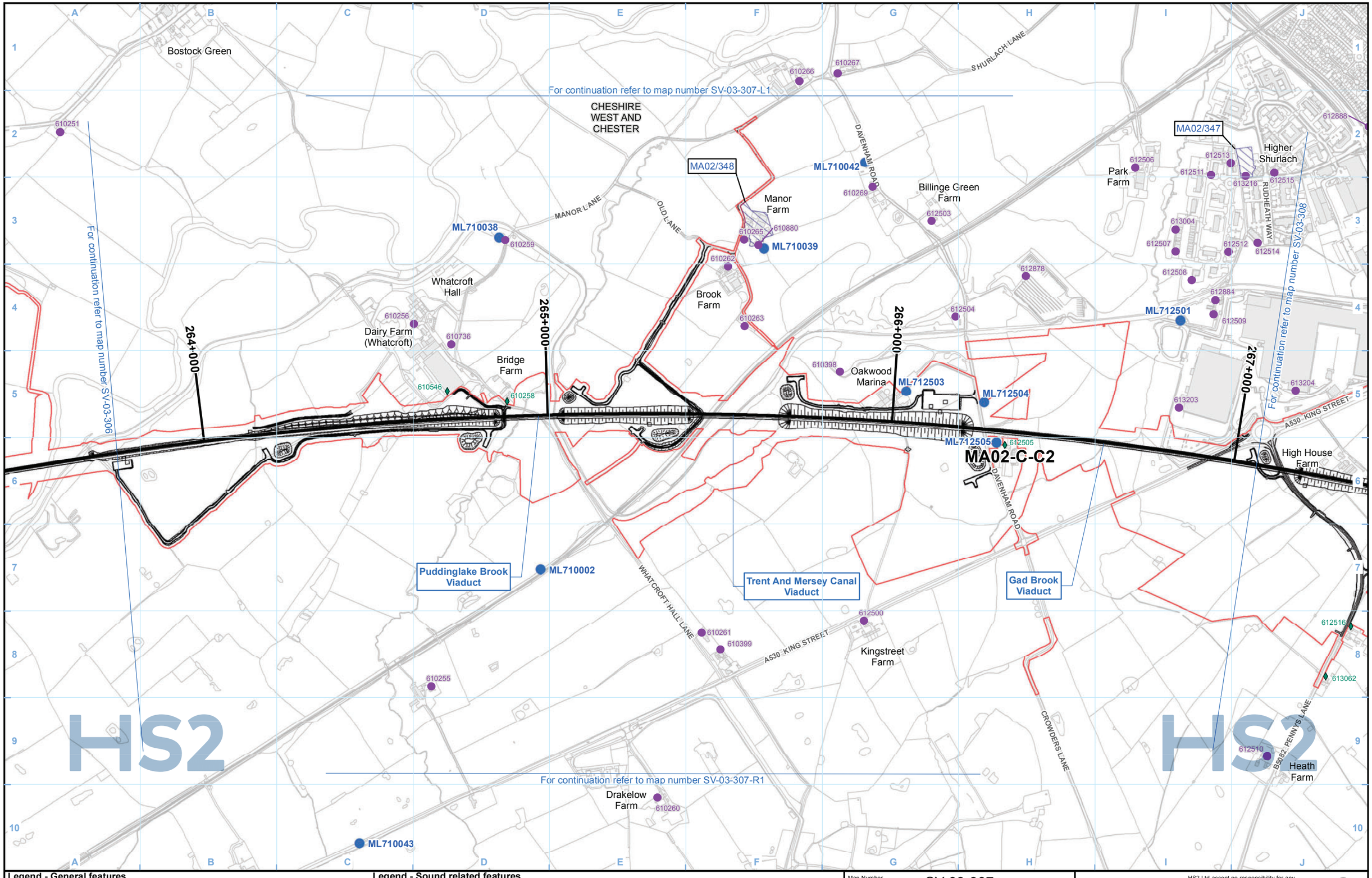
Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA02) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA02-C-C# and MA02-C-N#, respectively.

Map Number: SV-03-307

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA02: Wimboldsley to Lostock Gralam

Registered in England. Registration number 06791686. Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002055-P01

Date: 06/09/21

For SNV effects symbology please refer to SV-02 - Legend page

Kingsmead
NORTHWICH
Moulton
CHESHIRE WEST AND CHESTER
Davenham
Leftwich
Mere Heath
Bridge End Farm
ML710041
ML710040
Bostock Green
610266
610267
For continuation refer to map number SV-02-307

BLANDFORD DRIVE
REGENCY WAY
DUKES WAY
KENSINGTON WAY
A556 CHESTER ROAD
A533 KINGSMEAD
MOOR PARK WAY
ST GEORGE'S WAY
STRETTON WALK
WAYSTEAD CLOSE
BEECHFIELD
WEAVER ROAD
WHITLOW LANE
REGENT STREET
MEADOW LANE
PARK LANE
POPLAR AVENUE
MAIN ROAD
SUMMERFIELD DRIVE
MOUNT PLEASANT ROAD
HARTFORD ROAD
GREEN AVENUE
FIRTH FIELDS
FOUNTAIN LANE
CHURCH STREET
KINGSMEAD
A556 SHURLACH ROAD
LONDON ROAD
LIME AVENUE
ALVANLEY RISE
GRANVILLE ROAD
FAIRFIELD ROAD
CLIFTON DRIVE
KINGSLEY DRIVE
OLD HALL ROAD
JACK LANE
MERE BANK
A533 DAVENHAM BYPASS
SHIPBROOK ROAD
SHURLACH LANE

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-307-L1

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Community Area MA02: Wimboldsley to Lostock Gralam

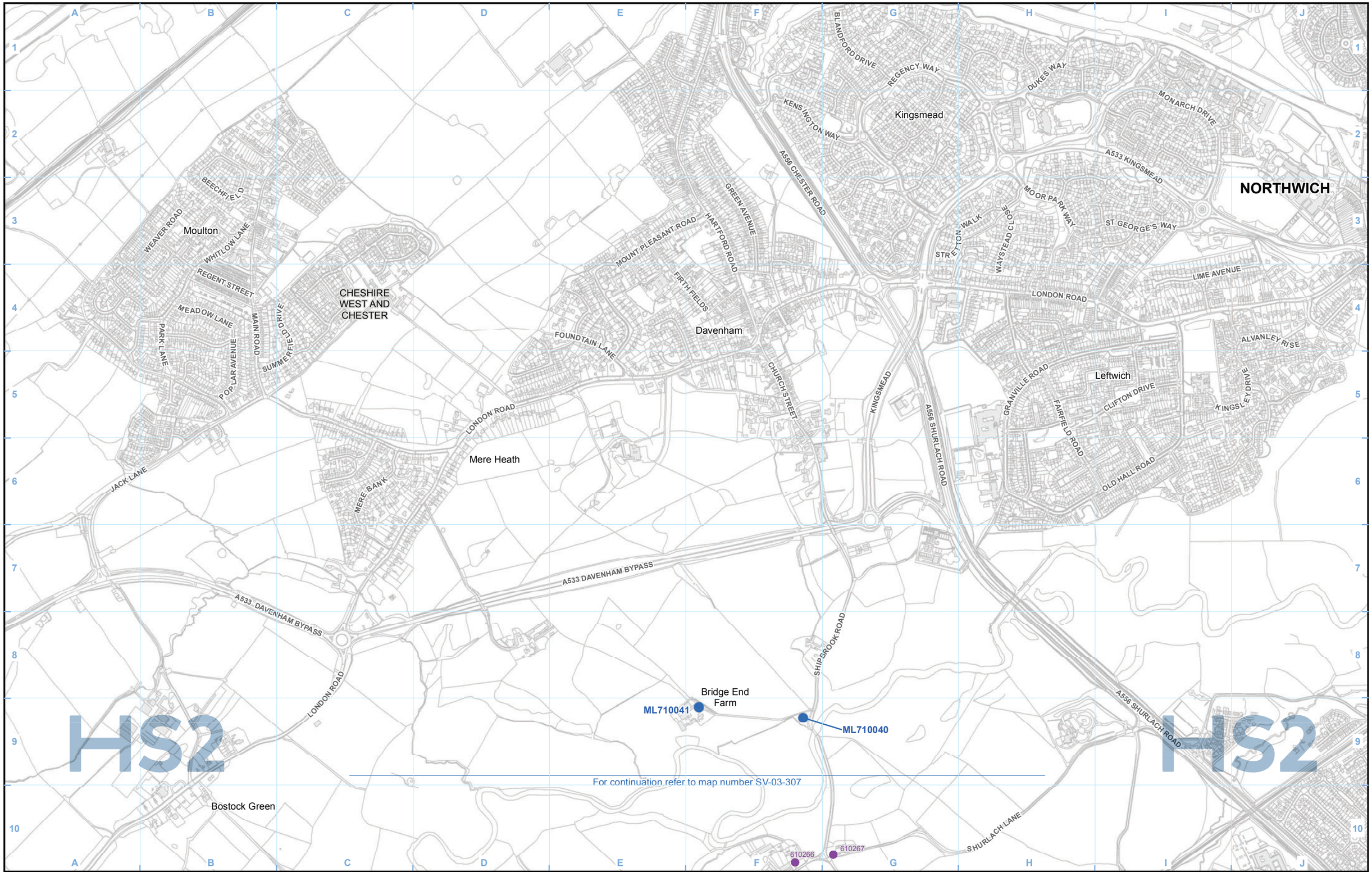
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002879-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

- Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA02) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA02-C-C# and MA02-C-N#, respectively.

Map Number: SV-03-307-L1

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA02: Wimboldsley to Lostock Gralam

Registered in England. Registration number 06791686. Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002893-P01

Date: 06/09/21

For SNV effects symbology please refer to SV-02 - Legend page

ML710043

ML710037

A530 KING STREET

King Street Farm

For continuation refer to map number SV-02-307

MARSH LANE

CROWDERS LANE

B5082 PENNYS LANE

BIRCHES LANE

Yatehouse Farm

Newall Farm

ML712733

CHESHIRE WEST AND CHESTER

Lach Dennis

COMMON LANE

Yatehouse Green

YATEHOUSE LANE

DRAKELOW LANE

B5082 HOLMES CHAPEL ROAD

Higher Green Farm

For continuation refer to map number SV-02-307-R2

B5081 BYLEY LANE

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-307-R1

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Community Area MA02: Wimboldsley to Lostock Gralam

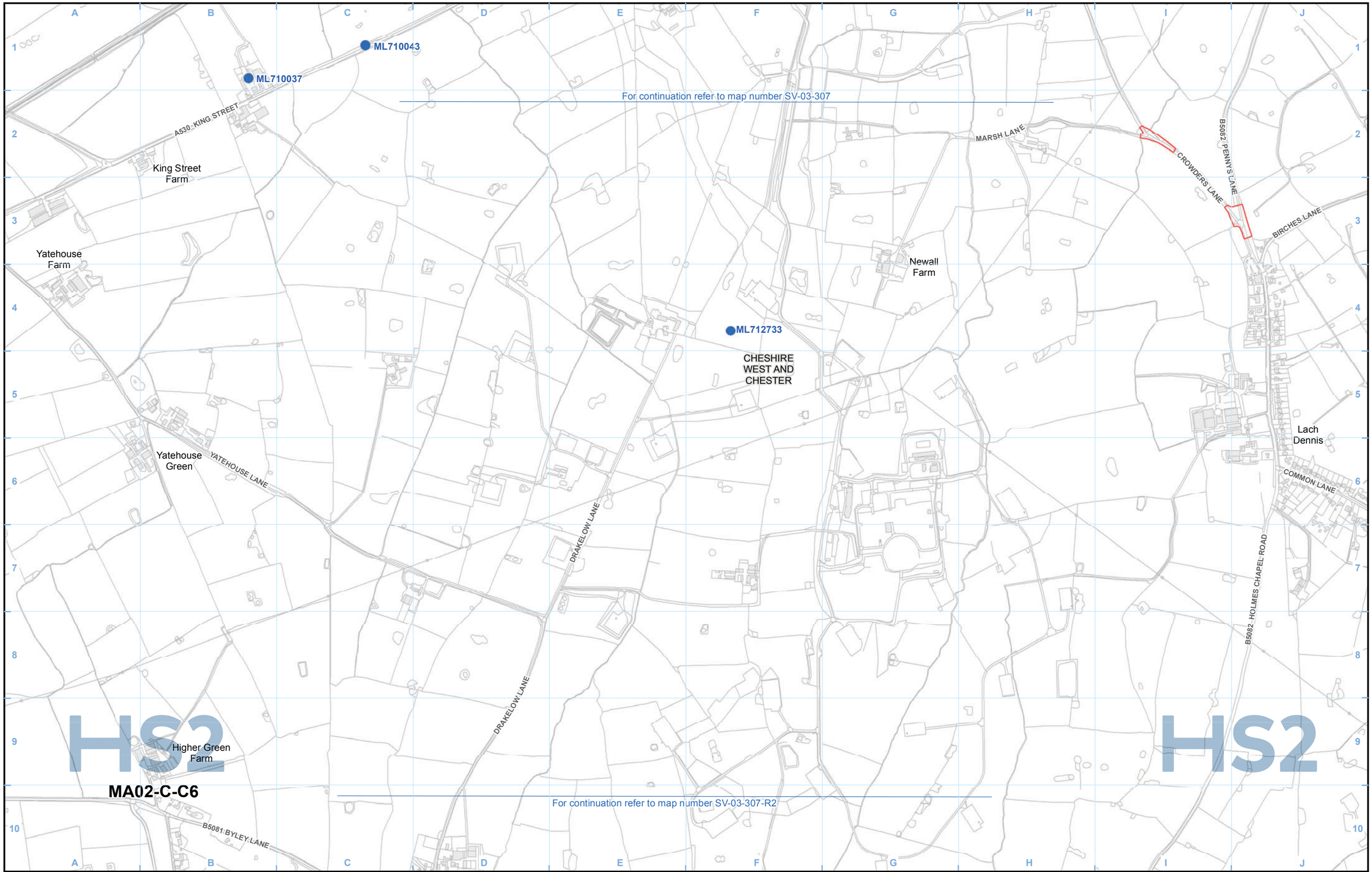
Registered in England. Registration number 06791686. Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003704-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA02) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA02-C-C# and MA02-C-N#, respectively.

Map Number: SV-03-307-R1

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA02: Wimboldsley to Lostock Gralam

Registered in England. Registration number 06791686. Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002892-P01

Date: 06/09/21

For SNV effects symbology please refer to SV-02 - Legend page

For continuation refer to map number SV-02-307-R1

B5081 BYLEY LANE
LILY LANE
Byley
Puddinglake
ML710080
ML710081
CHESHIRE WEST AND CHESTER
B5082 HOLMES CHAPEL ROAD
HULME HALL LANE
B5081 BYLEY LANE
MOSS LANE
KINGS LANE
B5081 MIDDLEWICH ROAD
M6
BYLEY LANE
MIDDLEWICH ROAD
BYLEY LANE
Holly House Farm
M6
Rudheath Woods
B5082 NORTHWICH ROAD
HOLE LANE
CHESHIRE EAST
KINGS LANE
WASH LANE
Allostock
PRINCESS ROAD
CHAPEL LANE
M6

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-307-R2

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Community Area MA02: Wimboldsley to Lostock Gralam

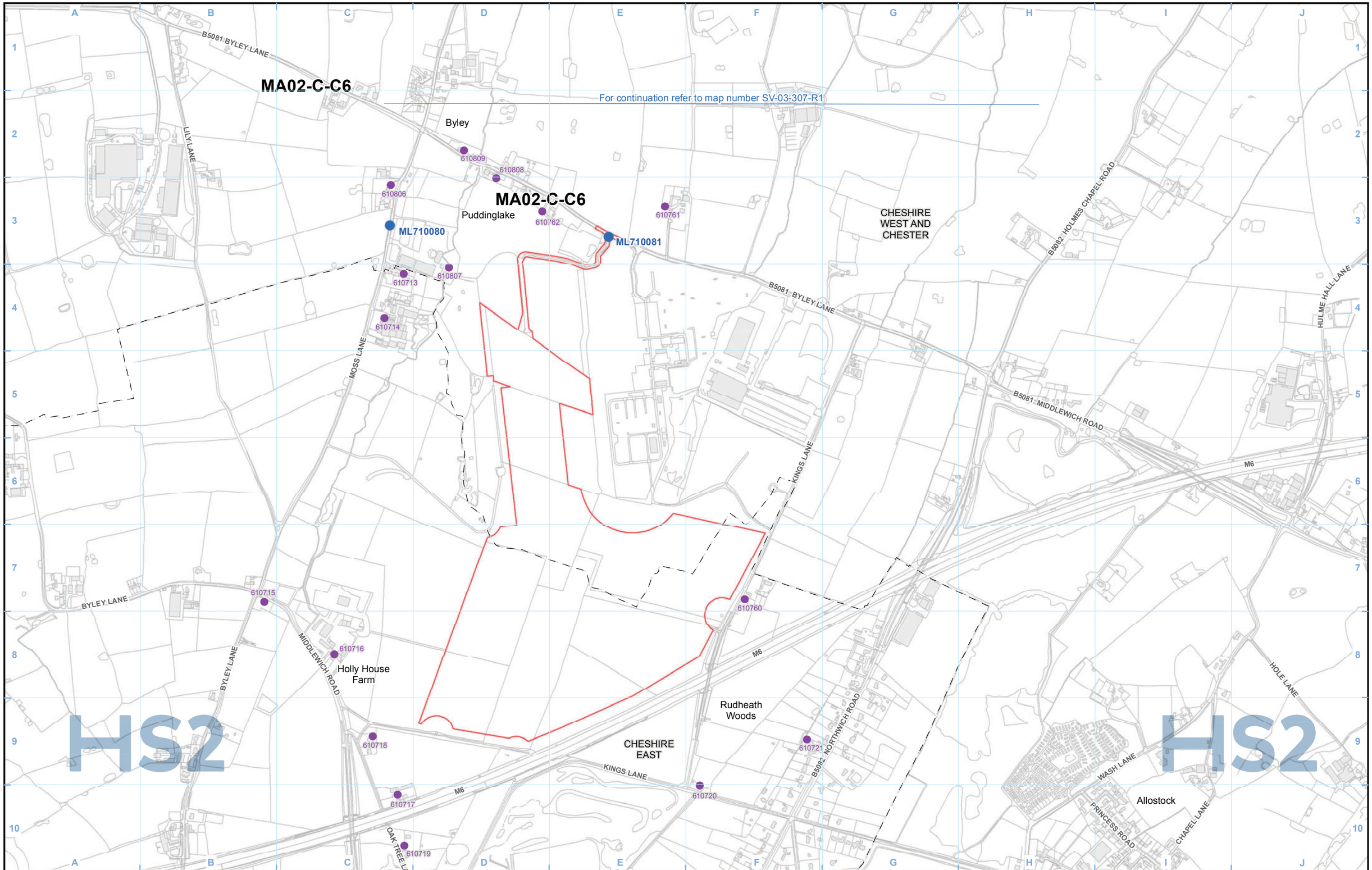
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002880-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

- Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA02) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA02-C-C# and MA02-C-N#, respectively.

Map Number: SV-03-307-R2

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA02: Wimboldsley to Lostock Gralam

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003703-P01

Date: 06/09/21

For SNV effects symbology please refer to SV-02 - Legend page

Rudheath
Higher Shurlach
Broken Cross
CHESHIRE WEST AND CHESTER
Springbank Farm
Wade Brook Viaduct
Lostock Gralam
High House Farm
Melvin Holme Farm
Lostock Green
Park Farm
Fieldhouse Farm
Lostock Gralam Viaduct
Heath Farm
Birches Farm
Ridge Farm
Langford Farm
Mosslane Farm

ML712500 ML712501 ML712502 ML712506 ML712507 ML712508 ML712509 ML712511 ML712512 ML712513 ML712515

MA02/262 MA02/342 MA02/347 MA02/277 MA02/269

MA02-O-C6

267+000 268+000 269+000 270+000

Up to 4m Up to 5m

For continuation refer to map number SV-02-307

For continuation refer to map number SV-02-309a

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-308

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

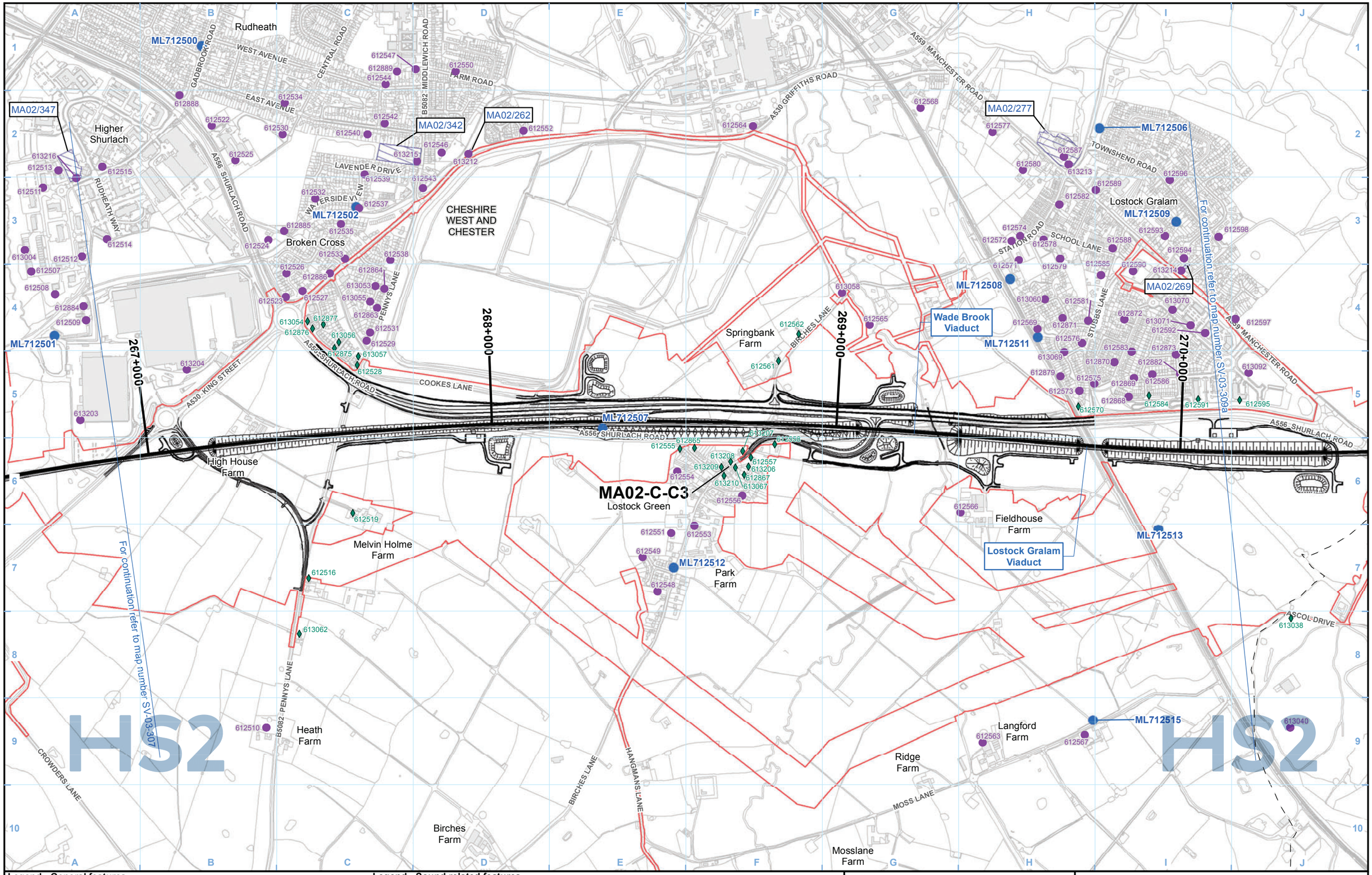
Community Area MA02: Wimboldsley to Lostock Gralam

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002009-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA02) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA02-C-C# and MA02-C-N#, respectively.

Map Number: SV-03-308

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA02: Wimboldsley to Lostock Gralam

HS2

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002056-P01

Date: 06/09/21

For SNV effects symbology please refer to SV-02 - Legend page

PICKMERE TO AGDEN AND HULSEHEATH

WIMBOLDSLEY TO LOSTOCK GRALAM

HS2

HS2

Higher Wincham
KEATS LANE
Pickmere
B5391 PICKMERE LANE
Frog Lane Farm
ML712601
FROG LANE
HALL LANE
MA02/277
ML712506
612587
613213
TOWNSHEND ROAD
612589
612582
612596
612588
SCHOOL LANE
612579
612593
Lostock Gralam
612598
ML712509
612594
612590
613214
612585
MA02/269
612871
612872
612581
613070
613071
612597
612576
612583
612573
612873
612592
612870
612882
612586
612869
612575
613092
612868
612584
612591
612595
270+000
271+000
272+000
273+000
Up to 4m
Up to 5m
Up to 3m
A556 SHURLACH ROAD
A559 MANCHESTER ROAD
CHESHIRE WEST AND CHESTER
Home Farm
ML712510
612607
Smoker Brook Viaduct
LINNARDS LANE
MILLEY LANE
612616
612625
612603
612619
612622
612623
612624
612626
612629
B5391 PICKMERE LANE
SCHOOL LANE
612618
Roses Farm
ML712605
612628
School Farm
ML712604
612613
Providence Farm
ML712811
ML712514
612612
612610
ML712513
612601
612874
612599
613073
612602
Holford Farm
A556 CHESTER ROAD
612604
Smoker Hill Farm
CHESHIRE EAST
612614
612621
612617
FLITTOGATE LANE
Flittogate Farm
Cheshire Showground
For continuation refer to map number SV-02-308
For continuation refer to map number SV-02-310
ASCOL DRIVE
MILL LANE
612600
612606
ML712516
PLUMLEY MOOR ROAD
612603
612611
A556 CHESTER ROAD

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-309a

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Community Area MA02: Wimboldsley to Lostock Gralam

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002010-P01

Date: 10/08/21

PICKMERE TO AGDEN AND HULSEHEATH

WIMBOLDSLEY TO LOSTOCK GRALAM

HS2

Higher Wincham
KEATS LANE
Pickmere
Frog Lane Farm
ML712601
FROG LANE
HALL LANE
B5391 PICKMERE LANE
612862
612615
612616
612625
MA02/277
ML712506
612587
613213
TOWNSHEND ROAD
612589
612582
612596
612588
SCHOOL LANE
612579
612585
612593
Lostock Gralam
612598
ML712509
612590
612594
613214
MA02/269
STUBBS LANE
612871
612581
612872
613070
613071
612576
612873
612583
612870
612882
612575
612869
612573
612586
612584
612868
612591
612595
612597
612592
613092
A59 MANCHESTER ROAD
270+000
A556 SHURLACH ROAD
ML712513
612601
612874
612599
For continuation refer to map number SV-03-308
ASCOL DRIVE
613038
613039
613040
MA02-C-N1
613041
612600
MILL LANE
CHESHIRE WEST AND CHESTER
613051
Home Farm
ML712510
612607
Smoker Brook Viaduct
LINNARDS LANE
271+000
ML712514
612602
613073
Holford Farm
A556 CHESTER ROAD
612604
612606
PLUMLEY MOOR ROAD
612603
ML712516
612610
Smoker Hill Farm
ML712603
612619
612622
612623
612624
612626
612629
B5391 PICKMERE LANE
MILLEY LANE
612618
Roses Farm
272+000
ML712604
612613
Providence Farm
612612
273+000
ML712605
612628
SCHOOL LANE
School Farm
ML712811
Flittogate Farm
Cheshire Showground
FLITTOGATE LANE
For continuation refer to map number SV-03-310
CHESHIRE EAST
612614
612621
612617
612611
A556 CHESTER ROAD

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks: Embankment; Cutting

Non engineering earthworks: Embankment; Cutting

Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA02) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA02-C-C# and MA02-C-N#, respectively.

Map Number: SV-03-309a

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA02: Wimboldsley to Lostock Gralam

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002057-P01

Date: 06/09/21

PICKMERE TO AGDEN AND HULSEHEATH

WIMBOLDSLEY TO LOSTOCK GRALAM

HOUGH TO WALLEY'S GREEN

SV-08-309a

SV-08-308

SV-08-307

SV-08-306

SV-08-305

SV-08-304b

Lostock Gralam Viaduct

Smoker Brook Viaduct

Wade Brook Viaduct

Gad Brook Viaduct

Trent And Mersey Canal Viaduct

Puddinglake Brook Viaduct

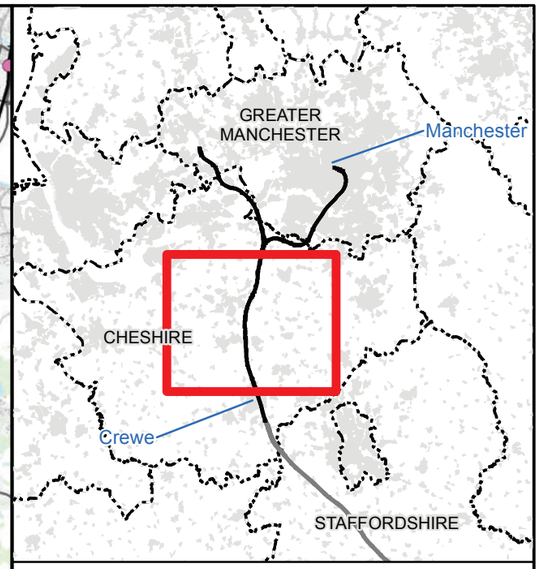
River Dane Viaduct

A54 Middlewich Road Viaduct

Shropshire Union Canal Viaduct

Crewe North Rolling Stock Depot

Runcorn East
RUNCORN
Lower Stretton
Mere
Over Tabley
Mobberley
Wilmslow
WILMSLOW
Knutsford
KNUTSFORD
Alderley Edge
Pickmere
Comberbach
Acton Bridge
Ollerton
Lostock Gralam
Plumley
Chelford
Kingsley
Weaverham
NORTHWICH
Northwich
Lower Peover
Over Peover
Greenbank
Norley
Cuddington
Hartford
Lach Dennis
Delamere
Moulton
Goostrey
Byley
Lower Withington
Whitegate
CHESHIRE WEST AND CHESTER
Holmes Chapel
MIDDLEWICH
CHESHIRE EAST
Swettenham
Over
WINSFORD
Winsford
Utkinton
Little Budworth
Hebden Green
Brereton Green
CHESHIRE
Eaton
Congleton
Tarporley
Wettenhall
Arclid
SANDBACH
Sandbach
Church Minshull
Warmingham
Walley's Green
Spen Green
Alpraham
Tiverton
Bunbury
Wheelock Heath
CREWE
Rode Heath



Map Series Information:

SV-08 presents the predicted daytime operational sound from the new railway.

The sound levels from the new railway (expressed as $_{LpAeq,T}$) are presented in typical noise mapping colours in 5 dB steps. There is a panel at the top right of the figure; this panel contains a key communicating the daytime sound levels represented by the various colours. A corresponding and similar panel is found on SV-02 and SV-09, along with the key sound contours that were used within the environmental assessment.

Also presented on SV-08 are the following (which are also included on SV-02):

- A representation of the Proposed Scheme, including the railway alignment (indicating whether it is on the surface or in tunnel), any new and altered roads and all associated engineering and environmental mitigation earthworks;
- blue and green lines representing the wayside airborne noise mitigation measures included in the Proposed Scheme;
- the extent of the study area within which the direct impacts and effects of the scheme have been quantitatively assessed.

A more detailed explanation of each legend item included on the figures can be found in the data dictionary.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-08-INDEX-MA02

Map Name: Index Map of: Daytime Operational Sound Contour Maps

Community Area MA02: Wimboldsley to Lostock Gralam

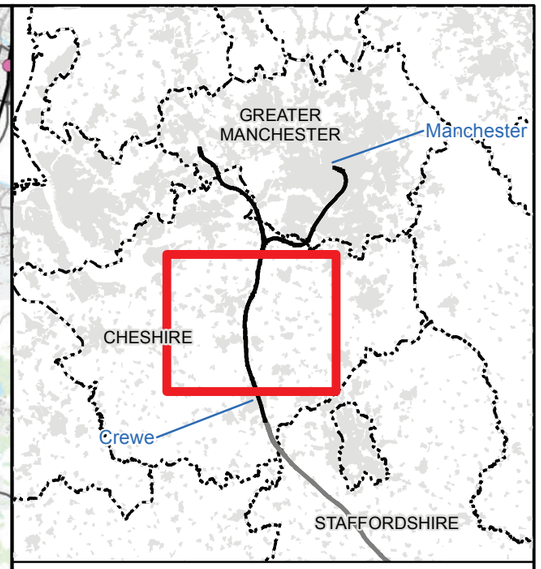
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:100,000

0 1,000 2,000 3,000 4,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003073-P01

Date: 06/09/21



Map Series Information:

SV-09 presents the predicted night-time operational sound from the new railway.

The sound levels from the new railway (expressed as $_{LpAeq,T}$) are presented in typical noise mapping colours in 5 dB steps. There is a panel at the top right of the figure; this panel contains a key communicating the night-time sound levels represented by the various colours. A corresponding and similar panel is found on SV-02 and SV-08, along with the key sound contours that were used within the environmental assessment.

Also presented on SV-09 are the following (which are also included on SV-02):

• A representation of the Proposed Scheme, including the railway alignment (indicating whether it is on the surface or in tunnel), any new and altered roads and all associated engineering and environmental mitigation earthworks;

• blue and green lines representing the wayside airborne noise mitigation measures included in the Proposed Scheme;

• the extent of the study area within which the direct impacts and effects of the scheme have been quantitatively assessed.

A more detailed explanation of each legend item included on the figures can be found in the data dictionary.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-09-INDEX-MA02

Map Name: Index Map of: Night-time Operational Sound Contour Maps

Community Area MA02: Wimboldsley to Lostock Gralam

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:100,000

0 1,000 2,000 3,000 4,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003114-P01

Date: 06/09/21

HS2 (rail only) sound level $L_{pAeq,T}$
Daytime $L_{pAeq,T}$ (T=07:00 to 23:00)
> 70 dB
65 to 70 dB
60 to 65 dB
55 to 60 dB
50 to 55 dB
< 50 dB

Brook House Farm
BROOKHOUSE LANE
Weaver Bank
CHESHIRE EAST
Walley's Green
Newfield Farm
CHESHIRE WEST AND CHESTER
A530 MIDDLEWICH ROAD
Moat House Farm
For continuation refer to map number SV-08-303
Wimboldsley Grange Farm
Lea Hall Farm
Newfield Hall Farm
Wimboldsley Hall Farm
256+000
257+000
258+000
Crewe North Rolling Stock Depot
Parkfield Farm
Up to 4m
Up to 4m
A530 Nantwich Road Overbridge
A530 NANTWICH ROAD
Park Hall Farm
Park House Farm
For continuation refer to map number SV-08-305
CHAPEL LANE
Wimboldsley
WIMBOLDSLEY TO LOSTOCK GRALAM
HOUGH TO WALLEY'S GREEN
SCHOOL LANE
Newfield Farm
Occlestone Green
FORGE MILL LANE
Manor Farm
Field's Farm

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-08-304b

Map Name: Daytime Operational Sound Contour Maps

Community Area MA02: Wimboldsley to Lostock Gralam

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003084-P01

Date: 10/08/21

HS2 (rail only) sound level $L_{pAeq,T}$
Night-time $L_{pAeq,T}$ (T=23:00 to 07:00)
> 60 dB
55 to 60 dB
50 to 55 dB
45 to 50 dB
40 to 45 dB
< 40 dB

Brook House Farm
BROOKHOUSE LANE
CHESHIRE EAST
Weaver Bank
Walley's Green
Newfield Farm
CHESHIRE WEST AND CHESTER
A530 MIDDLEWICH ROAD
Moat House Farm
For continuation refer to map number SV-09-303
Wimboldsley Grange Farm
Lea Hall Farm
Newfield Hall Farm
Wimboldsley Hall Farm
256+000
257+000
258+000
Crewe North Rolling Stock Depot
Parkfield Farm
Up to 4m
Up to 4m
A530 Nantwich Road Overbridge
A530 NANTWICH ROAD
Park Hall Farm
Park House Farm
For continuation refer to map number SV-09-305
Wimboldsley
CHAPEL LANE
WIMBOLDSLEY TO LOSTOCK GRALAM
HOUGH TO WALLEY'S GREEN
SCHOOL LANE
Newfield Farm
Occlestone Green
HS2
HS2
FORGE MILL LANE
Manor Farm
Field's Farm

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-09-304b

Map Name: Night-time Operational Sound Contour Maps

Community Area MA02: Wimboldsley to Lostock Gralam

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003125-P01

Date: 10/08/21

HS2 (rail only) sound level $L_{pAeq,T}$
Daytime $L_{pAeq,T}$ (T=07:00 to 23:00)
> 70 dB
65 to 70 dB
60 to 65 dB
55 to 60 dB
50 to 55 dB
< 50 dB

Mole House Farm
CLIVE BACK LANE
Clive Hall Farm
CLIVEGREEN LANE
ION PATH
ROAD THREE
Pear Tree Farm
Clive Farm
Clive Green
Lea Hall Farm
Clive
A54 MIDDLEWICH ROAD
A54 Middlewich Road Viaduct
Stanthorne Park Mews
Clive Green Lane Overbridge
CHESHIRE WEST AND CHESTER
Stanthorne Hall Farm
259+000
260+000
261+000
262+000
Crewe North Rolling Stock Depot
Park Farm
Bank Farm
Up to 4m
Up to 2m
Up to 3m
Up to 2m
Up to 2m
Up to 4m
For continuation refer to map number SV-08-304b
CLIVEGREEN LANE
Shropshire Union Canal Viaduct
Yew-Tree Farm
Greenheyes Farm
COAL PIT LANE
Lea House Farm
Stanthorne
A533 NORTHWICH ROAD
BOSTOCK ROAD
For continuation refer to map number SV-08-306
Wimboldsley
BIRCH LANE
COALPIT LANE
Newfield Farm
A530 NANTWICH ROAD
Mill Farm
Bostock House Farm
A54 CHESTER ROAD
Norcroft Farm
Field's Farm
CHESHIRE EAST
Manor Park
BRYNLO
Newtonia

HS2 HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks: Embankment, Cutting

Non engineering earthworks: Embankment, Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:

- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:

- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-08-305

Map Name: Daytime Operational Sound Contour Maps

Community Area MA02: Wimboldsley to Lostock Gralam

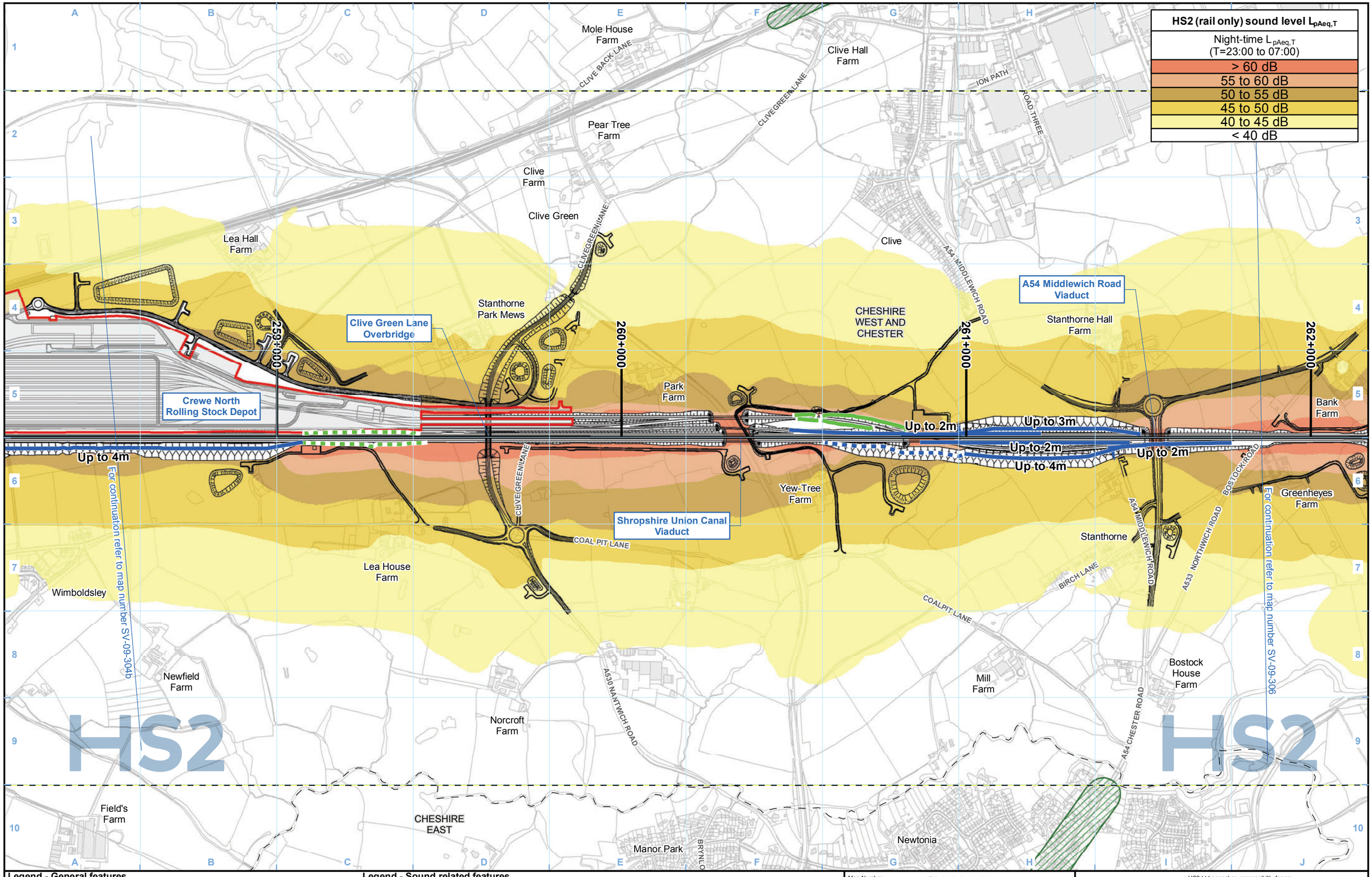
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003085-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-09-305

Map Name: Night-time Operational Sound Contour Maps

Community Area MA02: Wimboldsley to Lostock Gralam

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003126-P01

Date: 10/08/21

HS2 (rail only) sound level $L_{pAeq,T}$
Daytime $L_{pAeq,T}$ (T=07:00 to 23:00)
> 70 dB
65 to 70 dB
60 to 65 dB
55 to 60 dB
50 to 55 dB
< 50 dB

Clive Hall Farm
CLIVEGREEN LANE
ION PATH
ROAD THREE
ROAD FIVE
LONDON ROAD
Bostock Hall Farm
A333 BOSTOCK ROAD
Clive
A54 MIDDLEWICH ROAD
CHESHIRE WEST AND CHESTER
Stanthorne Hall Farm
A54 Middlewich Road Viaduct
261+000
262+000
263+000
264+000
River Dane Viaduct
Bank Farm
For continuation refer to map number SV-08-305
For continuation refer to map number SV-08-307
Up to 2m
Up to 3m
Up to 2m
Up to 2m
Up to 4m
Yew Tree Farm
BOSTOCK ROAD
Greenheyes Farm
A54 MIDDLEWICH ROAD
A533 NORTHWICH ROAD
BIRCH LANE
COALPIT LANE
Bostock House Farm
Mill Farm
A54 CHESTER ROAD
A530 CROXTON LANE
Newtonia
HS2
HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks: Embankment, Cutting

Non engineering earthworks: Embankment, Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:

- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:

- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-08-306

Map Name: Daytime Operational Sound Contour Maps

Community Area MA02: Wimboldsley to Lostock Gralam

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003086-P01

Date: 10/08/21

HS2 (rail only) sound level $L_{pAeq,T}$
Night-time $L_{pAeq,T}$ (T=23:00 to 07:00)
> 60 dB
55 to 60 dB
50 to 55 dB
45 to 50 dB
40 to 45 dB
< 40 dB

Clive Hall Farm
CLIVEGREEN LANE
ION PATH
ROAD THREE
ROAD FIVE
LONDON ROAD
Bostock Hall Farm
A333 BOSTOCK ROAD
For continuation refer to map number SV-09-305
For continuation refer to map number SV-09-307
Clive
A54 MIDDLEWICH ROAD
CHESHIRE WEST AND CHESTER
Stanthorne Hall Farm
A54 Middlewich Road Viaduct
River Dane Viaduct
261+000
262+000
263+000
264+000
Bank Farm
Up to 2m
Up to 3m
Up to 2m
Up to 2m
Up to 4m
Yew Tree Farm
BOSTOCK ROAD
Greenheyes Farm
A54 MIDDLEWICH ROAD
A533 NORTHWICH ROAD
BIRCH LANE
COALPIT LANE
Bostock House Farm
Mill Farm
A54 CHESTER ROAD
A530 CROXTON LANE
Newtonia
HS2
HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-09-306

Map Name: Night-time Operational Sound Contour Maps

Community Area MA02: Wimboldsley to Lostock Gralam

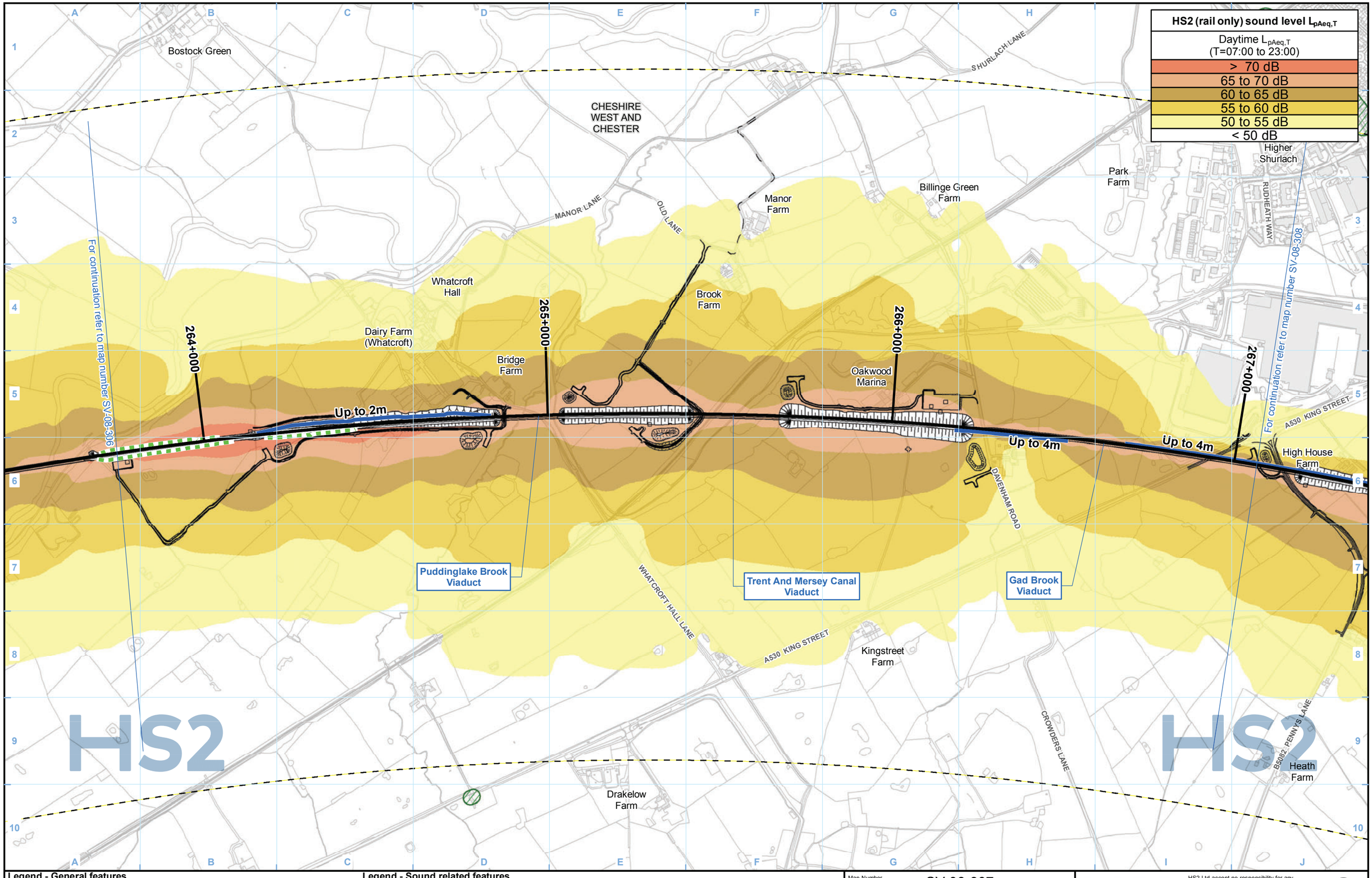
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003127-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-08-307

Map Name: Daytime Operational Sound Contour Maps

Community Area MA02: Wimboldsley to Lostock Gralam

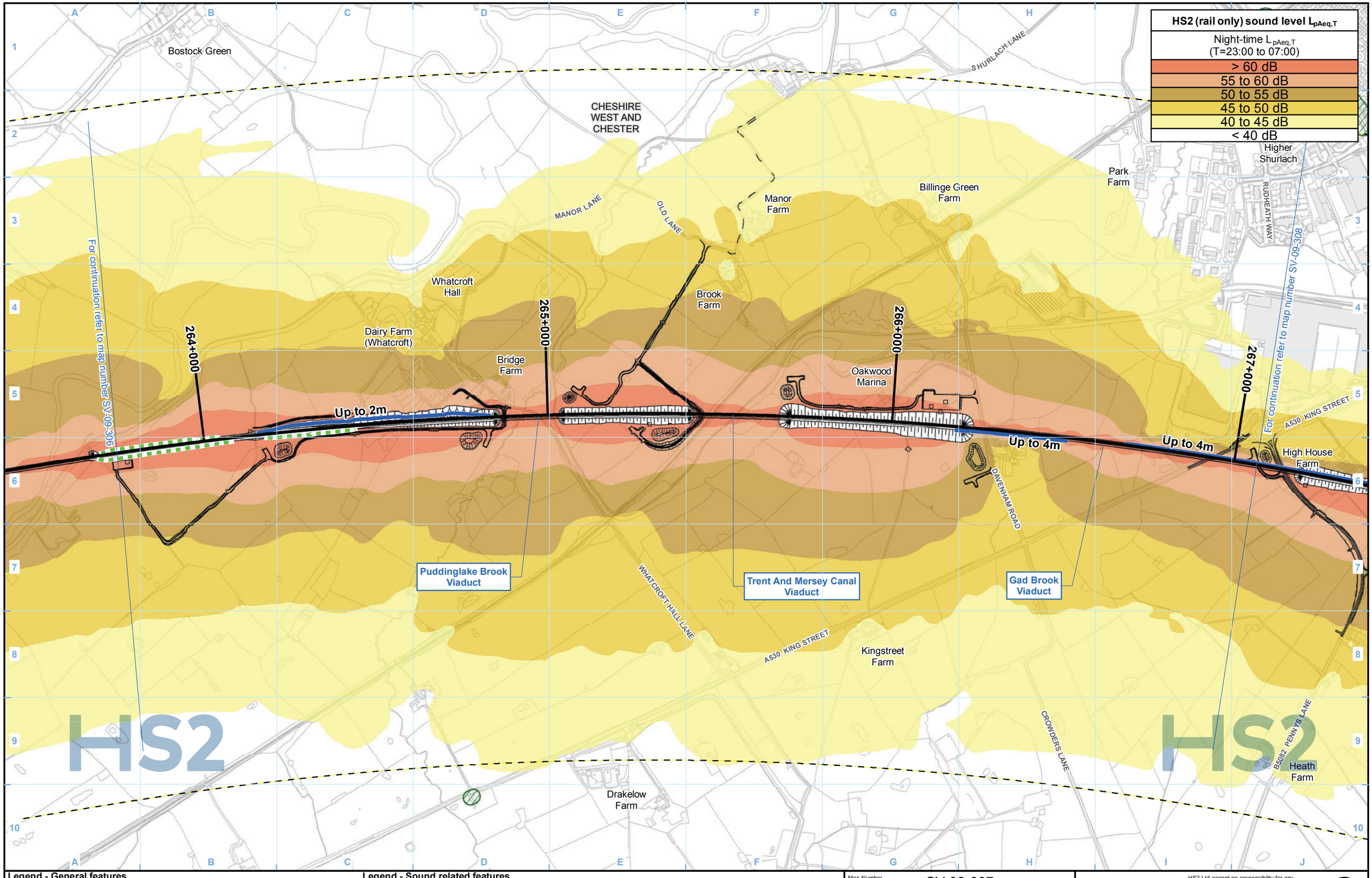
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003087-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-09-307

Map Name: Night-time Operational Sound Contour Maps

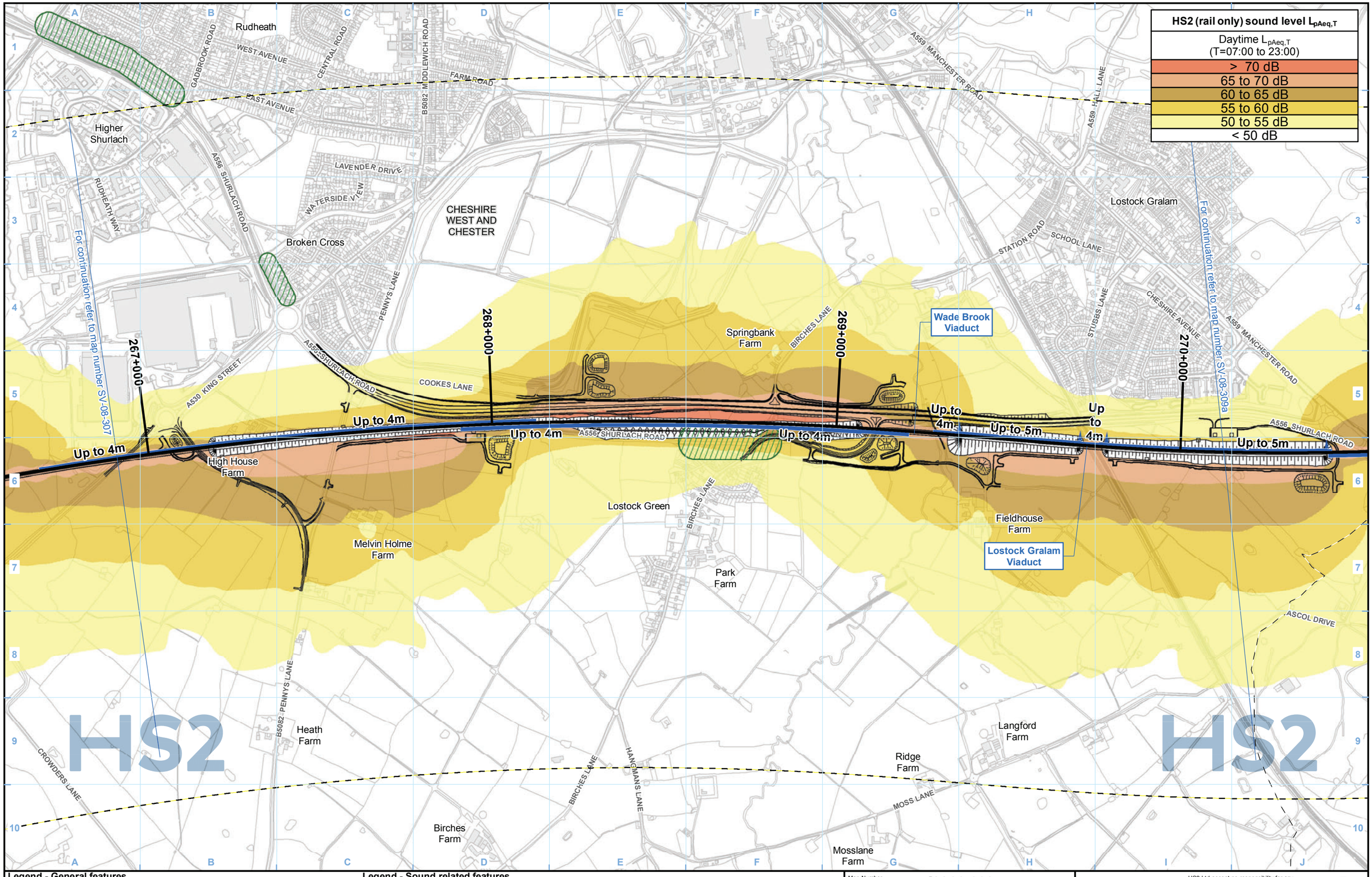
Community Area MA02: Wimboldsley to Lostock Gralam

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003128-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-08-308

Map Name: Daytime Operational Sound Contour Maps

Community Area MA02: Wimboldsley to Lostock Gralam

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003088-P01

Date: 10/08/21

HS2 (rail only) sound level $L_{pAeq,T}$

Night-time $L_{pAeq,T}$ (T=23:00 to 07:00)

- > 60 dB
- 55 to 60 dB
- 50 to 55 dB
- 45 to 50 dB
- 40 to 45 dB
- < 40 dB

Rudheath
Higher Shurlach
Broken Cross
CHESHIRE WEST AND CHESTER
Lostock Gralam
Springbank Farm
Wade Brook Viaduct
Lostock Gralam Viaduct
High House Farm
Melvin Holme Farm
Lostock Green
Park Farm
Fieldhouse Farm
Heath Farm
Birches Farm
Ridge Farm
Langford Farm
Mosslane Farm

GADBROOK ROAD, WEST AVENUE, CENTRAL ROAD, B5082 MIDDLEWICH ROAD, FARM ROAD, EAST AVENUE, A559 MANCHESTER ROAD, A559 HALL LANE, RUDHEATH WAY, A556 SHURLACH ROAD, LAVENDER DRIVE, WATERSIDE VIEW, PENNYS LANE, STATION ROAD, SCHOOL LANE, STUBBS LANE, CHESHIRE AVENUE, A530 KING STREET, COOKES LANE, BIRCHES LANE, CROWDERS LANE, HANGMANS LANE, MOSS LANE, ASCOL DRIVE

267+000, 268+000, 269+000, 270+000

Up to 4m
Up to 5m

For continuation refer to map number SV-09-307
For continuation refer to map number SV-09-309a

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-09-308

Map Name: Night-time Operational Sound Contour Maps

Community Area MA02: Wimboldsley to Lostock Gralam

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003129-P01

Date: 10/08/21

HS2 (rail only) sound level $L_{pAeq,T}$

Daytime $L_{pAeq,T}$ (T=07:00 to 23:00)

- > 70 dB
- 65 to 70 dB
- 60 to 65 dB
- 55 to 60 dB
- 50 to 55 dB
- < 50 dB

PICKMERE TO AGDEN AND HULSEHEATH

WIMBOLDSLEY TO LOSTOCK GRALAM

Higher Wincham
Pickmere
Home Farm
Lostock Gralam
CHESHIRE WEST AND CHESTER
CHESHIRE EAST
Smoker Brook Viaduct
Providence Farm
Roses Farm
School Farm
Flittogate Farm
Cheshire Showground
Holford Farm
Smoker Hill Farm

A559 HALL LANE
KEATS LANE
B5391 PICKMERE LANE
SCHOOL LANE
STUBBS LANE
CHESHIRE AVENUE
A559 MANCHESTER ROAD
LINNARDS LANE
MILLEY LANE
A556 SHURLACH ROAD
ASCOL DRIVE
A556 CHESTER ROAD
MILL LANE
PLUMLEY MOOR ROAD
FLITTOGATE LANE

270+000
271+000
272+000
273+000

Up to 4m
Up to 5m
Up to 3m

For continuation refer to map number SV-08-308
For continuation refer to map number SV-08-310

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-08-309a

Map Name: Daytime Operational Sound Contour Maps

Community Area MA02: Wimboldsley to Lostock Gralam

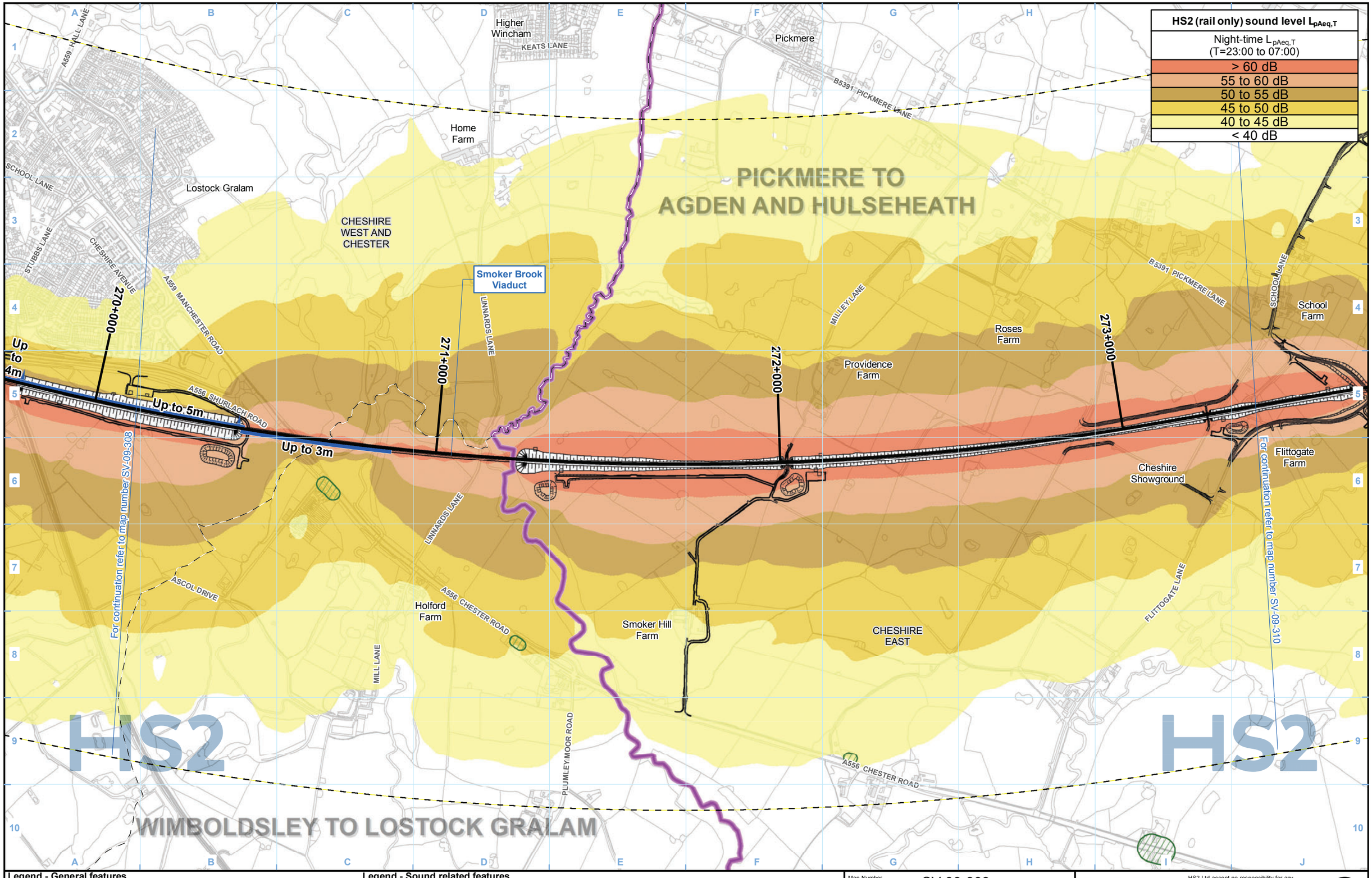
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003089-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-09-309a

Map Name: Night-time Operational Sound Contour Maps

Community Area MA02: Wimboldsley to Lostock Gralam

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003130-P01

Date: 10/08/21

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HS2

High Speed Rail (Crewe – Manchester) Environmental Statement

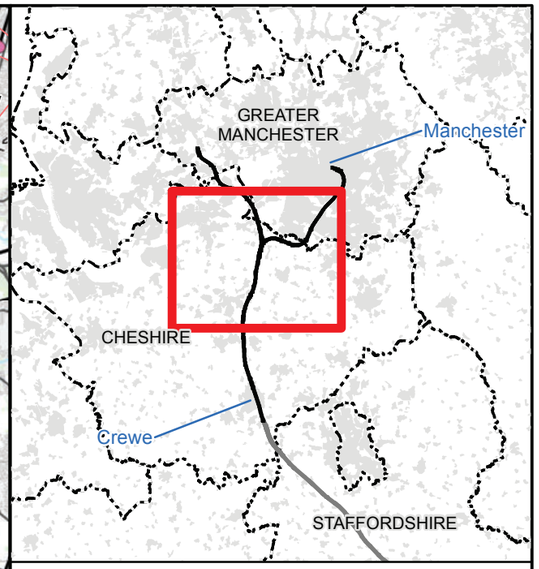
MA03: Pickmere to Agden and Hulseheath

SV-02 - Operational Noise and Vibration Impacts and Likely Significant Effects (with Assessment Location)

SV-03 - Assessment and Monitoring Locations for Construction Sound, Noise and Vibration Assessments

SV-08 - Daytime Operational Sound Contour Maps

SV-09 - Night-time Operational Sound Contour Maps



Map Series Information:

SV-02 presents the direct operational noise impacts and likely significant effects of the Proposed Scheme.

The SV-02 figure series necessarily contains a large amount of information relating to the operational noise and vibration assessment. It is designed to communicate visually the assessment process from the prediction of impacts to the determination of likely residual significant effects. The corresponding text is included in Vol2 and Vol5.

Key items on the map include the following:

- The Proposed Scheme (the proposed railway alignments and surrounding associated earthworks/roads);
- blue and green lines representing the wayside airborne noise mitigation measures included in the Proposed Scheme;
- the study areas, which indicate the areas within which direct sound and vibration impacts of the scheme have been quantitatively assessed;
- the calculated direct operational impacts of the scheme, displayed as colour-coded buildings and symbols representing buildings that would potentially qualify for noise insulation;
- sound contours representing sound produced by the new railway (displayed in a simpler manner than on SV-08 and SV-09 in order not to obscure the features on the map series);
- the assessment locations at which a quantitative prediction of sound and impacts have been carried out (representing a number of nearby buildings). These are labelled with a unique reference number to enable cross-reference to further detail regarding the assessments in Volume 5: Appendix SV-003-0MA0X; and
- labels indicating where the likely residual direct noise or vibration significant effects have been identified. These are labelled with a unique reference number to enable cross-reference to further detail regarding the assessments in Volume 5: Appendix SV-003-0MA0X.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

A more detailed explanation of each legend item included on the figures and on the separate legend page can be found in the data dictionary.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-02-INDEX-MA03

Map Name: Index Map of: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

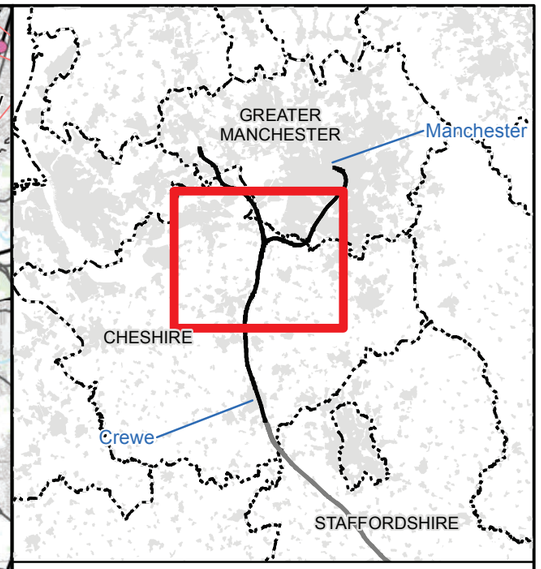
Community Area MA03: Pickmere to Agden and Hulseheath

Scale at A3: 1:100,000

0 1,000 2,000 3,000 4,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002039-P01

Date: 10/08/21



Map Series Information:

The SV-03 figure series accompanies the construction noise & vibration assessments. It shows the locations at which a quantitative assessment of the direct effects of construction noise and/or vibration has been carried out. These are labelled as assessment locations with a reference number to enable cross-reference to the construction noise and vibration reports contained in Volume 5: Appendix SV-002-0MA03.

The figure series also shows locations at which baseline sound measurements were carried out.
These baseline measurement locations are labelled with a reference number to enable cross-reference to the baseline sound reports contained in Volume 5: Appendix SV-002-0MA03.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

A more detailed explanation of each legend item included on the figures can be found in the data dictionary.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-03-INDEX-MA03

Map Name: Index Map of: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA03: Pickmere to Agden and Hulseheath

Scale at A3: 1:100,000

0 1,000 2,000 3,000 4,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002085-P01

Date: 06/09/21

HS2 (rail only) noise level $L_{pAeq,T}$		Potential noise effect[1, 2]	
Night-time $L_{pAeq,T}$ (T=23:00 to 07:00)	Daytime $L_{pAeq,T}$ (T=07:00 to 23:00)	**Residential**	**Non-residential & quiet areas**
> 55 dB	> 65 dB	Likely significant effect on dwellings indicated by ◯, ✳ or ✕ avoided by noise insulation	Effect dependent on receptor and baseline. For further details see Volume 5, Appendix SV-003-0MA0X. Likely significant effect indicated by MA0X-O-N#[2]
40 to 55 dB	50 to 65 dB	Effect dependent on noise level change and significance criteria. Likely significant effects on groups of dwellings and any shared community open areas indicated by MA0X-O-C#[2]	
< 40 dB	< 50 dB	Generally no adverse effect expected[1]	

Operational airborne noise impacts at residential buildings[1]

- Major adverse
- Moderate adverse
- Minor adverse
- Negligible
- Beneficial

- ◯ Potential additional noise insulation (triggered by maximum noise levels at night)[1]
- ✳ Potential additional noise insulation (triggered by WHO Night Noise Guidelines Interim Target)[1]
- ✕ Potential noise insulation (triggered by Noise Insulation Regulations 1996)[1]
- ◯ L_{pAFmax} exceeds 60dB façade HS2 train only L_{pAFmax} +2.5dB façade correction

▭ Ground-borne noise or vibration impact at residential buildings

[1] For further information see Volume 5 Appendix SV-001-00000
[2] For details see relevant Volume 5 Appendix SV-003-0MA0X

SV-02 - Legend

Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Doc Number: -

Date:

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For SNV effects symbology please refer to SV-02 - Legend page

PICKMERE TO AGDEN AND HULSEHEATH

WIMBOLDSLEY TO LOSTOCK GRALAM

Higher Wincham
KEATS LANE
Pickmere
B5391 PICKMERE LANE
Frog Lane Farm
ML712601
FROG LANE
HALL LANE
MA02/277
ML712506
TOWNSHEND ROAD
612587
613213
612589
612582
612596
612588
SCHOOL LANE
612579
612593
Lostock Gralam
612598
ML712509
612594
612590
613214
612585
MA02/269
612871
612872
613070
613071
612597
612576
612583
612573
612873
612592
612870
612882
612586
612869
612575
612868
612584
612591
613092
612595
270+000
271+000
272+000
273+000
Up to 4m
Up to 5m
Up to 3m
A556 SHURLACH ROAD
A559 MANCHESTER ROAD
CHESHIRE WEST AND CHESTER
Smoker Brook Viaduct
LINNARDS LANE
Home Farm
ML712510
612607
612616
612625
612624
612623
612622
612626
612619
ML712603
B5391 PICKMERE LANE
MILLEY LANE
612618
Roses Farm
ML712604
Providence Farm
612613
612612
612610
ML712605
612628
School Farm
SCHOOL LANE
612629
ML712811
ML712514
ML712513
612601
612874
612599
LINNARDS LANE
ASCOL DRIVE
613073
612602
Holford Farm
A556 CHESTER ROAD
612604
Smoker Hill Farm
MILL LANE
612600
612606
ML712516
PLUMLEY MOOR ROAD
612603
CHESHIRE EAST
612614
612621
612617
612611
A556 CHESTER ROAD
Flittogate Farm
FLITTOGATE LANE
Cheshire Showground
For continuation refer to map number SV-02-308
For continuation refer to map number SV-02-310

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-309b

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Community Area MA03: Pickmere to Agden and Hulseheath

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002011-P01

Date: 10/08/21

PICKMERE TO AGDEN AND HULSEHEATH

WIMBOLDSLEY TO LOSTOCK GRALAM

HS2

Higher Wincham
KEATS LANE
Pickmere
Frog Lane Farm
ML712601
FROG LANE
HALL LANE
B5391 PICKMERE LANE
612862
612615
612616
612625
MA02/277
ML712506
612587
613213
TOWNSHEND ROAD
612589
612582
612596
612588
SCHOOL LANE
612579
612585
612593
Lostock Gralam
612598
ML712509
612590
612594
613214
MA02/269
STUBBS LANE
612871
612581
612872
613070
613071
612873
612583
612576
612870
612882
612575
612869
612573
612586
612584
612868
612591
612595
612597
612592
613092
A59 MANCHESTER ROAD
270+000
A556 SHURLACH ROAD
ML712513
612601
612874
612599
For continuation refer to map number SV-03-308
ASCOL DRIVE
613038
613039
613040
612600
MA02-C-N1
613041
MILL LANE
CHESHIRE WEST AND CHESTER
613051
Home Farm
ML712510
612607
Smoker Brook Viaduct
LINNARDS LANE
271+000
ML712514
612602
613073
Holford Farm
A556 CHESTER ROAD
612604
ML712516
612606
PLUMLEY MOOR ROAD
612603
612610
Smoker Hill Farm
MILLEY LANE
ML712603
612619
612622
612623
612624
612626
612629
B5391 PICKMERE LANE
612618
Roses Farm
272+000
ML712604
612613
Providence Farm
612612
273+000
ML712605
612628
SCHOOL LANE
School Farm
ML712811
Flittogate Farm
Cheshire Showground
FLITTOGATE LANE
For continuation refer to map number SV-03-310
CHESHIRE EAST
612614
612621
612617
612611
A556 CHESTER ROAD

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks: Embankment; Cutting

Non engineering earthworks: Embankment; Cutting

Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA03) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA03-C-C# and MA03-C-N#, respectively.

Map Number: SV-03-309b

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA03: Pickmere to Agden and Hulseheath

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002058-P01

Date: 06/09/21

For SNV effects symbology please refer to SV-02 - Legend page

ML712600
ML712601
ML712602
Frog Lane Farm
HALL LANE
FROG LANE
FELDY EEN LANE
M6
612625
612624
612626
612632
612629
612628
612643
612661
612658
WINTERBOTTOM LANE
B5391 PICKMERE LANE
SCHOOL LANE
BUDWORTH ROAD
ML712605
School Farm
ML712811
274+000
275+000
276+000
M6 Mere Viaduct
MA03-O-N2
Heyrose Farm
612645
Hollowood Farm
612654
612657
613005
612656
Winterbottom Farm
MA03-O-C3
WINTERBOTTOM LANE
Windmill Nurseries
612681
612638
612633
MA03-O-C2
MA03-O-N1
Flittogate Farm
612653
612647
612861
612639
Arley Brook Viaduct
HOLLOWOOD LANE
MA03-O-C1
612646
613075
612635
OLD HALL LANE
Bentleyhurst Farm
612655
CHESHIRE EAST
612649
612640
ML712610
A556
BENTLEYHURST LANE
612659
612652
61266
Hollybush Farm
For continuation refer to map number SV-02-309b
For continuation refer to map number SV-02-311

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-310

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

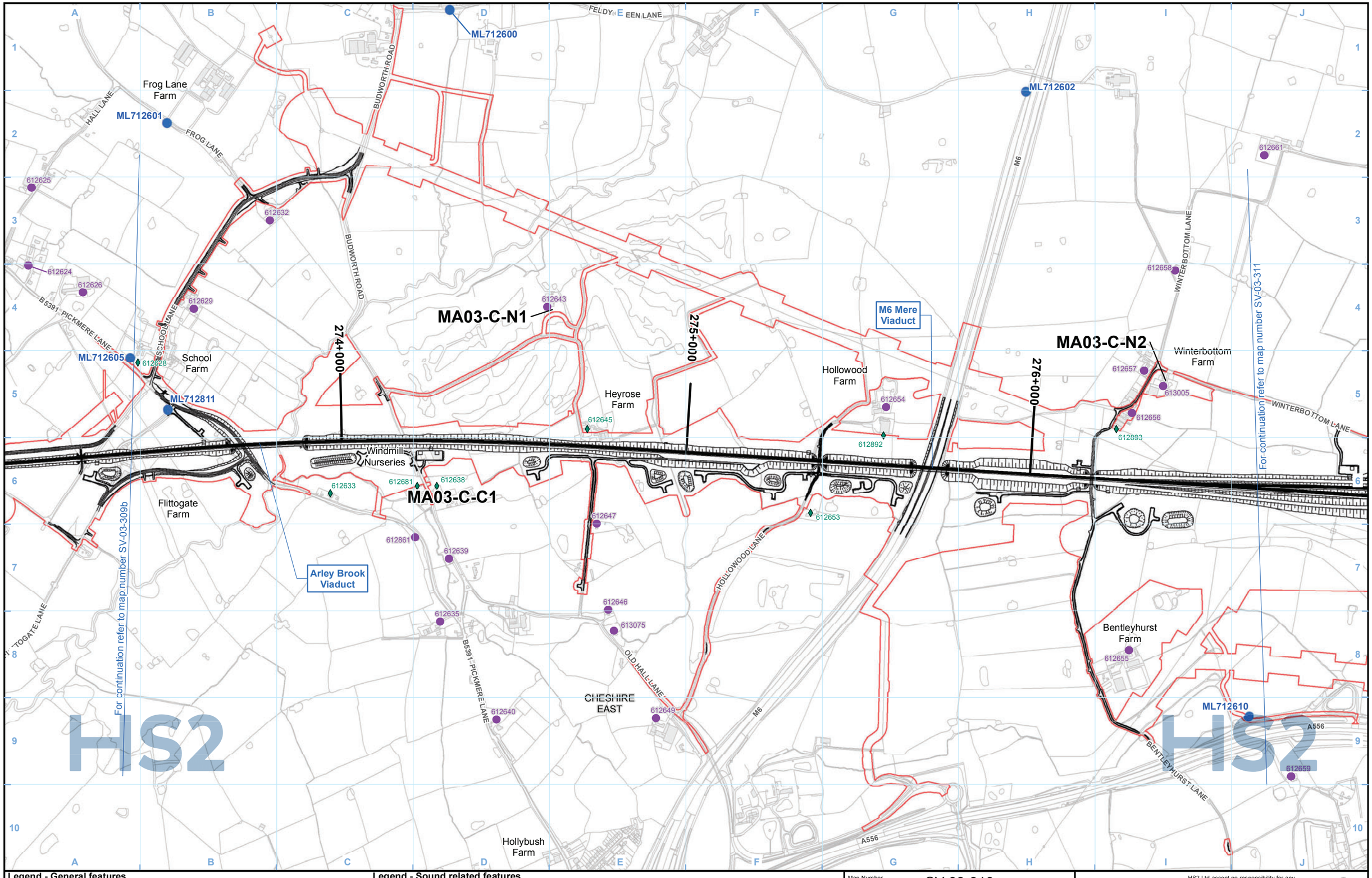
Community Area MA03: Pickmere to Agden and Hulseheath

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002012-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

- Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA03) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA03-C-C# and MA03-C-N#, respectively.

Map Number: SV-03-310

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA03: Pickmere to Agden and Hulseheath

Registered in England. Registration number 06791686. Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002059-P01

Date: 06/09/21

For SNV effects symbology please refer to SV-02 - Legend page

PICKMERE TO AGDEN AND HULSEHEATH

CHESHIRE EAST

ML712602
612661
MERE HEYES LANE
Rowleybank Farm
DITCHFIELD LANE
LITTLE ROWLEY LANE
M6
612658
WINTERBOTTOM LANE
For continuation refer to map number SV-02-310
Winterbottom Farm
612657
613005
MA03-O-C3
612656
276+000
WINTERBOTTOM LANE
277+000
ML712609
612662
Daisybank Farm
Hoo Green Box Structure
HOO GREEN LANE
278+000
A50 Overbridge
613074
612682
Yew Tree Farm
612674
MA03-O-N3
Wrenshot House
612687
HS2 WCML Connection
ML712806
612677
279+000
612692
612698
Woodside Farm
ML712607
612694
612704
ML712606
612671
Park Farm
High Legh
CANDELA N WAY
A50 WARRINGTON ROAD
WRENSHOT LANE
ML712608
BROADOAK LANE
ML712805
Broad Oak Farm
612757
Moss Farm
612747
PEACOCK LANE
Little Moss Farm
612745
For continuation refer to map number SV-02-312a
612736
Peacock Lane Viaduct
MA03-O-C4
612751
612752
ML712700
612712
Gorse Cottage Farm
HS2 Manchester Spur
612730
Moss House Farm
ML712611
612706
MA03-O-C4
612700
Millington Clough Underbridge
HULSE HEATH LANE
612720
ML712701
612754
Bowden View Farm
BOWDEN VIEW LANE
612670
612663
612665
HOO GREEN LANE
613050
612664
613052
Hoo Green
A50 WARRINGTON ROAD
BUCKLOW HILL LANE
612669
Hulme Barns Farm
Bentleyhurst Farm
612655
BENTLEY HURST LANE
A556
ML712610
612659
612660
ML712613
A556
For continuation refer to map number SV-02-311-R1

HS2 HULSEHEATH TO MANCHESTER AIRPORT

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-311

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Community Area MA03: Pickmere to Agden and Hulseheath

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002013-P01

Date: 10/08/21

PICKMERE TO AGDEN AND HULSEHEATH

CHESHIRE EAST

ML712602
612661
MERE HEYES LANE
Rowleybank Farm
DITCHFIELD LANE
LITTLE ROWLEY LANE
Park Farm
ML712606
612671
ML712607
612694
CANDELA N WAY
High Legh
WRENSHOT LANE
612704
ML712805
BROADOAK LANE
Broad Oak Farm
612658
WINTERBOTTOM LANE
For continuation refer to map number SV-03-310
MA03-C-N2
Winterbottom Farm
612657
613005
612656
612893
276+000
277+000
WINTERBOTTOM LANE
Hoo Green Box Structure
HOO GREEN LANE
Daisybank Farm
ML712609
612662
A50 Overbridge
278+000
613074
612682
Yew Tree Farm
612674
A50 WARRINGTON ROAD
ML712608
WRENSHOT LANE
612757
612698
Woodside Farm
612692
Moss Farm
612747
For continuation refer to map number SV-03-312a
PEACOCK LANE
Little Moss Farm
612745
279+000
Wrenshot House
612687
HS2 WCML Connection
ML712806
612677
MA03-C-N3
Bowden View Farm
612736
Peacock Lane Viaduct
HOO GREEN LANE
612663
613050
612665
612670
BOWDEN VIEW LANE
MA03-C-C2
612751
612752
ML712700
612730
Moss House Farm
HS2 Manchester Spur
Gorse Cottage Farm
612712
ML712611
612706
Bentleyhurst Farm
612655
Hoo Green
613052
612664
BUCKLOW HILL LANE
MA03-C-C2
612700
ML712610
A556
BENTLEY HURST LANE
612659
Hulme Barns Farm
612669
HULSE HEATH LANE
Millington Clough Underbridge
ML712613
A556
A50 WARRINGTON ROAD
For continuation refer to map number SV-03-311-R1
612720
ML712701
HULSEHEATH TO MANCHESTER AIRPORT

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

- Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA03) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA03-C-C# and MA03-C-N#, respectively.

Map Number: SV-03-311

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA03: Pickmere to Agden and Hulseheath

Registered in England. Registration number 06791686. Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002060-P01

Date: 06/09/21

For SNV effects symbology please refer to SV-02 - Legend page

For continuation refer to map number SV-02-311

ML712610

ML712613

ML712701

612659

612660

612669

612700

612688

612707

612720

612754

612727

612722

A556

A50 WARRINGTON ROAD

BENTLEY HURST LANE

BUCKLOW HILL LANE

HULSE HEATH LANE

B5569 CHESTER ROAD

Mere

Bucklow Hill

Little Mere

Denfield Hall Farm

MOSS LANE

CLAMHUNGER LANE

A5034 MERESIDE ROAD

ASHLEY ROAD

A50 MANCHESTER ROAD

NEW ROAD

ROSTHERNE LANE

CHESHIRE EAST

Tatton Dale

Rostherne

PICKMERE TO AGDEN AND HULSEHEATH

HULSEHEATH TO MANCHESTER AIRPORT

HS2

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-311-R1

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Community Area MA03: Pickmere to Agden and Hulseheath

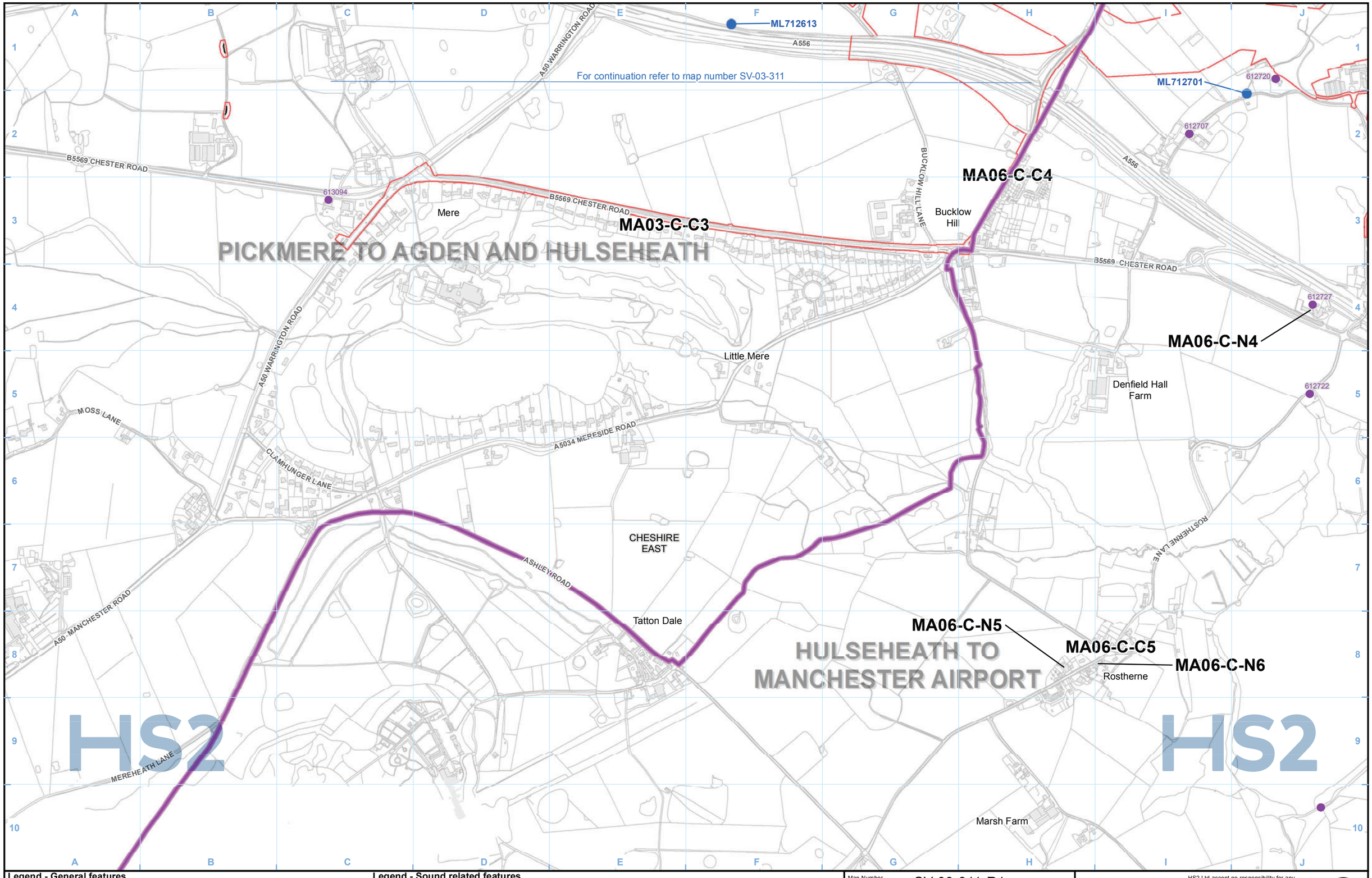
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003959-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

- Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA03) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA03-C-C# and MA03-C-N#, respectively.

Map Number: SV-03-311-R1

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA03: Pickmere to Agden and Hulseheath

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002895-P01

Date: 06/09/21

For SNV effects symbology please refer to SV-02 - Legend page

BROOMEDGE TO GLAZEBROOK

PICKMERE TO AGDEN AND HULSEHEATH

HULSEHEATH TO MANCHESTER AIRPORT

HS2

Abbey Leys Farm
Broomedge
Broad Oak Farm
Woodside Farm
Moss Farm
CHESHIRE EAST
WARRINGTON BOROUGH
Spring Farm
Agden Hall
Scandia House
Little Moss Farm
Moss House Farm
Middle Moss Farm
Agden Lane Farm
Agden Bridge Farm
Gorse Cottage Farm
Ivy House Farm
Booth Bank Farm
Agden Brook Farm
Woolstencroft Farm

Peacock Lane Overbridge
A56 Lymm Road Viaduct
Bridgewater Canal Viaduct
Manchester to Liverpool Junction Overbridge
HS2 Manchester Spur
Agden Brook Viaduct
Millington Lane Overbridge

MA03/050
MA03-O-C4
MA04-O-C1
MA04-O-C1

ML712607
ML712608
ML712805
ML712727
ML712752
ML712807
ML712700
ML712611
ML712612
ML712701

Up to 2m
Up to 2m
Up to 3m

279+000
280+000
281+000
282+000
283+000

BROADOAK LANE
WRENSHOT LANE
AGDEN PARK LANE
B5159 BURFORD LANE
STAGE LANE
BRADSHAW LANE
FROGHALL LANE
PEACOCK LANE
MOSS LANE
AGDEN LANE
A56 LYMM ROAD
WARRINGTON LANE
SPRING LANE
THOWLER LANE
BOOTHBANK LANE
REDDY LANE
M56

For continuation refer to map number SV-02-311
For continuation refer to map number SV-02-313
For continuation refer to map number SV-02-319

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-312a

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

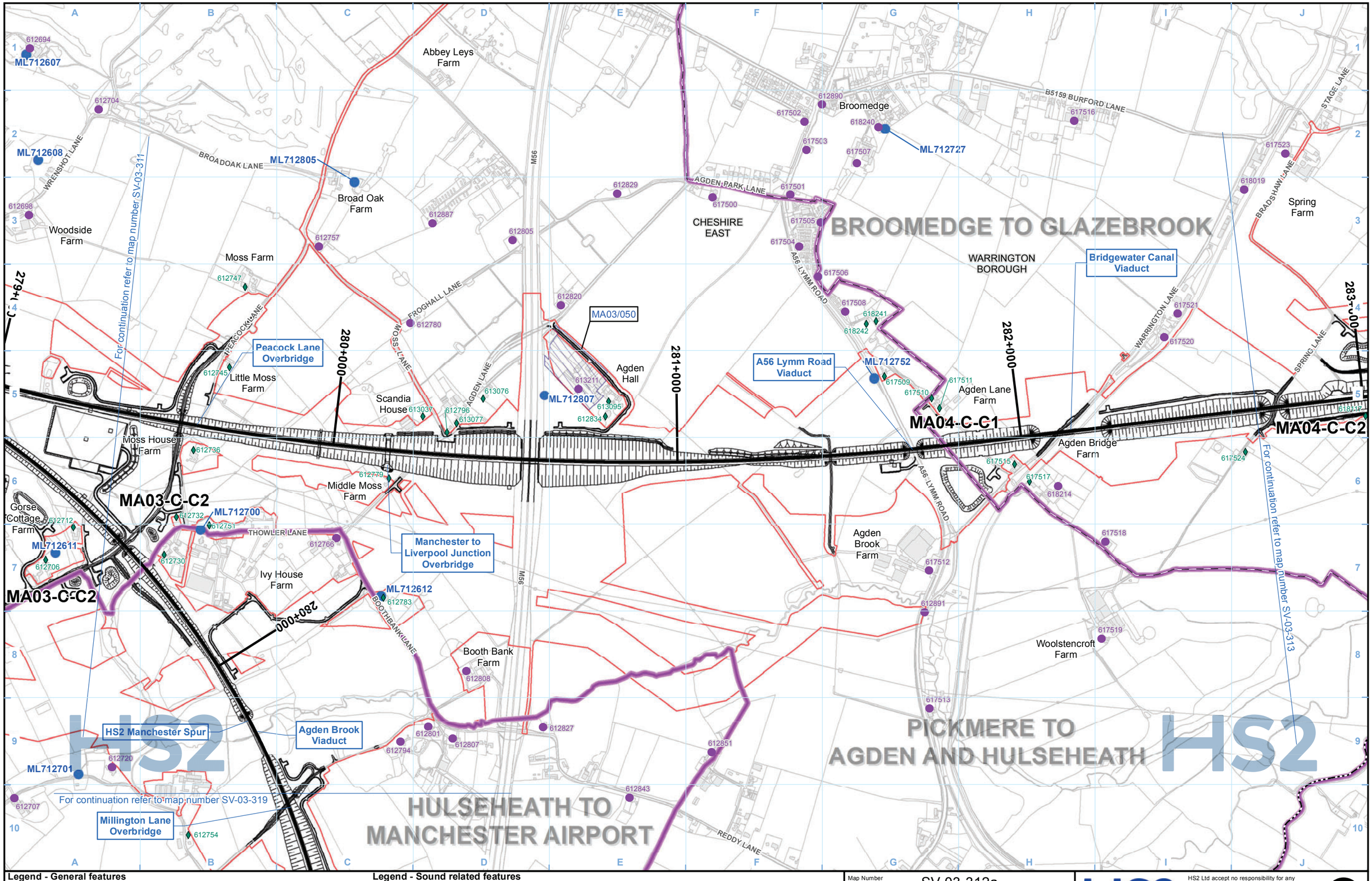
Community Area MA03: Pickmere to Agden and Hulseheath

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002014-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks: Embankment, Cutting

Non engineering earthworks: Embankment, Cutting

Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA03) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA03-C-C# and MA03-C-N#, respectively.

Map Number: SV-03-312a

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

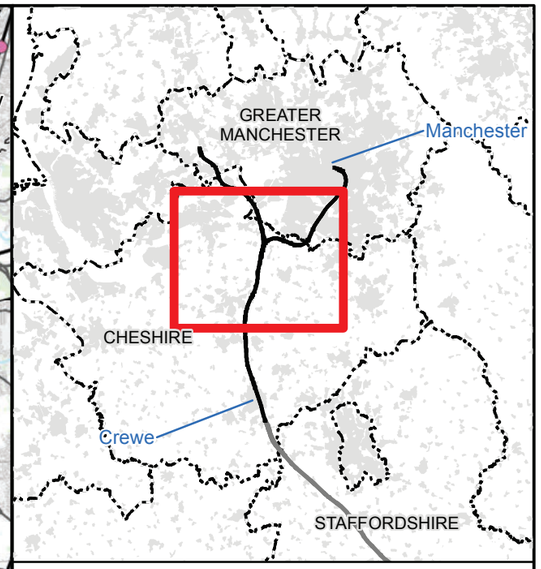
Community Area MA03: Pickmere to Agden and Hulseheath

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002061-P01

Date: 06/09/21



Map Series Information:

SV-08 presents the predicted daytime operational sound from the new railway.

The sound levels from the new railway (expressed as $_{LpAeq,T}$) are presented in typical noise mapping colours in 5 dB steps. There is a panel at the top right of the figure; this panel contains a key communicating the daytime sound levels represented by the various colours. A corresponding and similar panel is found on SV-02 and SV-09, along with the key sound contours that were used within the environmental assessment.

Also presented on SV-08 are the following (which are also included on SV-02):

- A representation of the Proposed Scheme, including the railway alignment (indicating whether it is on the surface or in tunnel), any new and altered roads and all associated engineering and environmental mitigation earthworks;
- blue and green lines representing the wayside airborne noise mitigation measures included in the Proposed Scheme;
- the extent of the study area within which the direct impacts and effects of the scheme have been quantitatively assessed.

A more detailed explanation of each legend item included on the figures can be found in the data dictionary.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-08-INDEX-MA03

Map Name: Index Map of: Daytime Operational Sound Contour Maps

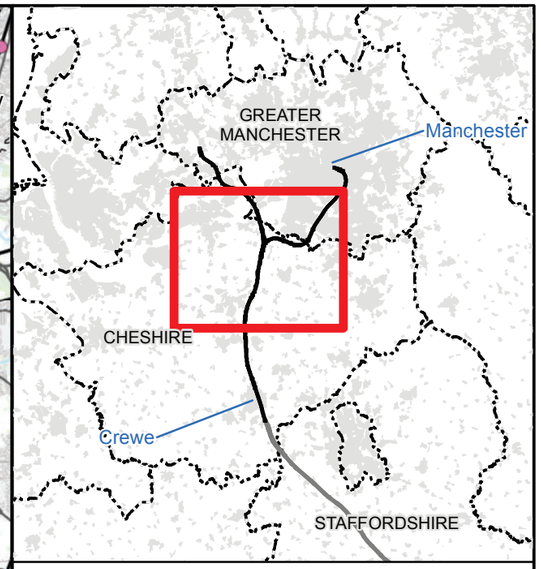
Community Area MA03: Pickmere to Agden and Hulseheath

Scale at A3: 1:100,000

0 1,000 2,000 3,000 4,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003074-P01

Date: 06/09/21



Map Series Information:

SV-09 presents the predicted night-time operational sound from the new railway.

The sound levels from the new railway (expressed as $_{LpAeq,T}$) are presented in typical noise mapping colours in 5 dB steps. There is a panel at the top right of the figure; this panel contains a key communicating the night-time sound levels represented by the various colours. A corresponding and similar panel is found on SV-02 and SV-08, along with the key sound contours that were used within the environmental assessment.

Also presented on SV-09 are the following (which are also included on SV-02):

- A representation of the Proposed Scheme, including the railway alignment (indicating whether it is on the surface or in tunnel), any new and altered roads and all associated engineering and environmental mitigation earthworks;
- blue and green lines representing the wayside airborne noise mitigation measures included in the Proposed Scheme;
- the extent of the study area within which the direct impacts and effects of the scheme have been quantitatively assessed.

A more detailed explanation of each legend item included on the figures can be found in the data dictionary.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-09-INDEX-MA03

Map Name: Index Map of: Night-time Operational Sound Contour Maps

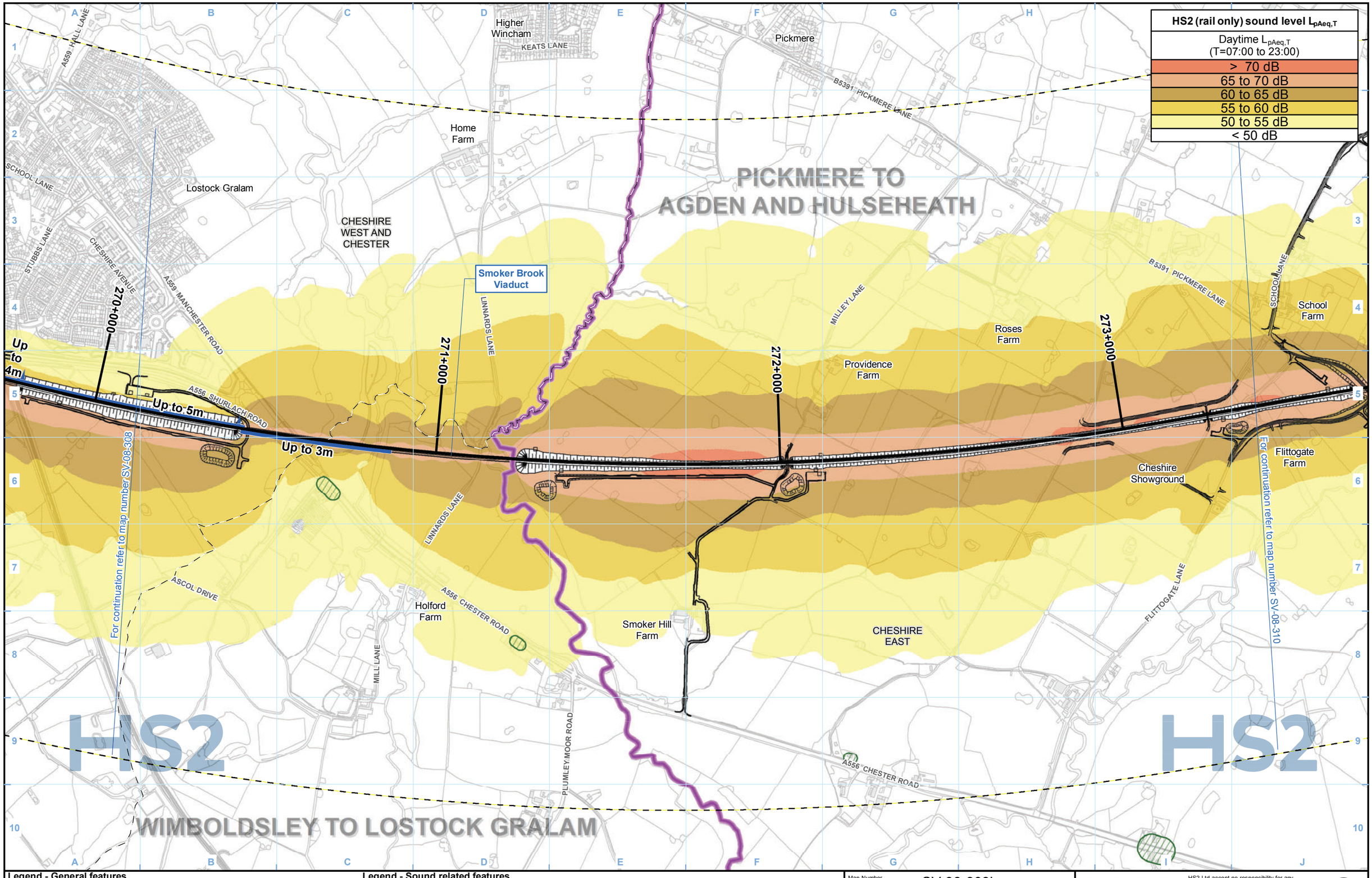
Community Area MA03: Pickmere to Agden and Hulseheath

Scale at A3: 1:100,000

0 1,000 2,000 3,000 4,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003115-P01

Date: 06/09/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-08-309b

Map Name: Daytime Operational Sound Contour Maps

Community Area MA03: Pickmere to Agden and Hulseheath

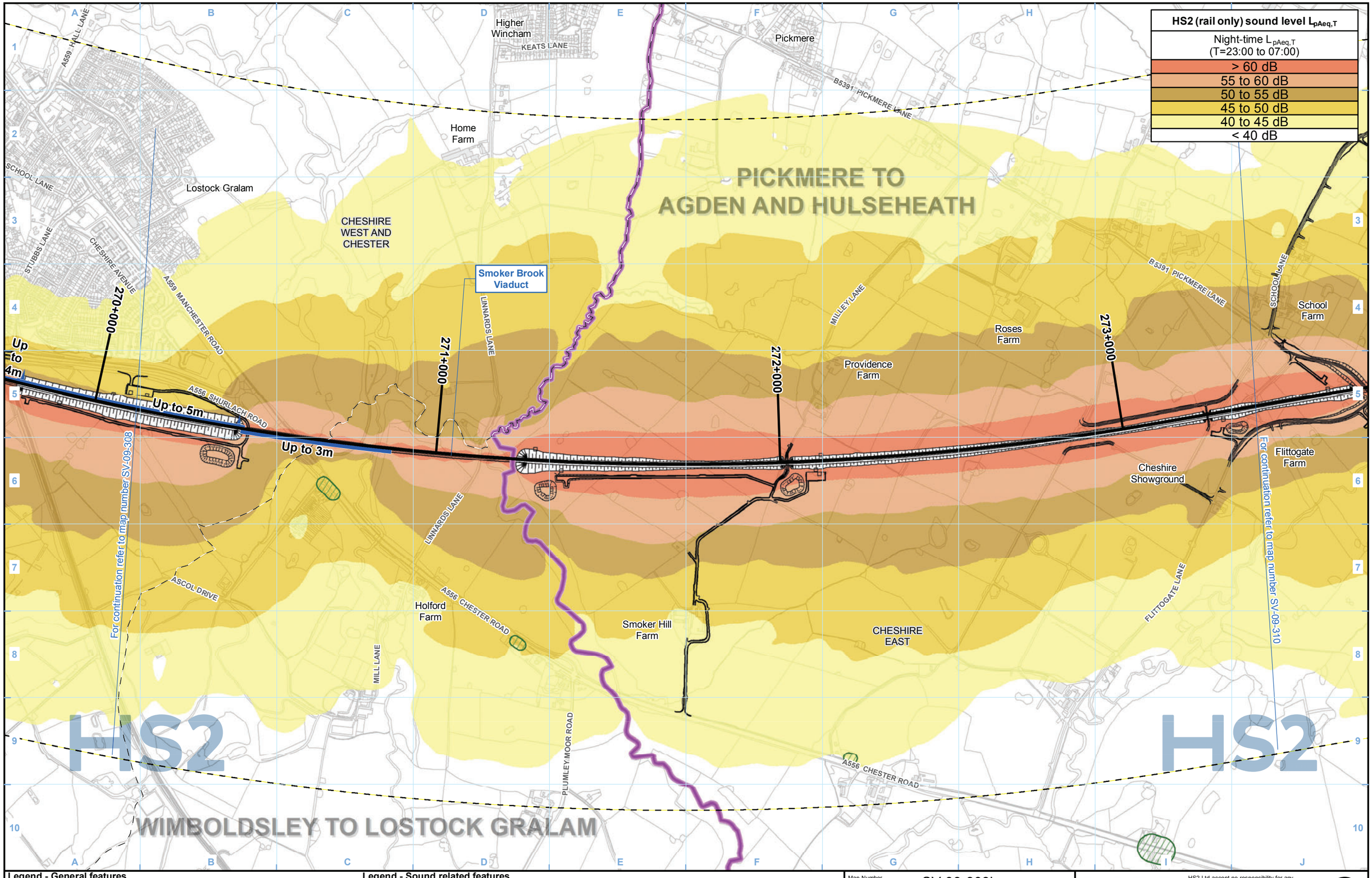
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003090-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-09-309b

Map Name: Night-time Operational Sound Contour Maps

Community Area MA03: Pickmere to Agden and Hulseheath

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003131-P01

Date: 10/08/21

HS2 (rail only) sound level $L_{pAeq,T}$

Daytime $L_{pAeq,T}$ (T=07:00 to 23:00)
> 70 dB
65 to 70 dB
60 to 65 dB
55 to 60 dB
50 to 55 dB
< 50 dB

Frog Lane Farm
HALL LANE
FROG LANE
BUDWORTH ROAD
M6
WINTERBOTTOM LANE
B5391 PICKMERE LANE
SCHOOL LANE
School Farm
274+000
275+000
276+000
M6 Mere Viaduct
Heyrose Farm
Hollowood Farm
Winterbottom Farm
WINTERBOTTOM LANE
For continuation refer to map number SV-08-311
Windmill Nurseries
Flittogate Farm
Arley Brook Viaduct
For continuation refer to map number SV-08-309b
FLITTOGATE LANE
HOLLOWOOD LANE
Bentleyhurst Farm
CHESHIRE EAST
OLD HALL LANE
A556
BENTLEYHURST LANE
Hollybush Farm

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks: Embankment, Cutting

Non engineering earthworks: Embankment, Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:

- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:

- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-08-310

Map Name: Daytime Operational Sound Contour Maps

Community Area MA03: Pickmere to Agden and Hulseheath

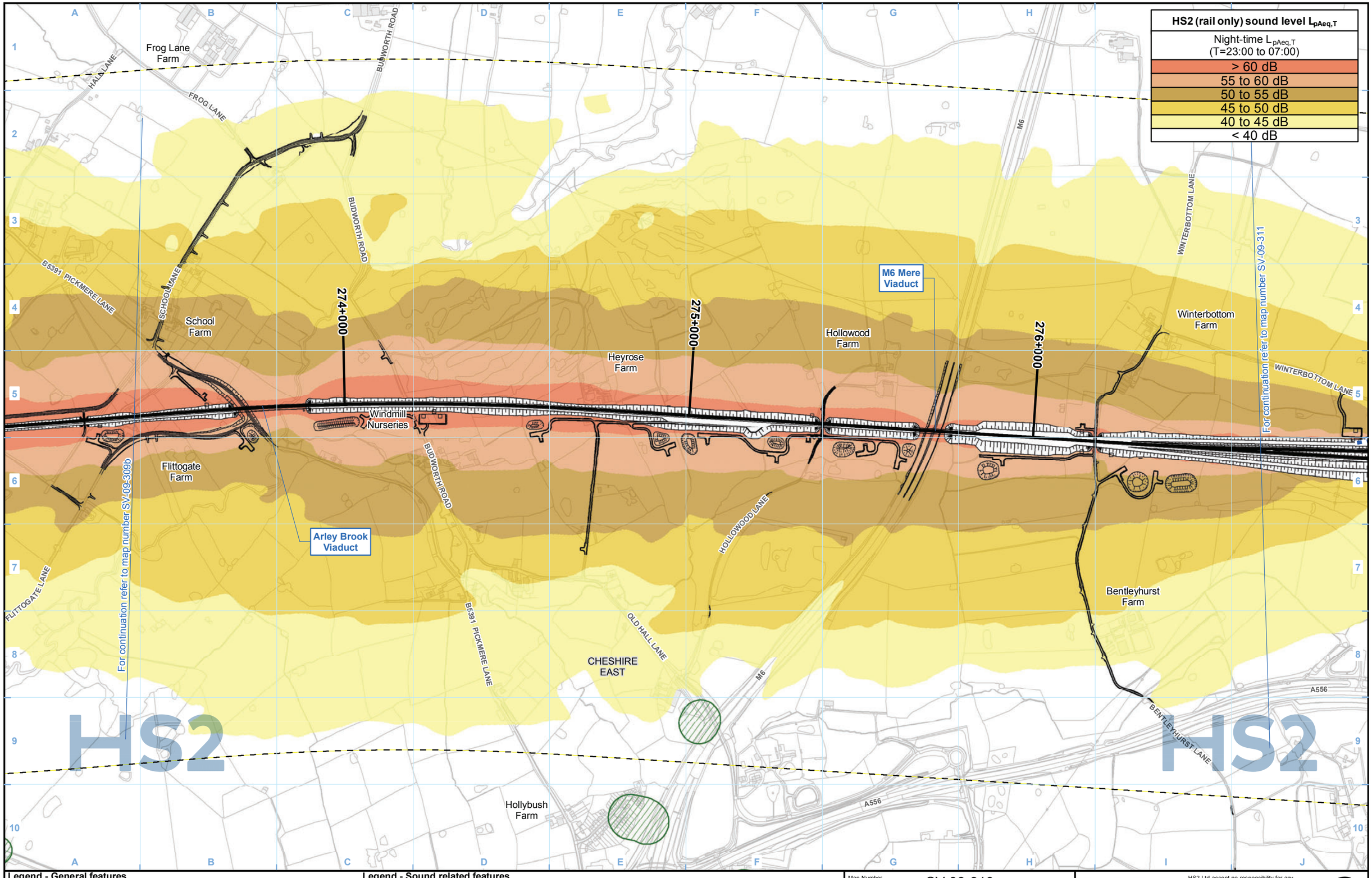
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003091-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks: Embankment; Cutting

Non engineering earthworks: Embankment; Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:

- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:

- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-09-310

Map Name: Night-time Operational Sound Contour Maps

Community Area MA03: Pickmere to Agden and Hulseheath

Scale at A3: 1:10,000

0 100 200 300 400 Metres

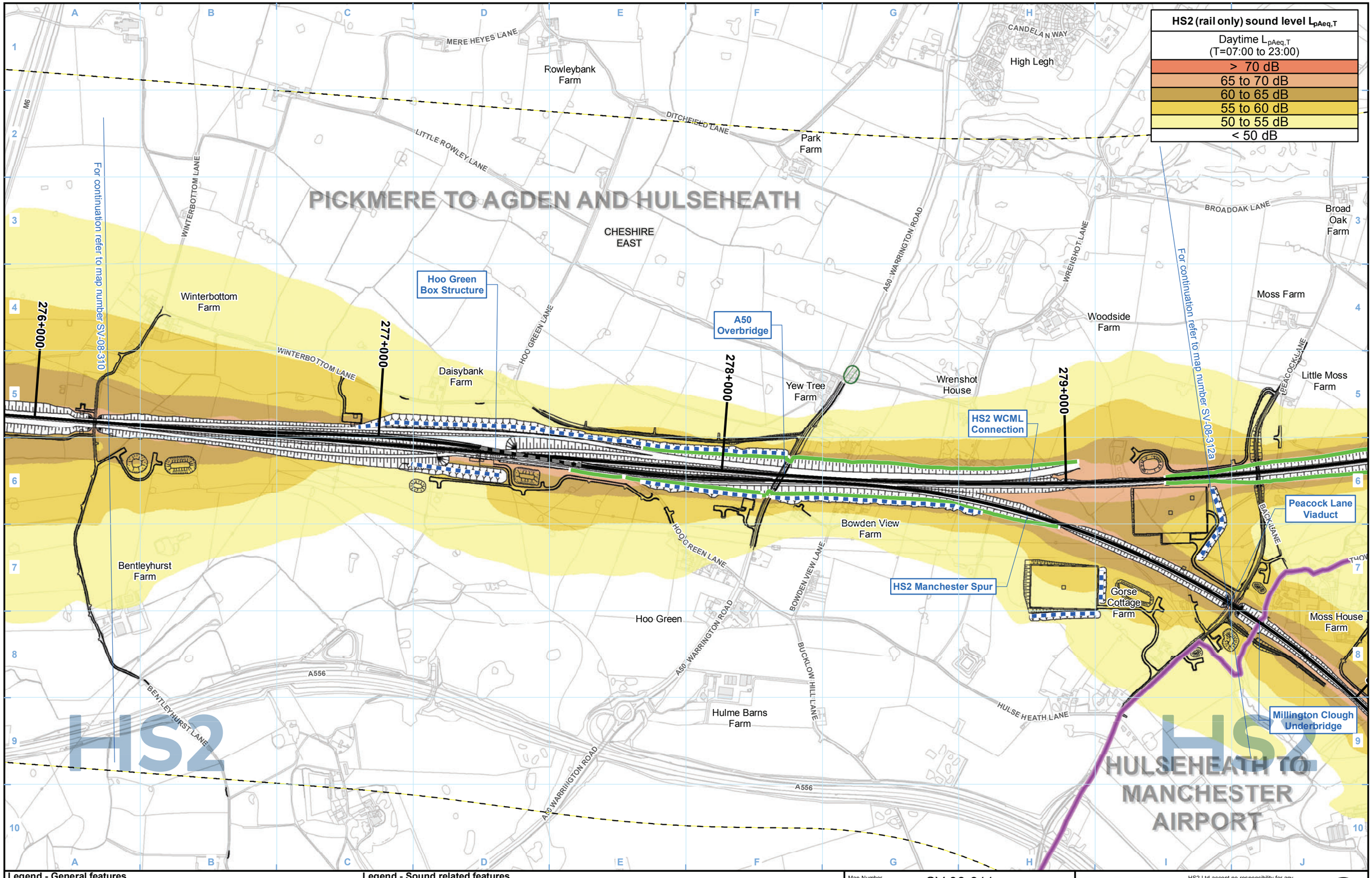
Doc Number: 2DE01-MWJ-EV-MAP-M000-003132-P01

Date: 10/08/21

PICKMERE TO AGDEN AND HULSEHEATH

HS2 (rail only) sound level $L_{pAeq,T}$

Daytime $L_{pAeq,T}$ (T=07:00 to 23:00)
> 70 dB
65 to 70 dB
60 to 65 dB
55 to 60 dB
50 to 55 dB
< 50 dB



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks: Embankment; Cutting

Non engineering earthworks: Embankment; Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:

- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:

- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-08-311

Map Name: Daytime Operational Sound Contour Maps

Community Area MA03: Pickmere to Agden and Hulseheath

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003092-P01

Date: 10/08/21

PICKMERE TO AGDEN AND HULSEHEATH

HS2 (rail only) sound level $L_{pAeq,T}$

Night-time $L_{pAeq,T}$ (T=23:00 to 07:00)

- > 60 dB
- 55 to 60 dB
- 50 to 55 dB
- 45 to 50 dB
- 40 to 45 dB
- < 40 dB

MERE HEYES LANE
Rowleybank Farm
CANDELA N WAY
High Legh
M6
DITCHFIELD LANE
LITTLE ROWLEY LANE
Park Farm
WINTERBOTTOM LANE
CHESHIRE EAST
A50 WARRINGTON ROAD
WREINSHOT LANE
BROADOAK LANE
Broad Oak Farm
For continuation refer to map number SV-09-310
Hoo Green Box Structure
HOO GREEN LANE
A50 Overbridge
Winterbottom Farm
276+000
277+000
278+000
279+000
WINTERBOTTOM LANE
Daisybank Farm
Yew Tree Farm
Woodside Farm
Moss Farm
Wrenshot House
HS2 WCML Connection
For continuation refer to map number SV-09-312a
PEACOCK LANE
Little Moss Farm
Peacock Lane Viaduct
BACK LANE
Bowden View Farm
BOWDEN VIEW LANE
HS2 Manchester Spur
Gorse Cottage Farm
Moss House Farm
Bentleyhurst Farm
Hoo Green
A556
BENTLEYHURST LANE
BUCKLOW HILL LANE
HULSE HEATH LANE
Hulme Barns Farm
Millington Clough Underbridge
HULSEHEATH TO MANCHESTER AIRPORT

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks: Embankment; Cutting

Non engineering earthworks: Embankment; Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:

- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:

- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-09-311

Map Name: Night-time Operational Sound Contour Maps

Community Area MA03: Pickmere to Agden and Hulseheath

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003133-P01

Date: 10/08/21

HS2 (rail only) sound level $L_{pAeq,T}$
Daytime $L_{pAeq,T}$ (T=07:00 to 23:00)
> 70 dB
65 to 70 dB
60 to 65 dB
55 to 60 dB
50 to 55 dB
< 50 dB

BROOMEDGE TO GLAZEBROOK

PICKMERE TO AGDEN AND HULSEHEATH

HULSEHEATH TO MANCHESTER AIRPORT

Abbey Leys Farm
Broomedge
B5159 BURFORD LANE
WRENSHOT LANE
BROADOAK LANE
Broad Oak Farm
Woodside Farm
Moss Farm
M56
AGDEN PARK LANE
CHESHIRE EAST
WARRINGTON BOROUGH
A56 LYMM ROAD
Spring Farm
For continuation refer to map number SV-08-311
For continuation refer to map number SV-08-313
279+000
280+000
281+000
282+000
283+000
PEACOCK LANE
Peacock Lane Overbridge
Little Moss Farm
FROGHALL LANE
MOSS LANE
AGDEN LANE
Scandia House
Agden Hall
A56 Lymm Road Viaduct
Bridgewater Canal Viaduct
WARRINGTON LANE
SPRING LANE
Agden Lane Farm
Up to 3m
Up to 2m
Up to 2m
Agden Bridge Farm
Moss House Farm
BACK LANE
Middle Moss Farm
Gorse Cottage Farm
THOWLER LANE
Manchester to Liverpool Junction Overbridge
Agden Brook Farm
Ivy House Farm
280+000
BOOTHBANK LANE
Booth Bank Farm
Woolstencroft Farm
HS2 Manchester Spur
Agden Brook Viaduct
For continuation refer to map number SV-08-319
Millington Lane Overbridge
REDDY LANE

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks: Embankment; Cutting

Non engineering earthworks: Embankment; Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:

- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:

- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-08-312a

Map Name: Daytime Operational Sound Contour Maps

Community Area MA03: Pickmere to Agden and Hulseheath

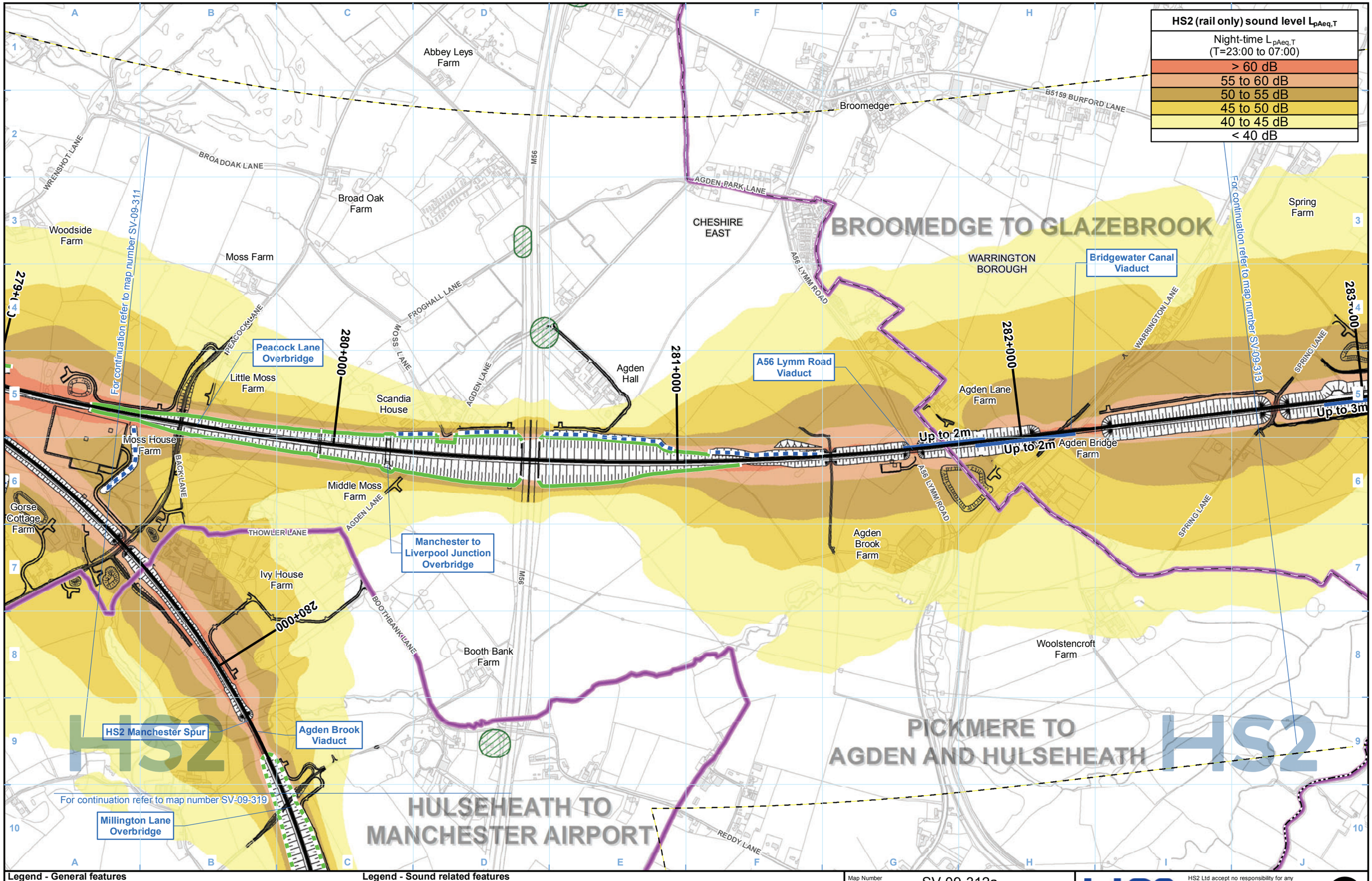
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003093-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-09-312a

Map Name: Night-time Operational Sound Contour Maps

Community Area MA03: Pickmere to Agden and Hulseheath

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003134-P01

Date: 10/08/21

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High Speed Rail
(Crewe – Manchester)
Environmental Statement

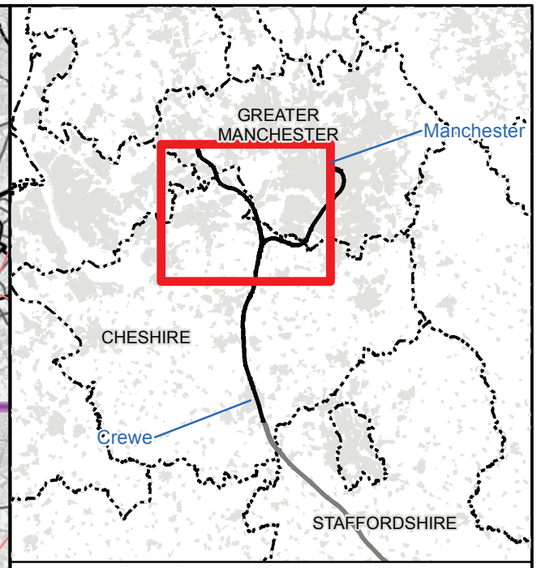
MA04: Broomedge to Glazebrook

SV-02 - Operational Noise and Vibration Impacts and Likely Significant Effects (with Assessment Location)

SV-03 - Assessment and Monitoring Locations for Construction Sound, Noise and Vibration Assessments

SV-08 - Daytime Operational Sound Contour Maps

SV-09 - Night-time Operational Sound Contour Maps



Map Series Information:

SV-02 presents the direct operational noise impacts and likely significant effects of the Proposed Scheme.

The SV-02 figure series necessarily contains a large amount of information relating to the operational noise and vibration assessment. It is designed to communicate visually the assessment process from the prediction of impacts to the determination of likely residual significant effects. The corresponding text is included in Vol2 and Vol5.

Key items on the map include the following:
- The Proposed Scheme (the proposed railway alignments and surrounding associated earthworks/roads);
- blue and green lines representing the wayside airborne noise mitigation measures included in the Proposed Scheme;
- the study areas, which indicate the areas within which direct sound and vibration impacts of the scheme have been quantitatively assessed;
- the calculated direct operational impacts of the scheme, displayed as colour-coded buildings and symbols representing buildings that would potentially qualify for noise insulation;
- sound contours representing sound produced by the new railway (displayed in a simpler manner than on SV-08 and SV-09 in order not to obscure the features on the map series);
- the assessment locations at which a quantitative prediction of sound and impacts have been carried out (representing a number of nearby buildings). These are labelled with a unique reference number to enable cross-reference to further detail regarding the assessments in Volume 5: Appendix SV-003-0MA0X; and
- labels indicating where the likely residual direct noise or vibration significant effects have been identified. These are labelled with a unique reference number to enable cross-reference to further detail regarding the assessments in Volume 5: Appendix SV-003-0MA0X.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

A more detailed explanation of each legend item included on the figures and on the separate legend page can be found in the data dictionary.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-02-INDEX-MA04

Map Name: Index Map of: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Community Area MA04: Broomedge to Glazebrook

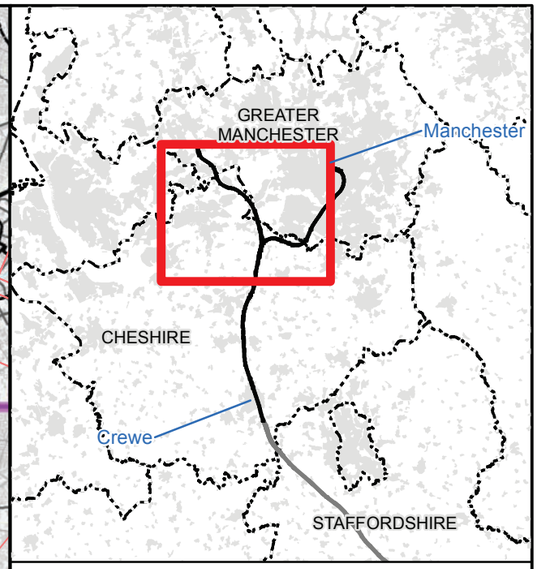
Registered in England. Registration number 06791686. Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:100,000

0 1,000 2,000 3,000 4,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002040-P01

Date: 10/08/21



Map Series Information:

The SV-03 figure series accompanies the construction noise & vibration assessments. It shows the locations at which a quantitative assessment of the direct effects of construction noise and/or vibration has been carried out. These are labelled as assessment locations with a reference number to enable cross-reference to the construction noise and vibration reports contained in Volume 5: Appendix SV-002-0MA04.

The figure series also shows locations at which baseline sound measurements were carried out.
These baseline measurement locations are labelled with a reference number to enable cross-reference to the baseline sound reports contained in Volume 5: Appendix SV-002-0MA04.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

A more detailed explanation of each legend item included on the figures can be found in the data dictionary.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-03-INDEX-MA04

Map Name: Index Map of: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA04: Broomedge to Glazebrook

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:100,000

0 1,000 2,000 3,000 4,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002086-P01

Date: 06/09/21

HS2 (rail only) noise level $L_{pAeq,T}$		Potential noise effect[1, 2]	
Night-time $L_{pAeq,T}$ (T=23:00 to 07:00)	Daytime $L_{pAeq,T}$ (T=07:00 to 23:00)	**Residential**	**Non-residential & quiet areas**
> 55 dB	> 65 dB	Likely significant effect on dwellings indicated by ◯, ✳ or ✕ avoided by noise insulation	Effect dependent on receptor and baseline. For further details see Volume 5, Appendix SV-003-0MA0X. Likely significant effect indicated by MA0X-O-N#[2]
40 to 55 dB	50 to 65 dB	Effect dependent on noise level change and significance criteria. Likely significant effects on groups of dwellings and any shared community open areas indicated by MA0X-O-C#[2]	
< 40 dB	< 50 dB	Generally no adverse effect expected[1]	

Operational airborne noise impacts at residential buildings[1]

- Major adverse
- Moderate adverse
- Minor adverse
- Negligible
- Beneficial

- ◯ Potential additional noise insulation (triggered by maximum noise levels at night)[1]
- ✳ Potential additional noise insulation (triggered by WHO Night Noise Guidelines Interim Target)[1]
- ✕ Potential noise insulation (triggered by Noise Insulation Regulations 1996)[1]
- ◯ L_{pAFmax} exceeds 60dB façade HS2 train only L_{pAFmax} +2.5dB façade correction

▭ Ground-borne noise or vibration impact at residential buildings

[1] For further information see Volume 5 Appendix SV-001-00000
[2] For details see relevant Volume 5 Appendix SV-003-0MA0X

SV-02 - Legend

Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Doc Number: -

Date:

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For SNV effects symbology please refer to SV-02 - Legend page

BROOMEDGE TO GLAZEBROOK

PICKMERE TO AGDEN AND HULSEHEATH

HULSEHEATH TO MANCHESTER AIRPORT

HS2

Abbey Leys Farm
Broomedge
Broad Oak Farm
Woodside Farm
Moss Farm
CHESHIRE EAST
WARRINGTON BOROUGH
Spring Farm
Agden Hall
Scandia House
Little Moss Farm
Moss House Farm
Middle Moss Farm
Agden Lane Farm
Agden Bridge Farm
Gorse Cottage Farm
Ivy House Farm
Booth Bank Farm
Agden Brook Farm
Woolstencroft Farm

Peacock Lane Overbridge
A56 Lymm Road Viaduct
Bridgewater Canal Viaduct
Manchester to Liverpool Junction Overbridge
HS2 Manchester Spur
Agden Brook Viaduct
Millington Lane Overbridge

MA03/050
MA03-O-C4
MA04-O-C1
MA04-O-C1

Up to 2m
Up to 2m
Up to 3m

ML712607
ML712608
ML712805
ML712727
ML712752
ML712807
ML712700
ML712611
ML712612
ML712701

BROADOAK LANE
WRENSHOT LANE
AGDEN PARK LANE
B5159 BURFORD LANE
STAGE LANE
BRADSHAW LANE
FROGHALL LANE
MOSS LANE
PEACOCK LANE
AGDEN LANE
A56 LYMM ROAD
WARRINGTON LANE
SPRING LANE
THOWLER LANE
BOOTHBANK LANE
REDDY LANE
M56

279+000
280+000
281+000
282+000
283+000

For continuation refer to map number SV-02-311
For continuation refer to map number SV-02-313
For continuation refer to map number SV-02-319

612694 612704 612698 612757 612887 612829 612805 612747 612820 612780 612745 613076 613211 612834 613037 613077 612796 612736 612795 612712 612732 612751 612730 612706 612766 612783 612808 612801 612794 612807 612827 612851 612843 612720 612707 612754 617502 617503 617507 618240 617516 617523 618019 617501 617500 617505 617504 617506 617508 618241 618242 617521 617520 617510 617509 617511 618213 617515 617517 617524 618117 617518 617512 612891 617519 617513

A B C D E F G H I J
1 2 3 4 5 6 7 8 9 10

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-312b

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

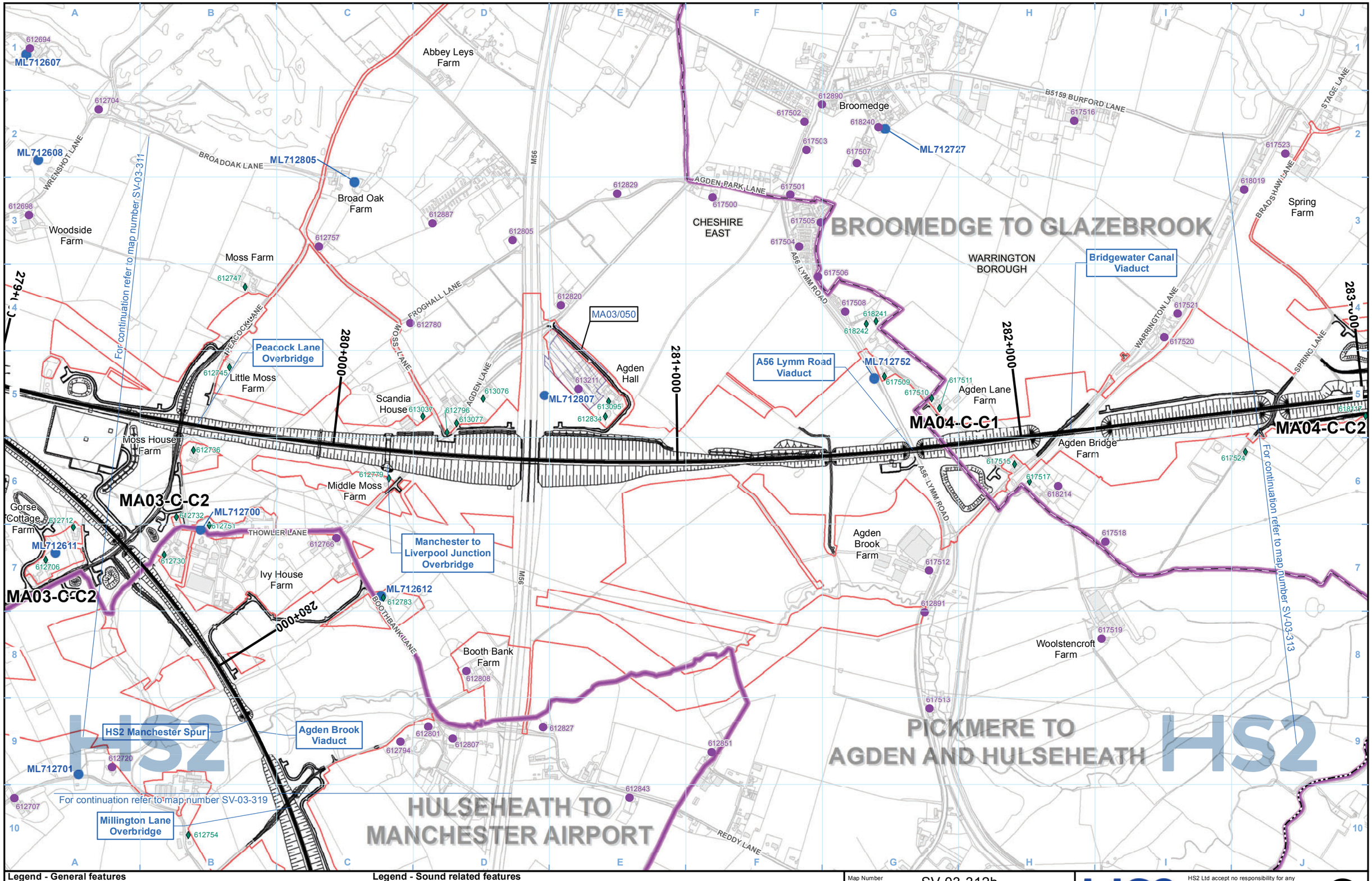
Community Area MA04: Broomedge to Glazebrook

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002015-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks: Embankment, Cutting

Non engineering earthworks: Embankment, Cutting

Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA04) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA04-C-C# and MA04-C-N#, respectively.

Map Number: SV-03-312b

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA04: Broomedge to Glazebrook

Registered in England. Registration number 06791686. Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002062-P01

Date: 06/09/21

For SNV effects symbology please refer to SV-02 - Legend page

Oughtrington
MILLERS LANE
REDDISH LANE
CHASE MEADOW
RUSHES MEADOW
A6144 BIRCHBROOK ROAD
B5159 BURFORD LANE
617516
STAGE LANE
617532
WIGSEY LANE
617545
617546
617552
WARBURTON BRIDGE ROAD
WARRINGTON BOROUGH
ML712719
617530
Heatley
617534
617523
618019
BRADSHAW LANE
MA04/088
617528
B5159 MILL LANE
617531
617535
B5159 TOWNFIELD LANE
ML712804
617549
Spring Farm
MA04/127
618065
617538
618116
Warburton
617548
ML712720
618202
618203
618204
PARK ROAD
A6144 BENT LANE
A6144 Paddock Lane Overbridge
PADDOCK LANE
WET GATE LANE
Wet Gate Farm
617529
Wet Gate Lane Farm
WARRINGTON LANE
617521
617520
Spring Lane Underbridge
283+000
284+000
285+000
286+000
617964
617541
618220
617550
Warburton Park Farm
617553
SPRING LANE
ML712754
MA04-O-C3
617544
Up to 3m
Up to 3m
Up to 3m
Up to 3m
618117
617526
617524
Heatley Heath Farm
MA04-O-C2
MA04-O-C3
617543
Moss Brow Farm
618078
618207
618206
A6144 WARBURTON LANE
617547
ML712728
617542
Mossbrow
618205
617518
For continuation refer to map number SV-02-312a
River Bollin West Viaduct
617533
Lower Carr Green Farm
617540
617567
617566
617562
617571
617561
617572
617563
617537
CARRGREEN LANE
617539
Heathlands Farm
617551
BROOMEDGE TO GLAZEBROOK
PICKMERE TO AGDEN AND HULSEHEATH
HS2
618112
Higher Carr Green Farm
B5160 DUNHAM ROAD
TRAFFORD METROPOLITAN BOROUGH
617559
617565
ML712729
617560
MA04/121
618286
617556
617564
Partington
618102
LAUREL WALK
TULIP ROAD
REDBROOK ROAD
617554
MOSS LANE
A6144 WARBURTON LANE
617536
BARNS LANE
For continuation refer to map number SV-02-314a

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-313

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

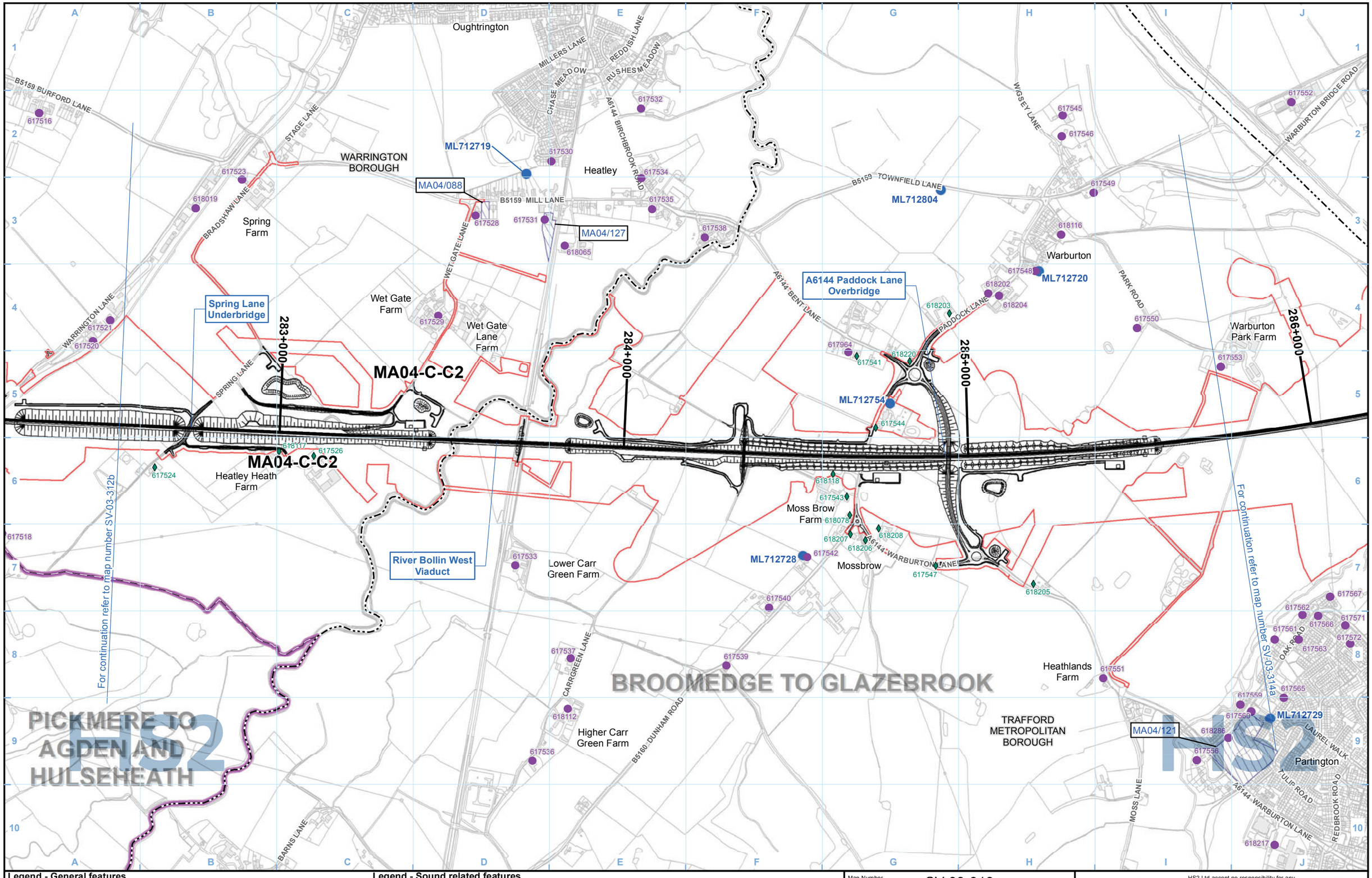
Community Area MA04: Broomedge to Glazebrook

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002016-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA04) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA04-C-C# and MA04-C-N#, respectively.

Map Number: SV-03-313

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA04: Broomedge to Glazebrook

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002063-P01

Date: 06/09/21

For SNV effects symbology please refer to SV-02 - Legend page

BROOMEDGE TO GLAZEBROOK

WARRINGTON BOROUGH

TRAFFORD METROPOLITAN BOROUGH

SALFORD CITY

Lane End
Ash Tree Farm
Brook Farm
Omrod Farm
Warburton
Warburton Park Farm
Hollins Green
Hollinfare
Bridge Farm
Beechfield Farm
Glazebrook
Brush Farm
Church Farm
Moss Farm
Mount Pleasant Farm
Millbank Hall Farm
Partington
Cadishead
Great Woolden Hall Farm

WIGSEY LANE
WARBURTON BRIDGE ROAD
CHAPEL LANE
MOSS SIDE LANE
SCHOOL LANE
A57 MANCHESTER ROAD
PARK ROAD
BIRCH ROAD
SCHOOL LANE
DAM LANE
MOSS LANE
WOOD LANE
LOCK LANE
LAUREL WALK
TULIP ROAD
REDBROOK ROAD
A6144 WARBURTON LANE
A57 CADISHEAD WAY
VICTORY ROAD
HAIG AVENUE
KITCHENER AVENUE
LIVERPOOL ROAD
ALLENBY ROAD
DUDLEY ROAD
CUMBERLAND AVENUE
LORD'S STREET
BUCKINGHAM ROAD
CARLTON WAY
B5212 GLAZEBROOK LANE
BANK STREET
FLIXTON ROAD

ML712720
ML712721
ML712729
ML712730
ML712734
ML712735
ML712756
ML712759
ML712801
ML712718

MA04-O-C4
MA04/121
MA04/105
MA04/112

Manchester Ship Canal Viaduct
Glazebrook (Railway) Viaduct

286+000
287+000
288+000
289+000

Up to 2m

For continuation refer to map number SV-02-313
For continuation refer to map number SV-02-315

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-314a

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Community Area MA04: Broomedge to Glazebrook

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002017-P01

Date: 10/08/21

BROOMEDGE TO GLAZEBROOK

WARRINGTON BOROUGH

TRAFFORD METROPOLITAN BOROUGH

SALFORD CITY

MA04-C-C3

MA04-C-N1

MA04-C-N2

MA04-C-N3

MA04-C-N4

286+000

287+000

288+000

289+000

ML712720

ML712721

ML712729

ML712730

ML712734

ML712735

ML712756

ML712759

ML712801

ML712718

MA04/105

MA04/112

MA04/121

Warburton

Warburton Park Farm

Lane End

Brook Farm

Hollins Green

Hollinfare

Mount Pleasant Farm

Millbank Hall Farm

Partington

Cadishead

Ash Tree Farm

Omrod Farm

Bridge Farm

Beechfield Farm

Church Farm

Moss Farm

Brush Farm

Glazebrook

Great Woolden Hall Farm

Glazebrook (Railway) Viaduct

Manchester Ship Canal Viaduct

WIGSEY LANE

PARK ROAD

WARBURTON BRIDGE ROAD

CHAPEL LANE

A57 MANCHESTER ROAD

SCHOOL LANE

BIRCH ROAD

MOSS SIDE LANE

SCHOOL LANE

MOSS LANE

DAM LANE

OAK ROAD

WOOD LANE

LAUREL WALK

TULIP ROAD

REDBROOK ROAD

A6144 WARBURTON LANE

WALNUT ROAD

LOCK LANE

A57 CADISHEAD WAY

VICTORY ROAD

HAIG AVENUE

KITCHENER AVENUE

LIVERPOOL ROAD

ALLENBY ROAD

DUDLEY ROAD

CUMBERLAND AVENUE

LORD'S STREET

BUCKINGHAM ROAD

BANK STREET

B5212 GLAZEBROOK LANE

CARLTON WAY

DAMHEAD LANE

A57

For continuation refer to map number SV-03-313

For continuation refer to map number SV-03-315

617545 617546 617549 618116 617548 617550 617553 617555 617552 617557 617558 617568 617575 617570 617579 617569 617588 618066 617573 617583 617577 617596 617576 617593 617590 617601 618232 617581 617586 617594 617598 617599 617591 617600 617602 617965 617607 617610 617612 617626 618262 618218 617622 618243 617642 618079 617628 617585 617613 618077 617604 617608 617606 617609 617614 617616 617618 617617 617615 617998 617629 617631 617638 617623 617625 617630 617632 617621 618245 618244 617624 617639 617641 618246 617645 617644 617562 617567 617561 617566 617563 617571 617572 617580 617597 618285 617559 617565 617560 617556 618286 617589 617595 617603 617592 618217

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks: Embankment, Cutting

Non engineering earthworks: Embankment, Cutting

Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA04) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA04-C-C# and MA04-C-N#, respectively.

Map Number: SV-03-314a

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

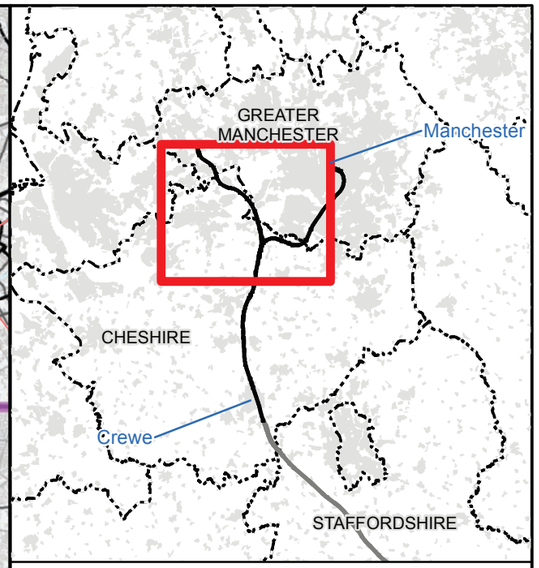
Community Area MA04: Broomedge to Glazebrook

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002064-P01

Date: 06/09/21



Map Series Information:

SV-08 presents the predicted daytime operational sound from the new railway.

The sound levels from the new railway (expressed as $_{LpAeq,T}$) are presented in typical noise mapping colours in 5 dB steps. There is a panel at the top right of the figure; this panel contains a key communicating the daytime sound levels represented by the various colours. A corresponding and similar panel is found on SV-02 and SV-09, along with the key sound contours that were used within the environmental assessment.

Also presented on SV-08 are the following (which are also included on SV-02):

- A representation of the Proposed Scheme, including the railway alignment (indicating whether it is on the surface or in tunnel), any new and altered roads and all associated engineering and environmental mitigation earthworks;
- blue and green lines representing the wayside airborne noise mitigation measures included in the Proposed Scheme;
- the extent of the study area within which the direct impacts and effects of the scheme have been quantitatively assessed.

A more detailed explanation of each legend item included on the figures can be found in the data dictionary.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-08-INDEX-MA04

Map Name: Index Map of: Daytime Operational Sound Contour Maps

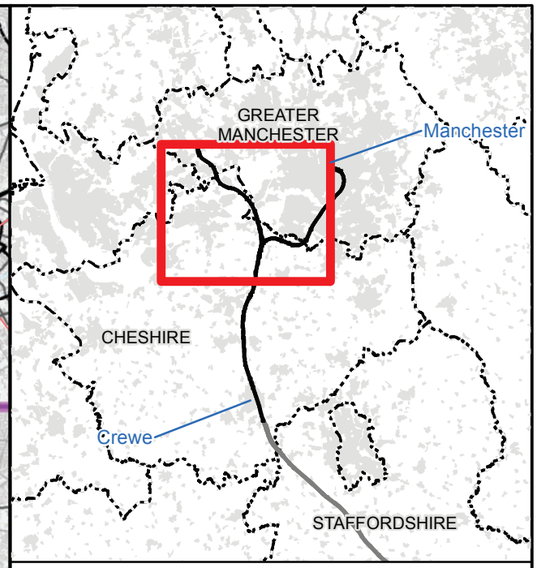
Community Area MA04: Broomedge to Glazebrook

Scale at A3: 1:100,000

0 1,000 2,000 3,000 4,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003075-P01

Date: 06/09/21



Map Series Information:

SV-09 presents the predicted night-time operational sound from the new railway.

The sound levels from the new railway (expressed as $_{LpAeq,T}$) are presented in typical noise mapping colours in 5 dB steps. There is a panel at the top right of the figure; this panel contains a key communicating the night-time sound levels represented by the various colours. A corresponding and similar panel is found on SV-02 and SV-08, along with the key sound contours that were used within the environmental assessment.

Also presented on SV-09 are the following (which are also included on SV-02):

- A representation of the Proposed Scheme, including the railway alignment (indicating whether it is on the surface or in tunnel), any new and altered roads and all associated engineering and environmental mitigation earthworks;
- blue and green lines representing the wayside airborne noise mitigation measures included in the Proposed Scheme;
- the extent of the study area within which the direct impacts and effects of the scheme have been quantitatively assessed.

A more detailed explanation of each legend item included on the figures can be found in the data dictionary.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-09-INDEX-MA04

Map Name: Index Map of: Night-time Operational Sound Contour Maps

Community Area MA04: Broomedge to Glazebrook

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:100,000

0 1,000 2,000 3,000 4,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003116-P01

Date: 06/09/21

HS2 (rail only) sound level $L_{pAeq,T}$
Daytime $L_{pAeq,T}$ (T=07:00 to 23:00)
> 70 dB
65 to 70 dB
60 to 65 dB
55 to 60 dB
50 to 55 dB
< 50 dB

BROOMEDGE TO GLAZEBROOK

PICKMERE TO AGDEN AND HULSEHEATH

HULSEHEATH TO MANCHESTER AIRPORT

Abbey Leys Farm
Broomedge
B5159 BURFORD LANE
WRENSHOT LANE
BROADOAK LANE
Broad Oak Farm
Woodside Farm
Moss Farm
M56
AGDEN PARK LANE
CHESHIRE EAST
WARRINGTON BOROUGH
A56 LYMM ROAD
Spring Farm
For continuation refer to map number SV-08-311
For continuation refer to map number SV-08-313
279+000
280+000
281+000
282+000
283+000
PEACOCK LANE
Peacock Lane Overbridge
Little Moss Farm
FROGHALL LANE
MOSS LANE
AGDEN LANE
Scandia House
Agden Hall
A56 Lymm Road Viaduct
Bridgewater Canal Viaduct
WARRINGTON LANE
SPRING LANE
Agden Lane Farm
Up to 3m
Up to 2m
Up to 2m
Agden Bridge Farm
Moss House Farm
BACK LANE
Middle Moss Farm
Gorse Cottage Farm
THOWLER LANE
Manchester to Liverpool Junction Overbridge
Agden Brook Farm
Ivy House Farm
280+000
BOOTHBANK LANE
Booth Bank Farm
Woolstencroft Farm
HS2 Manchester Spur
Agden Brook Viaduct
For continuation refer to map number SV-08-319
Millington Lane Overbridge
REDDY LANE

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks: Embankment; Cutting

Non engineering earthworks: Embankment; Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:

- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:

- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-08-312b

Map Name: Daytime Operational Sound Contour Maps

Community Area MA04: Broomedge to Glazebrook

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003094-P01

Date: 10/08/21

HS2 (rail only) sound level $L_{pAeq,T}$
Night-time $L_{pAeq,T}$ (T=23:00 to 07:00)
> 60 dB
55 to 60 dB
50 to 55 dB
45 to 50 dB
40 to 45 dB
< 40 dB

BROOMEDGE TO GLAZEBROOK

PICKMERE TO AGDEN AND HULSEHEATH

HULSEHEATH TO MANCHESTER AIRPORT

Abbey Leys Farm
Broomedge
B5159 BURFORD LANE
WRENSHOT LANE
BROADOAK LANE
Broad Oak Farm
M56
AGDEN PARK LANE
Spring Farm
Woodside Farm
Moss Farm
CHESHIRE EAST
WARRINGTON BOROUGH
A56 LYMM ROAD
Bridgewater Canal Viaduct
For continuation refer to map number SV-09-311
For continuation refer to map number SV-09-313
279+000
280+000
281+000
282+000
283+000
PEACOCK LANE
Peacock Lane Overbridge
Little Moss Farm
FROGHALL LANE
MOSS LANE
AGDEN LANE
Agden Hall
Scandia House
A56 Lymm Road Viaduct
Agden Lane Farm
WARRINGTON LANE
SPRING LANE
Up to 3m
Up to 2m
Up to 2m
Agden Bridge Farm
Moss House Farm
BACK LANE
Middle Moss Farm
Gorse Cottage Farm
THOWLER LANE
Manchester to Liverpool Junction Overbridge
Agden Brook Farm
Ivy House Farm
260+000
BOOTHBANK LANE
Booth Bank Farm
Woolstencroft Farm
HS2 Manchester Spur
Agden Brook Viaduct
For continuation refer to map number SV-09-319
Millington Lane Overbridge
REDDY LANE

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-09-312b

Map Name: Night-time Operational Sound Contour Maps

Community Area MA04: Broomedge to Glazebrook

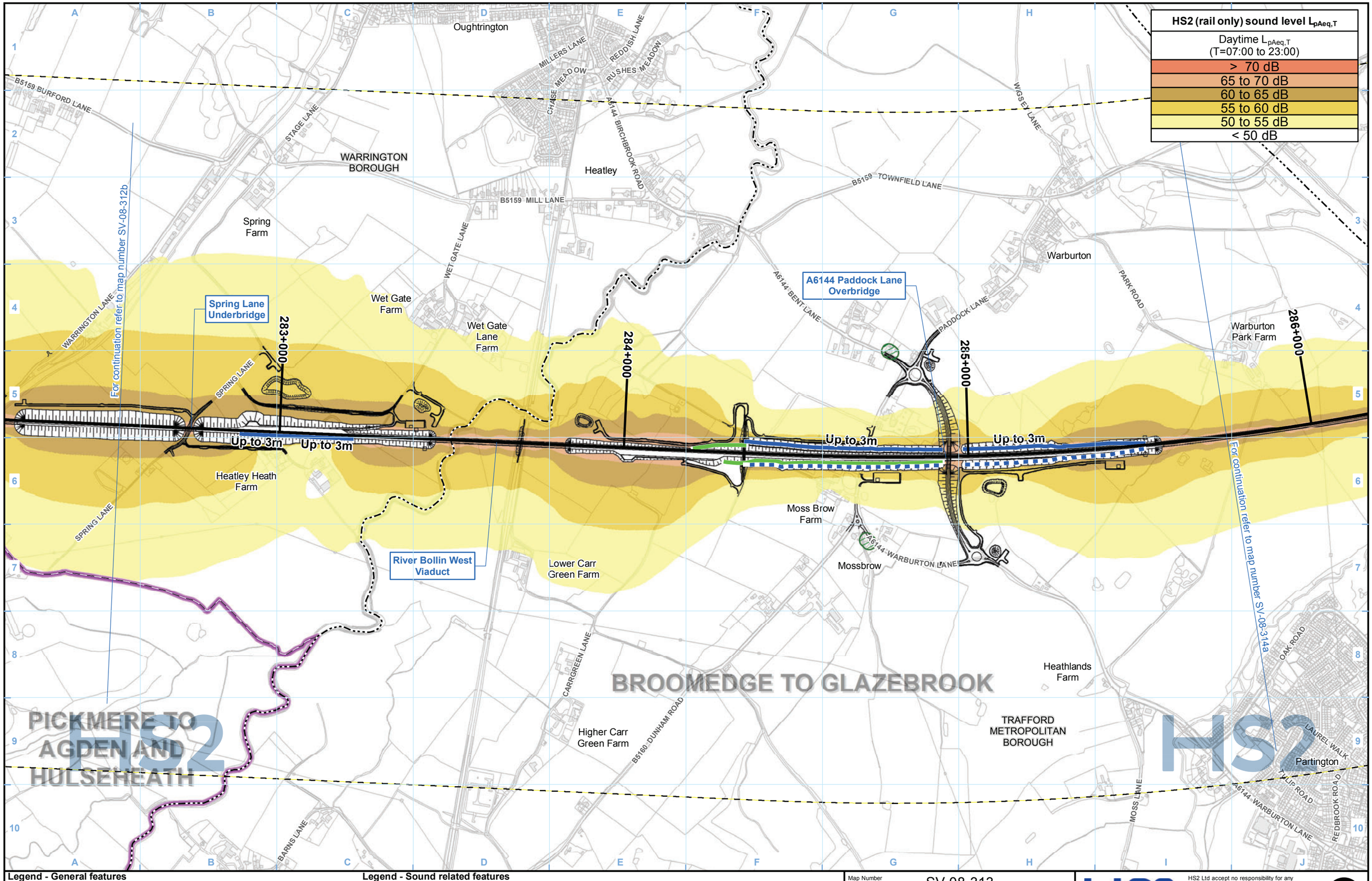
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003135-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-08-313

Map Name: Daytime Operational Sound Contour Maps

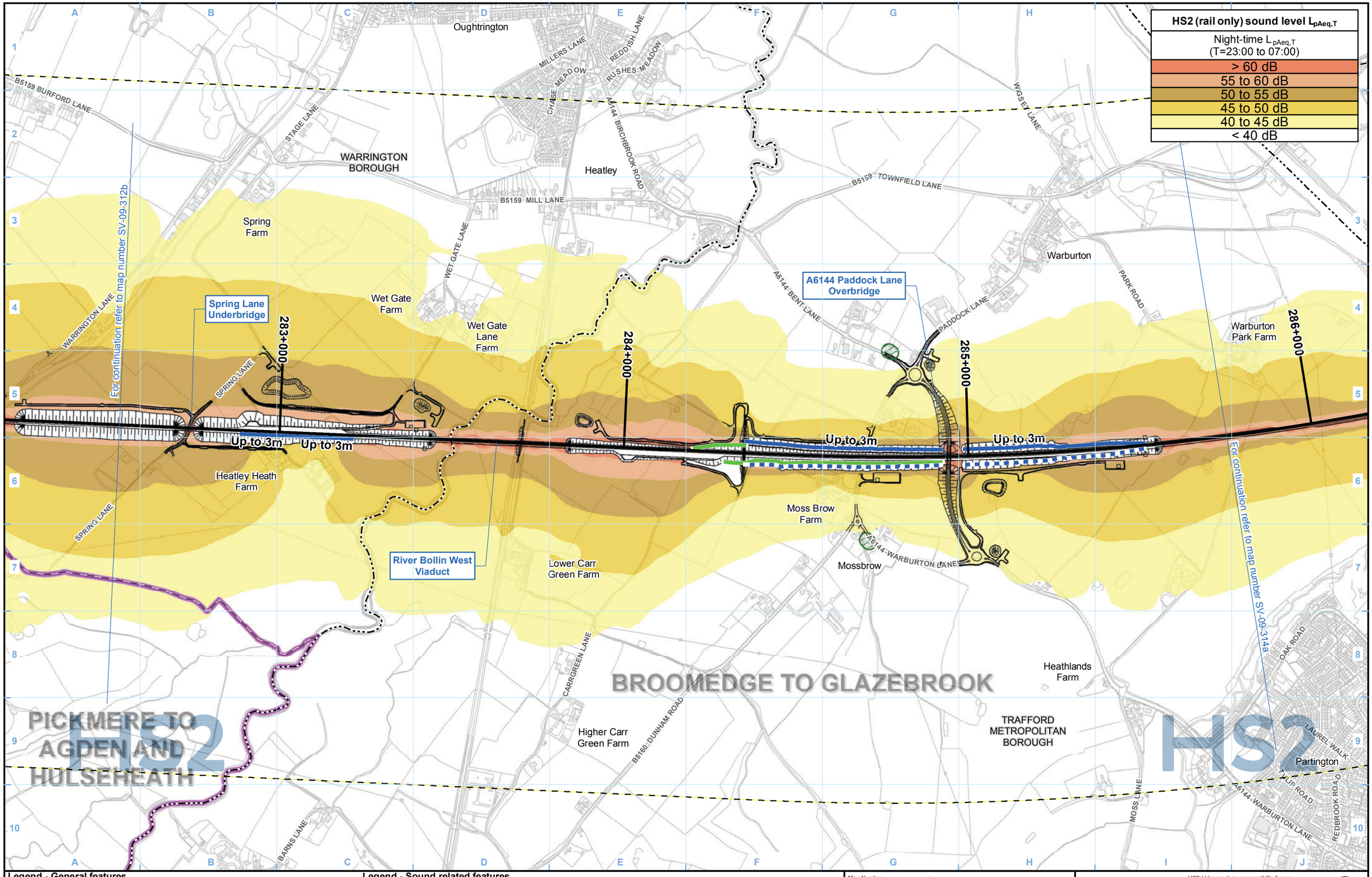
Community Area MA04: Broomedge to Glazebrook

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003095-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-09-313

Map Name: Night-time Operational Sound Contour Maps

Community Area MA04: Broomedge to Glazebrook

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003136-P01

Date: 10/08/21

BROOMEDGE TO GLAZEBROOK

HS2 (rail only) sound level $L_{pAeq,T}$

Daytime $L_{pAeq,T}$ (T=07:00 to 23:00)
> 70 dB
65 to 70 dB
60 to 65 dB
55 to 60 dB
50 to 55 dB
< 50 dB

Warburton
Warburton Park Farm
Lane End
Brook Farm
Ash Tree Farm
Omrod Farm
Hollins Green
WARRINGTON BOROUGH
Bridge Farm
Beechfield Farm
Glazebrook (Railway) Viaduct
Hollinfare
Mount Pleasant Farm
Millbank Hall Farm
Church Farm
Moss Farm
Manchester Ship Canal Viaduct
Partington
TRAFFORD METROPOLITAN BOROUGH
Cadishead
Brush Farm
Glazebrook
Great Woolden Hall Farm
SALFORD CITY

286+000
287+000
288+000
289+000

Up to 2m
Up to 2m
Up to 2m
Up to 2m

For continuation refer to map number SV-08-313
For continuation refer to map number SV-08-315

WIGSEY LANE
PARK ROAD
WARBURTON BRIDGE ROAD
CHAPEL LANE
MOSS SIDE LANE
A57 MANCHESTER ROAD
SCHOOL LANE
BIRCH ROAD
MOSS LANE
DAM LANE
DAMHEAD LANE
BANK STREET
A57 CADISHEAD WAY
VICTORY ROAD
HAIG AVENUE
KITCHENER AVENUE
LIVERPOOL ROAD
ALLENBY ROAD
DUDLEY ROAD
CUMBERLAND AVENUE
LORD'S STREET
BUCKINGHAM ROAD
B5212 GLAZEBROOK LANE
CARLTON WAY
OAK ROAD
WOOD LANE
WALNUT ROAD
LOCK LANE
LAUREL WALK
TULIP ROAD
REDBROOK ROAD
A6144 WARBURTON LANE

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-08-314a

Map Name: Daytime Operational Sound Contour Maps

Community Area MA04: Broomedge to Glazebrook

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003096-P01

Date: 10/08/21

BROOMEDGE TO GLAZEBROOK

HS2 (rail only) sound level $L_{pAeq,T}$

Night-time $L_{pAeq,T}$ (T=23:00 to 07:00)

- > 60 dB
- 55 to 60 dB
- 50 to 55 dB
- 45 to 50 dB
- 40 to 45 dB
- < 40 dB

Lane End
Ash Tree Farm
Brook Farm
Omrod Farm
Warburton
Warburton Park Farm
Hollins Green
WARRINGTON BOROUGH
Bridge Farm
Beechfield Farm
Glazebrook (Railway) Viaduct
Hollinfare
Mount Pleasant Farm
Millbank Hall Farm
Church Farm
Moss Farm
Manchester Ship Canal Viaduct
Partington
TRAFFORD METROPOLITAN BOROUGH
Cadishead
Brush Farm
Glazebrook
SALFORD CITY
Great Woolden Hall Farm

286+000 287+000 288+000 289+000

Up to 2m Up to 2m Up to 2m Up to 2m

WIGSEY LANE
CHAPEL LANE
MOSS SIDE LANE
WARBURTON BRIDGE ROAD
PARK ROAD
A57 MANCHESTER ROAD
SCHOOL LANE
BIRCH ROAD
DAM LANE
MOSS LANE
OAK ROAD
WOOD LANE
LOCK LANE
WALNUT ROAD
LAUREL WALK
TULIP ROAD
REDBROOK ROAD
A6144 WARBURTON LANE
A57 CADISHEAD WAY
VICTORY ROAD
HAIG AVENUE
KITCHENER AVENUE
LIVERPOOL ROAD
ALLENBY ROAD
DUDLEY ROAD
CUMBERLAND AVENUE
CARLTON WAY
B5212 GLAZEBROOK LANE
BANK STREET
DAMHEAD LANE
LORD'S STREET
BUCKINGHAM ROAD

For continuation refer to map number SV-09-313
For continuation refer to map number SV-09-315

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-09-314a

Map Name: Night-time Operational Sound Contour Maps

Community Area MA04: Broomedge to Glazebrook

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003137-P01

Date: 10/08/21

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HS2

High Speed Rail (Crewe – Manchester) Environmental Statement

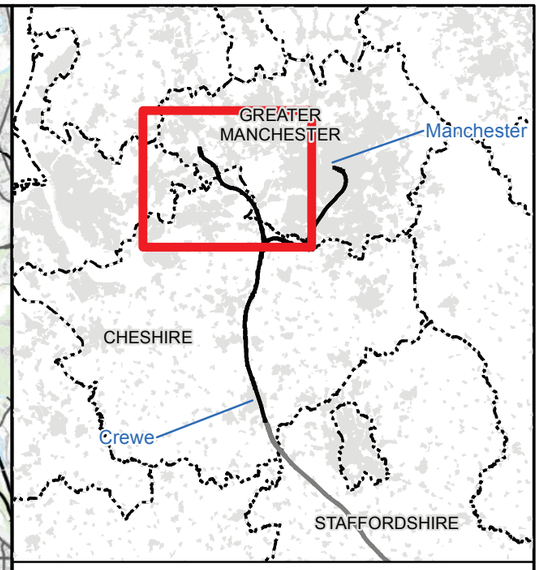
MA05: Risley to Bamfurlong

SV-02 - Operational Noise and Vibration Impacts and Likely Significant Effects (with Assessment Location)

SV-03 - Assessment and Monitoring Locations for Construction Sound, Noise and Vibration Assessments

SV-08 - Daytime Operational Sound Contour Maps

SV-09 - Night-time Operational Sound Contour Maps



Map Series Information:

SV-02 presents the direct operational noise impacts and likely significant effects of the Proposed Scheme.

The SV-02 figure series necessarily contains a large amount of information relating to the operational noise and vibration assessment. It is designed to communicate visually the assessment process from the prediction of impacts to the determination of likely residual significant effects. The corresponding text is included in Vol2 and Vol5.

Key items on the map include the following:
- The Proposed Scheme (the proposed railway alignments and surrounding associated earthworks/roads);
- blue and green lines representing the wayside airborne noise mitigation measures included in the Proposed Scheme;
- the study areas, which indicate the areas within which direct sound and vibration impacts of the scheme have been quantitatively assessed;
- the calculated direct operational impacts of the scheme, displayed as colour-coded buildings and symbols representing buildings that would potentially qualify for noise insulation;
- sound contours representing sound produced by the new railway (displayed in a simpler manner than on SV-08 and SV-09 in order not to obscure the features on the map series);
- the assessment locations at which a quantitative prediction of sound and impacts have been carried out (representing a number of nearby buildings). These are labelled with a unique reference number to enable cross-reference to further detail regarding the assessments in Volume 5: Appendix SV-003-0MA0X; and
- labels indicating where the likely residual direct noise or vibration significant effects have been identified. These are labelled with a unique reference number to enable cross-reference to further detail regarding the assessments in Volume 5: Appendix SV-003-0MA0X.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

A more detailed explanation of each legend item included on the figures and on the separate legend page can be found in the data dictionary.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-02-INDEX-MA05

Map Name: Index Map of: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

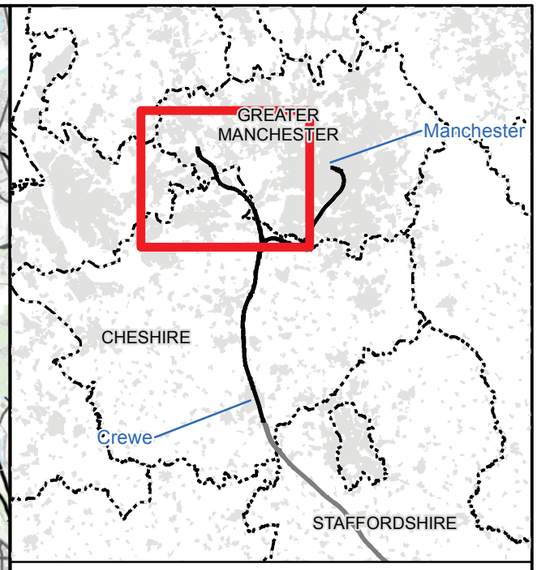
Community Area MA05: Risley to Bamfurlong

Scale at A3: 1:100,000

0 1,000 2,000 3,000 4,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002041-P01

Date: 10/08/21



Map Series Information:

The SV-03 figure series accompanies the construction noise & vibration assessments. It shows the locations at which a quantitative assessment of the direct effects of construction noise and/or vibration has been carried out. These are labelled as assessment locations with a reference number to enable cross-reference to the construction noise and vibration reports contained in Volume 5: Appendix SV-002-0MA05.

The figure series also shows locations at which baseline sound measurements were carried out.
These baseline measurement locations are labelled with a reference number to enable cross-reference to the baseline sound reports contained in Volume 5: Appendix SV-002-0MA05.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

A more detailed explanation of each legend item included on the figures can be found in the data dictionary.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-03-INDEX-MA05

Map Name: Index Map of: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA05: Risley to Bamfurlong

Scale at A3: 1:100,000

0 1,000 2,000 3,000 4,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002087-P01

Date: 06/09/21

HS2 (rail only) noise level $L_{pAeq,T}$		Potential noise effect[1, 2]	
Night-time $L_{pAeq,T}$ (T=23:00 to 07:00)	Daytime $L_{pAeq,T}$ (T=07:00 to 23:00)	**Residential**	**Non-residential & quiet areas**
> 55 dB	> 65 dB	Likely significant effect on dwellings indicated by ◯, ✳ or ✕ avoided by noise insulation	Effect dependent on receptor and baseline. For further details see Volume 5, Appendix SV-003-0MA0X. Likely significant effect indicated by MA0X-O-N#[2]
40 to 55 dB	50 to 65 dB	Effect dependent on noise level change and significance criteria. Likely significant effects on groups of dwellings and any shared community open areas indicated by MA0X-O-C#[2]	
< 40 dB	< 50 dB	Generally no adverse effect expected[1]	

Operational airborne noise impacts at residential buildings[1]

- Major adverse
- Moderate adverse
- Minor adverse
- Negligible
- Beneficial

- ◯ Potential additional noise insulation (triggered by maximum noise levels at night)[1]
- ✳ Potential additional noise insulation (triggered by WHO Night Noise Guidelines Interim Target)[1]
- ✕ Potential noise insulation (triggered by Noise Insulation Regulations 1996)[1]
- ◯ L_{pAFmax} exceeds 60dB façade HS2 train only L_{pAFmax} +2.5dB façade correction

▭ Ground-borne noise or vibration impact at residential buildings

[1] For further information see Volume 5 Appendix SV-001-00000
[2] For details see relevant Volume 5 Appendix SV-003-0MA0X

SV-02 - Legend

Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Doc Number: -

Date:

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For SNV effects symbology please refer to SV-02 - Legend page

BROOMEDGE TO GLAZEBROOK

WARRINGTON BOROUGH

TRAFFORD METROPOLITAN BOROUGH

SALFORD CITY

Lane End

Ash Tree Farm

Brook Farm

Omrod Farm

Warburton

Warburton Park Farm

Hollins Green

Hollinfare

Bridge Farm

Beechfield Farm

Glazebrook

Brush Farm

Church Farm

Moss Farm

Mount Pleasant Farm

Millbank Hall Farm

Partington

Cadishead

Great Woolden Hall Farm

Manchester Ship Canal Viaduct

Glazebrook (Railway) Viaduct

MA04-O-C4

ML712720 ML712721 ML712729 ML712730 ML712734 ML712735 ML712756 ML712759 ML712801 ML712718

MA04/105 MA04/112 MA04/121

286+000 287+000 288+000 289+000

Up to 2m

WARBURTON BRIDGE ROAD · CHAPEL LANE · MOSS SIDE LANE · SCHOOL LANE · WIGSEE LANE · PARK ROAD · A57 MANCHESTER ROAD · BIRCH ROAD · SCHOOL LANE · DAM LANE · MOSS LANE · WOOD LANE · LOCK LANE · LAUREL WALK · TULIP ROAD · A6144 WARBURTON LANE · REDBROOK ROAD · WOOD LANE · A57 CADISHEAD WAY · VICTORY ROAD · HAIG AVENUE · KITCHENER AVENUE · LIVERPOOL ROAD · ALLENBY ROAD · DUDLEY ROAD · CUMBERLAND AVENUE · LORD'S STREET · BUCKINGHAM ROAD · BANK STREET · B5212 GLAZEBROOK LANE · CARLTON WAY · FLIXTON ROAD

For continuation refer to map number SV-02-313

For continuation refer to map number SV-02-315

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-314b

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Community Area MA05: Risley to Bamfurlong

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002018-P01

Date: 10/08/21

BROOMEDGE TO GLAZEBROOK

WARRINGTON BOROUGH

TRAFFORD METROPOLITAN BOROUGH

SALFORD CITY

Lane End
Brook Farm
Ash Tree Farm
Omrod Farm
Bridge Farm
Beechfield Farm
Hollins Green
Warburton
Warburton Park Farm
Hollinfare
Partington
Millbank Hall Farm
Mount Pleasant Farm
Brush Farm
Glazebrook
Church Farm
Moss Farm
Great Woolden Hall Farm
Cadishead

WIGSEY LANE
CHAPEL LANE
MOSS SIDE LANE
WARBURTON BRIDGE ROAD
SCHOOL LANE
A57 MANCHESTER ROAD
PARK ROAD
BIRCH ROAD
SCHOOL LANE
MOSS LANE
DAM LANE
OAK ROAD
WOOD LANE
LAUREL WALK
TULIP ROAD
REDBROOK ROAD
A6144 WARBURTON LANE
WALNUT ROAD
LOCK LANE
A57 CADISHEAD WAY
VICTORY ROAD
HAIG AVENUE
KITCHENER AVENUE
LIVERPOOL ROAD
ALLENBY ROAD
DUDLEY ROAD
CUMBERLAND AVENUE
LORD'S STREET
BUCKINGHAM ROAD
CARLTON WAY
BANK STREET
A57
B5212 GLAZEBROOK LANE
OAKHEAD LANE

Manchester Ship Canal Viaduct
Glazebrook (Railway) Viaduct

MA04-C-N1
MA04-C-N2
MA04-C-C3
MA04-C-N3
MA04-C-N4

286+000
287+000
288+000
289+000

MA04/105
MA04/112
MA04/121

ML712720
ML712721
ML712729
ML712730
ML712734
ML712735
ML712756
ML712759
ML712801
ML712718

For continuation refer to map number SV-03-313
For continuation refer to map number SV-03-315

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

- Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA05) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA05-C-C# and MA05-C-N#, respectively.

Map Number: SV-03-314b

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA05: Risley to Bamfurlong

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002065-P01

Date: 06/09/21

For SNV effects symbology please refer to SV-02 - Legend page

BROOMEDGE TO GLAZEBROOK

RISLEY TO BAMFURLONG

HS2

SALFORD CITY

WARRINGTON BOROUGH

Risley

Gorse Covert

Omrod Farm

Beechfield Farm

Hoyle's Moss Farm

Church Farm

Ratcliffe House Farm

Frank's Farm

Bates Farm

Yew Tree Farm

New Hall Farm

Culcheth

SCHOOL LANE

MOSS LANE

ROCKINGHAM CLOSE

FALSTONE CLOSE

GORSE COVERT ROAD

INGLEWOOD CLOSE

SILVER LANE

A574 BIRCHWOOD WAY

LEACROFT ROAD

M62

NEWTON LANE

NEW CHURCH LANE

NEW HALL LANE

SEVERN ROAD

THAMES ROAD

MEDWAY ROAD

BENT LANE

YORK AVENUE

BROADHURST AVENUE

HAMPSON AVENUE

CHURCH LANE

WALTON ROAD

A574 WARRINGTON ROAD

WITHINGTON AVENUE

CULCHETH HALL DRIVE

B5212 HOLCROFT LANE

M62 West Viaduct

289+000

290+000

291+000

292+000

For continuation refer to map number SV-02-314b

For continuation refer to map number SV-02-316

ML712717

ML712760

ML712768

ML712738

ML712736

617637 618067 618218 617643 617646 617647 618248 618247 617649 618209 617978 617652 618249 618015 618110 618221 618035 617655 617699 617706 617695 617686 618253 617990 618252 617672 617682 617702 617666 617680 617661 617674 617676 617662 617663 617675 618251 618008 617689 618011 617692 617657 617650 617642 617645 617651 618250

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-315

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Community Area MA05: Risley to Bamfurlong

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002019-P01

Date: 10/08/21

BROOMEDGE TO GLAZEBROOK

RISLEY TO BAMFURLONG

HS2

SALFORD CITY

Omrod Farm

Beechfield Farm

Hoyle's Moss Farm

Church Farm

Gorse Covert

Risley

Bates Farm

Yew Tree Farm

New Hall Farm

Culcheth

Ratcliffe House Farm

Frank's Farm

WARRINGTON BOROUGH

M62 West Viaduct

SCHOOL LANE

MOSS LANE

SILVER LANE

GORSE COVERT ROAD

ROCKINGHAM CLOSE

FALSTONE CLOSE

INGLEWOOD CLOSE

A574 BIRCHWOOD WAY

LEACROFT ROAD

M62

WARRINGTON ROAD

NEW HALL LANE

NEW CHURCH LANE

YORK AVENUE

SEVERN ROAD

THAMES ROAD

HOWARD ROAD

MEDWAY ROAD

HAMPSON AVENUE

CHURCH LANE

BENT LANE

WALTON ROAD

WITHINGTON AVENUE

CULCHETH HALL DRIVE

A574 WARRINGTON ROAD

B5212 HOLCROFT LANE

For continuation refer to map number SV-03-314b

For continuation refer to map number SV-03-316

289+000

290+000

291+000

292+000

MA05-C-C1

MA05-C-N2

MA05-C-N1

MA05-C-C3

ML712717

ML712760

ML712768

ML712738

ML712736

617637 618218 618007 617643 618009 617647 618248 618247 617649 618209 617978 617652 618015 618249 617646 618224 618110 618035 617655 617699 617706 617686 617695 618253 618252 617672 617682 617702 617990 617666 617680 617661 617674 617662 617675 617676 617663 617689 618251 618008 618011 617692 617657 617650 617645 617642 617989

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks: Embankment, Cutting

Non engineering earthworks: Embankment, Cutting

Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA05) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA05-C-C# and MA05-C-N#, respectively.

Map Number: SV-03-315

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

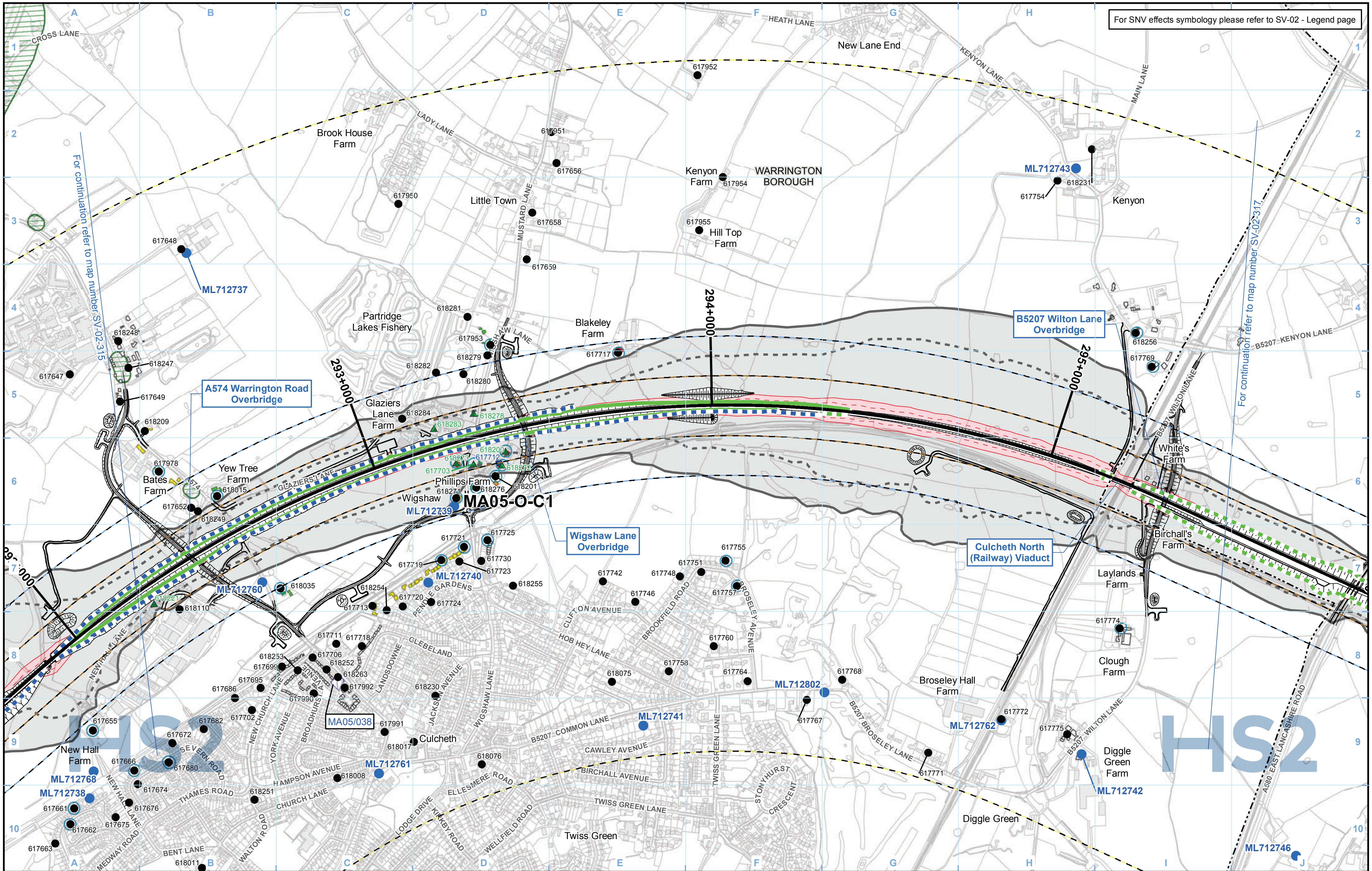
Community Area MA05: Risley to Bamfurlong

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002066-P01

Date: 06/09/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:

- Embankment
- Cutting

Non engineering earthworks:

- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:

- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:

- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area

- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-316

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Community Area MA05: Risley to Bamfurlong

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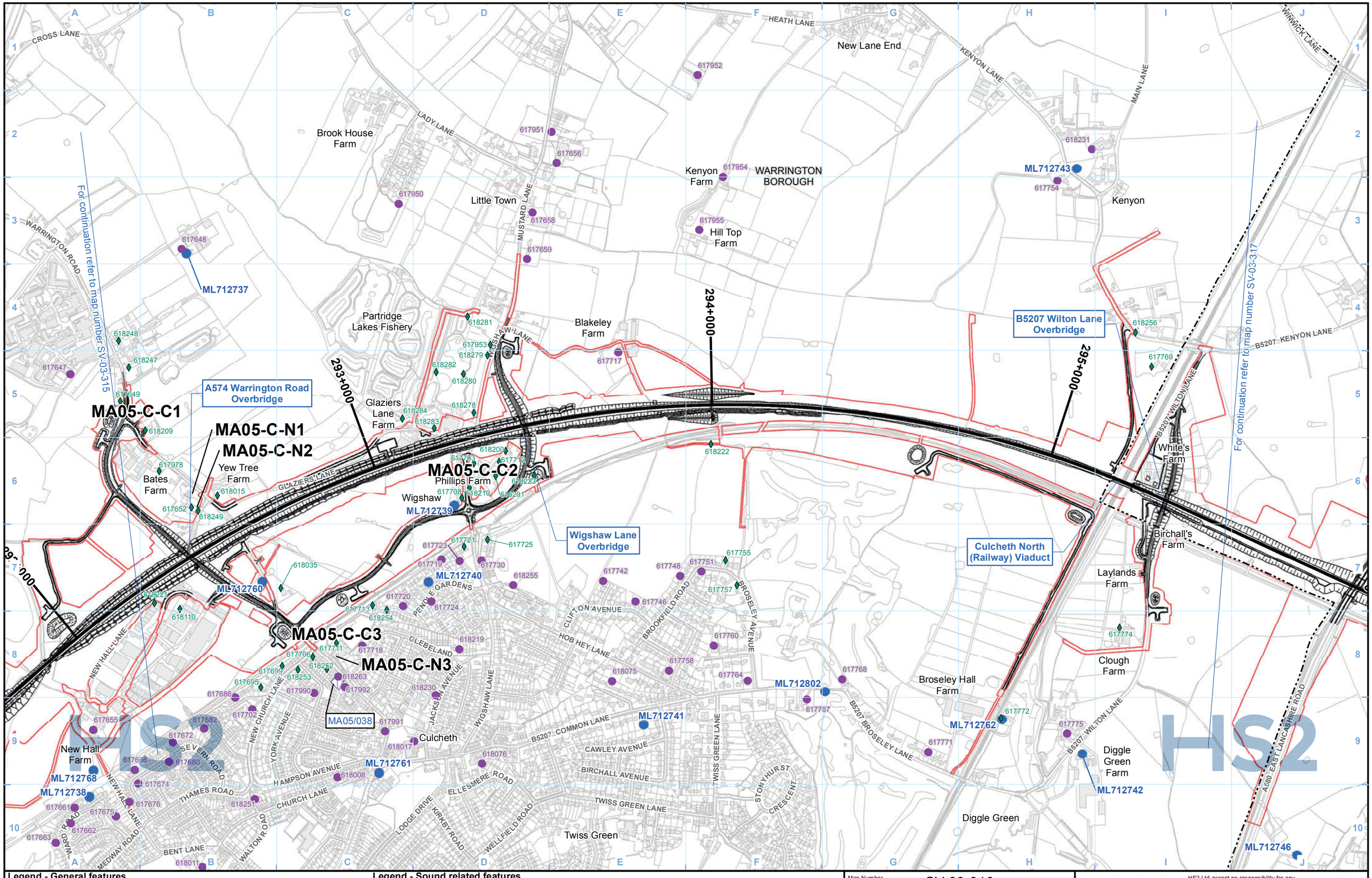
Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002020-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

- Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA05) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA05-C-C# and MA05-C-N#, respectively.

Map Number: SV-03-316

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

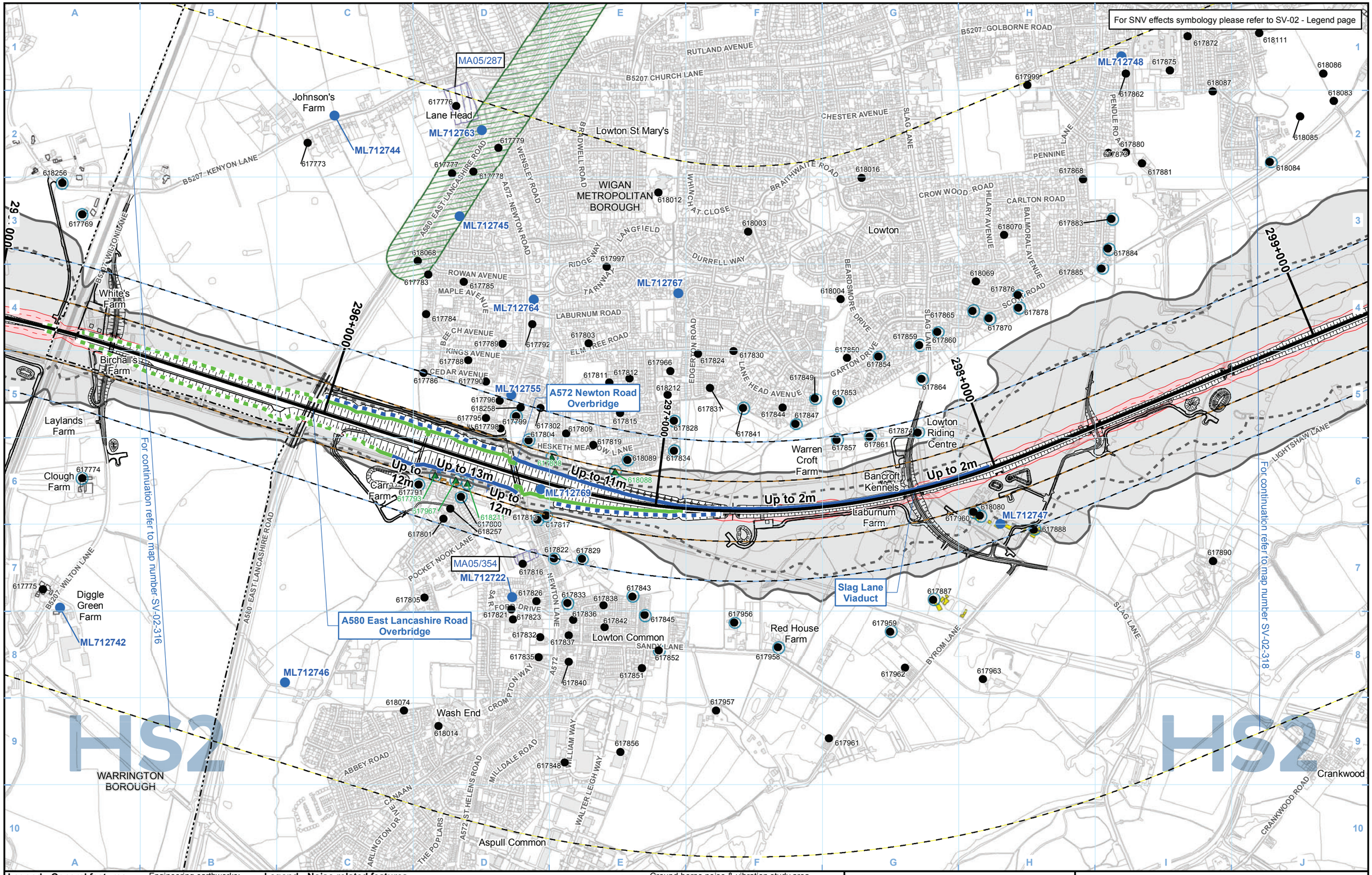
Community Area MA05: Risley to Bamfurlong

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002067-P01

Date: 06/09/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:

- Embankment
- Cutting

Non engineering earthworks:

- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:

- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:

- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-317

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

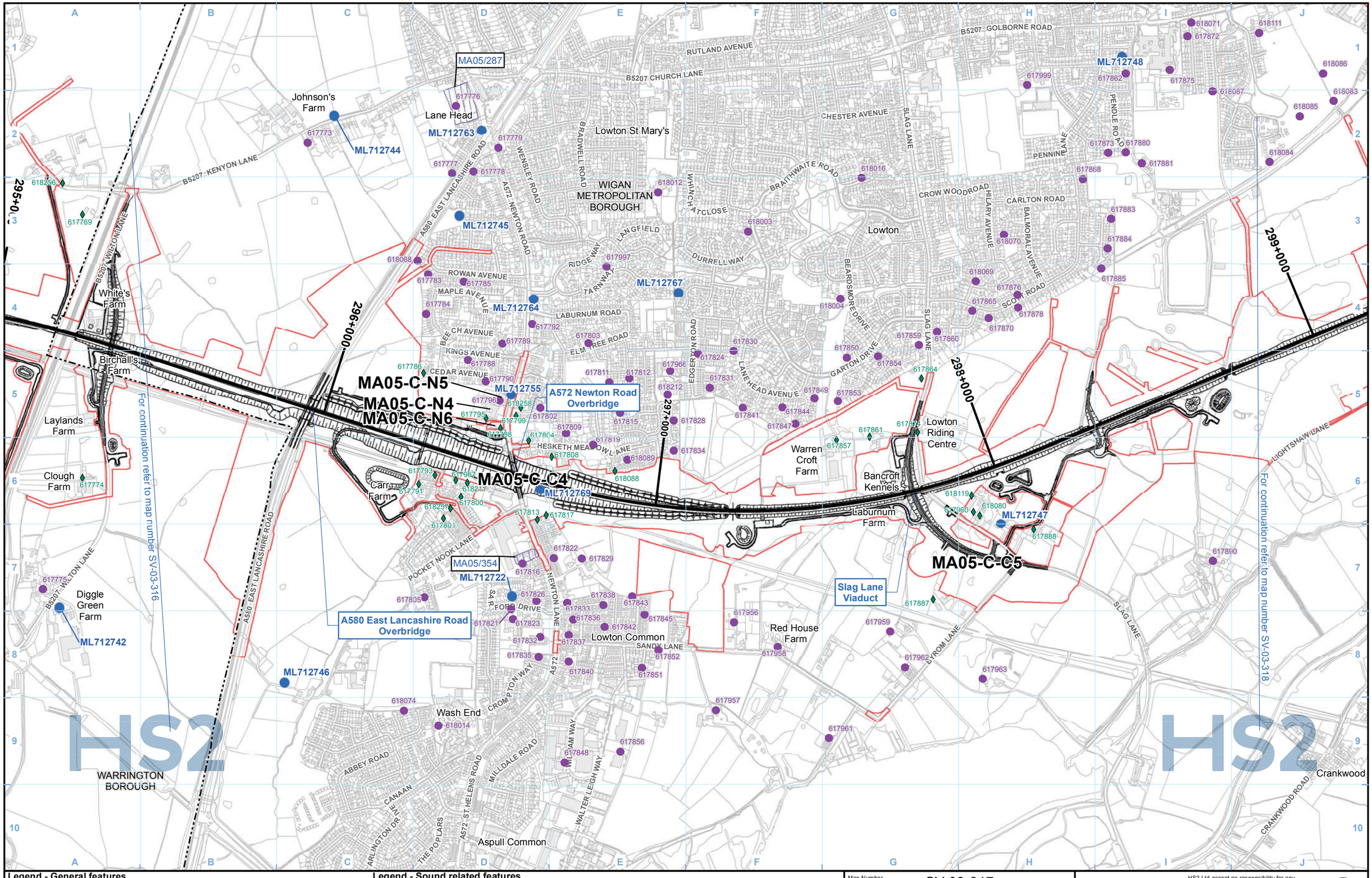
Community Area MA05: Risley to Bamfurlong

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002021-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks: Embankment, Cutting

Non engineering earthworks: Embankment, Cutting

Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA05) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA05-C-C# and MA05-C-N#, respectively.

Map Number: SV-03-317

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA05: Risley to Bamfurlong

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002068-P01

Date: 06/09/21

For SNV effects symbology please refer to SV-02 - Legend page

GOLBORNE
COTTESMORE WAY
CHURCH STREET
MAY STREET
B5207 ASHTON ROAD
DAM LANE
EDGE GREEN ROAD
AVON ROAD
SEVERN ROAD
RIDING LANE
A58 BOLTON ROAD
LOCKER LANE
PENDLE ROAD
Stack House Farm
Wigan Road Farm
A573 WIGAN ROAD
Balmer's Farm
Windy Bank Farm
Aye Bridge Farm
A573 AYE BRIDGE ROAD
WIGAN METROPOLITAN BOROUGH
Bryn Gates
WINTBURY STREET
A58 LIVERPOOL ROAD
Bamfurlong
Lightshaw Hall
LIGHTSHAW LANE
Hey Brook Farm
SLAG LANE
CRANKWOOD ROAD
GREENBANK
PARKFIELDS
ELM ROAD
OAK AVENUE
ASHWOOD AVENUE
KINGSDOWN ROAD
PARK LANE
HOLCROFT DRIVE
DAVY ROAD
Abram
RYDAL PLACE
WARRINGTON ROAD
VICARAGE ROAD
LEE LANE
PARK VIEW
SIMPKIN STREET
BICKERSHAW LANE
B5237
Platt Bridge
TRAM STREET
A58 LILY LANE

ML712731
ML712724
ML712748
ML712765
ML712725
ML712749
ML712751
ML712723
ML712757
ML712732
ML712758
ML712750
ML712726

A573 Wigan Road Viaducts
Connection To WCML
MA05/307

299+000
300+000
301+000

618071 617872 617875 617862 618111 618259 617886 618086 618087 618083 617889 618085 617873 617881 617880 618084 617892 617883 617884 617885 617891 617896 617894 617900 618010 617901 617903 617902 617973 617904 617971 617906 617905 617915 617909 617914 617918 617916 617910 618260 618261 617898 618082 618013 617897 617987 617899 617986 617984 617908 617913 617968 617969 617983 618072 618073 617923 617925 617922 617970 617920 617919 617924 617890 617985

For continuation refer to map number SV-02-317
For continuation refer to map number SV-02-318-C1

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-318

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Community Area MA05: Risley to Bamfurlong

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002022-P01

Date: 10/08/21

MA05-C-C7

GOLBORNE

MA05-C-C6

WIGAN METROPOLITAN BOROUGH

Abram

Platt Bridge

Bamfurlong

Stack House Farm

Wigan Road Farm

Balmer's Farm

Windy Bank Farm

Aye Bridge Farm

Locker Lane Farm

Bryn Gates

Lightshaw Hall

Hey Brook Farm

A573 Wigan Road Viaducts

Connection To WCML

MA05/307

ML712724

ML712731

ML712748

ML712765

ML712749

ML712725

ML712751

ML712723

ML712757

ML712732

ML712758

ML712726

ML712750

299+000

300+000

301+000

For continuation refer to map number SV-03-317

For continuation refer to map number SV-03-318-C1

B5207 ASHTON ROAD

DAM LANE

EDGE GREEN ROAD

SEVERN ROAD

AVON ROAD

COFFIN LANE

A58 BOLTON ROAD

RIDING LANE

LOCKER LANE

COTTES MORE WAY

CHURCH STREET

MAY STREET

PENDLE ROAD

A573 WIGAN ROAD

A573 AYE BRIDGE ROAD

KNITBURY STREET

A58 LILY LANE

LIGHTSHAW LANE

SLAG LANE

CRANKWOOD ROAD

GREENBANK

PARKFIELDS

ELM ROAD

OAK AVENUE

ASHWOOD AVENUE

KINGSDOWN ROAD

PARK LANE

HOLCROFT DRIVE

DAVY ROAD

A573 WARRINGTON ROAD

RYDAL PLACE

VICARAGE ROAD

LEE LANE

PARK VIEW

RUSKIN CRESCENT

SIMPKIN STREET

B5237 BICKERSHAW LANE

TRAM STREET

618136 617886 618071 617872 618111 618259 617889 618086 617875 617862 618087 618083 618085 618084 617873 617880 617881 617883 617884 617885 617892 618081 618120 617895 618124 617891 618225 618226 618121 618142 618143 617890 617896 617894 617900 618010 617901 617903 617902 617904 617973 617971 617906 617905 617909 617915 617914 617918 617910 618260 617916 618122 618261 618123 617898 618141 618082 618013 617897 617899 617987 617986 617984 617913 617908 617968 617969 618072 617983 618073 617923 617970 617920 617919 617924

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks: Embankment, Cutting

Non engineering earthworks: Embankment, Cutting

Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA05) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA05-C-C# and MA05-C-N#, respectively.

Map Number: SV-03-318

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA05: Risley to Bamfurlong

HS2

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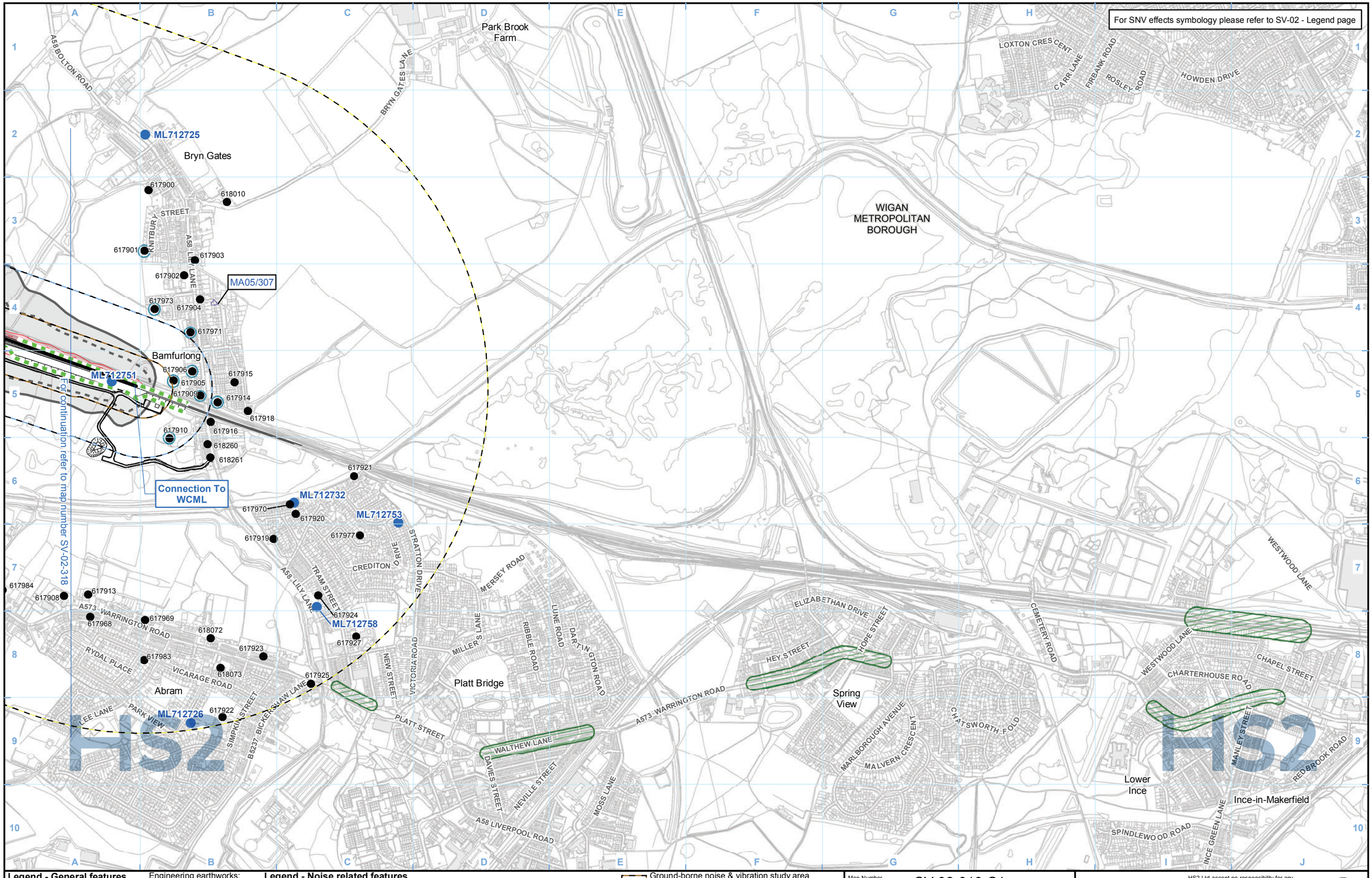
Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002069-P01

Date: 06/09/21

For SNV effects symbology please refer to SV-02 - Legend page



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-318-C1

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

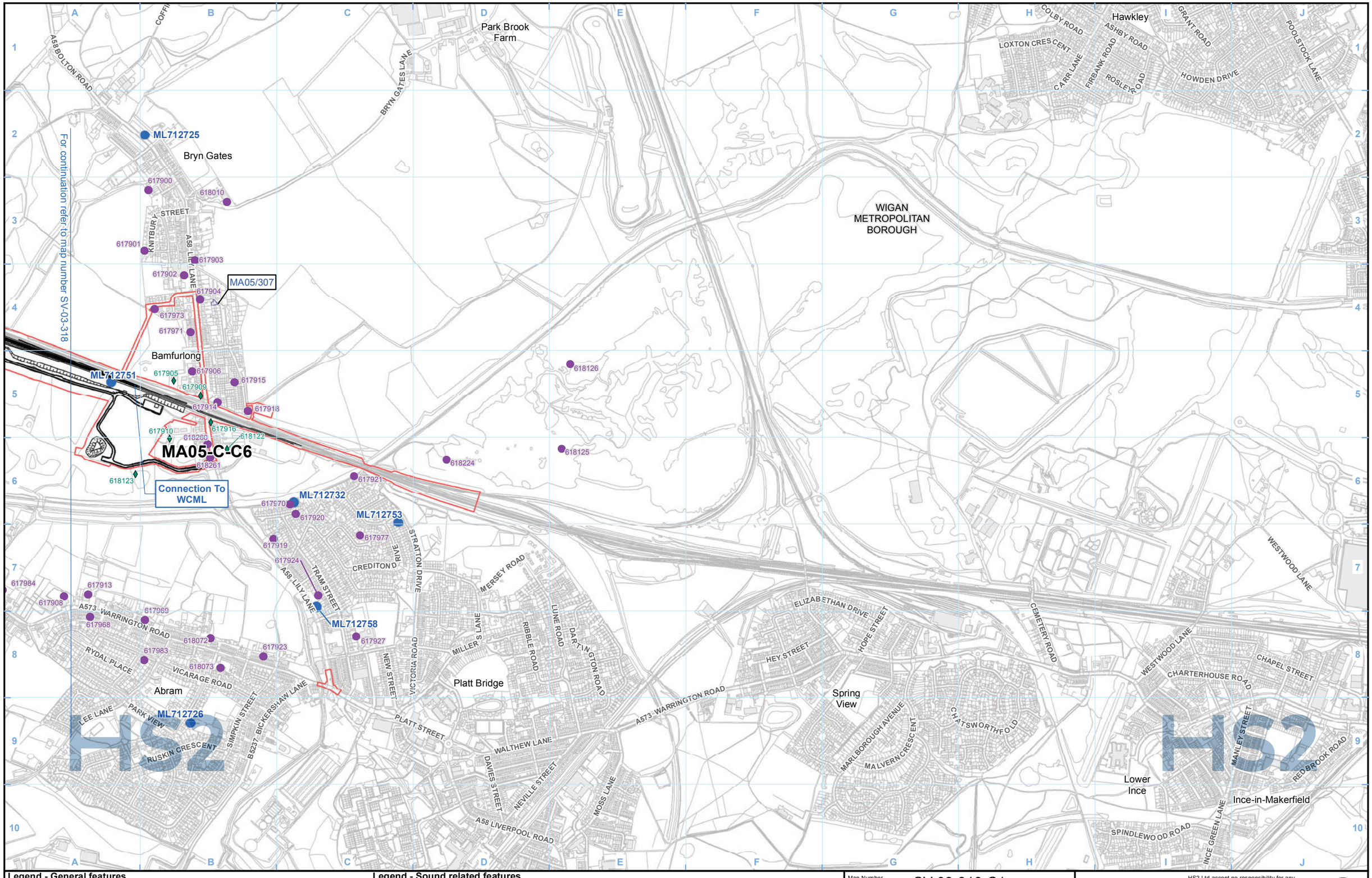
Community Area MA05: Risley to Bamfurlong

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002023-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks: Embankment; Cutting

Non engineering earthworks: Embankment; Cutting

Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA05) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA05-C-C# and MA05-C-N#, respectively.

Map Number: SV-03-318-C1

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA05: Risley to Bamfurlong

Registered in England. Registration number 06791686. Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

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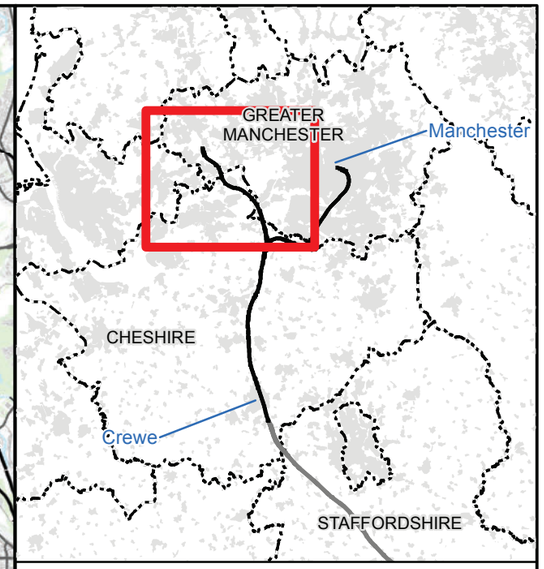
Doc Number: 2DE01-MWJ-EV-MAP-M000-002585-P01

Date: 06/09/21



Map Series Information:

SV-08 presents the predicted daytime operational sound from the new railway.

The sound levels from the new railway (expressed as $_{LpAeq,T}$) are presented in typical noise mapping colours in 5 dB steps. There is a panel at the top right of the figure; this panel contains a key communicating the daytime sound levels represented by the various colours. A corresponding and similar panel is found on SV-02 and SV-09, along with the key sound contours that were used within the environmental assessment.

Also presented on SV-08 are the following (which are also included on SV-02):

• A representation of the Proposed Scheme, including the railway alignment (indicating whether it is on the surface or in tunnel), any new and altered roads and all associated engineering and environmental mitigation earthworks;

• blue and green lines representing the wayside airborne noise mitigation measures included in the Proposed Scheme;

• the extent of the study area within which the direct impacts and effects of the scheme have been quantitatively assessed.

A more detailed explanation of each legend item included on the figures can be found in the data dictionary.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-08-INDEX-MA05

Map Name: Index Map of: Daytime Operational Sound Contour Maps

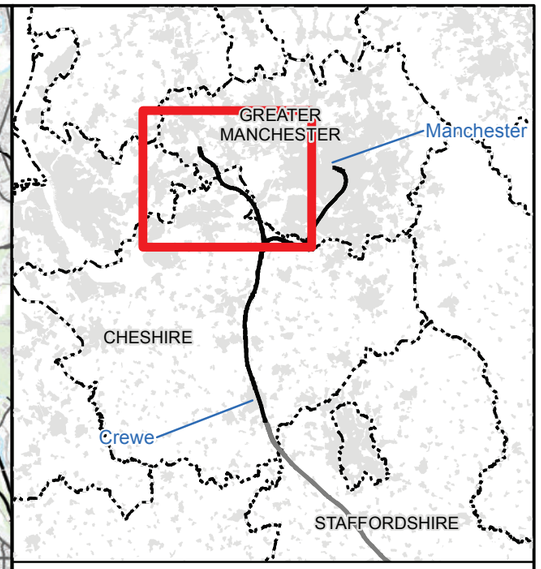
Community Area MA05: Risley to Bamfurlong

Scale at A3: 1:100,000

0 1,000 2,000 3,000 4,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003076-P01

Date: 06/09/21



Map Series Information:

SV-09 presents the predicted night-time operational sound from the new railway.

The sound levels from the new railway (expressed as $_{LpAeq,T}$) are presented in typical noise mapping colours in 5 dB steps. There is a panel at the top right of the figure; this panel contains a key communicating the night-time sound levels represented by the various colours. A corresponding and similar panel is found on SV-02 and SV-08, along with the key sound contours that were used within the environmental assessment.

Also presented on SV-09 are the following (which are also included on SV-02):

• A representation of the Proposed Scheme, including the railway alignment (indicating whether it is on the surface or in tunnel), any new and altered roads and all associated engineering and environmental mitigation earthworks;

• blue and green lines representing the wayside airborne noise mitigation measures included in the Proposed Scheme;

• the extent of the study area within which the direct impacts and effects of the scheme have been quantitatively assessed.

A more detailed explanation of each legend item included on the figures can be found in the data dictionary.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-09-INDEX-MA05

Map Name: Index Map of: Night-time Operational Sound Contour Maps

Community Area MA05: Risley to Bamfurlong

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Scale at A3: 1:100,000

0 1,000 2,000 3,000 4,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003117-P01

Date: 06/09/21

BROOMEDGE TO GLAZEBROOK

HS2 (rail only) sound level $L_{pAeq,T}$

Daytime $L_{pAeq,T}$ (T=07:00 to 23:00)
> 70 dB
65 to 70 dB
60 to 65 dB
55 to 60 dB
50 to 55 dB
< 50 dB

Up to 2m

Up to 2m

Up to 2m

Up to 2m

286+000

287+000

288+000

289+000

Glazebrook (Railway) Viaduct

Manchester Ship Canal Viaduct

For continuation refer to map number SV-08-313

For continuation refer to map number SV-08-315

Warburton

Warburton Park Farm

Lane End

Brook Farm

Ash Tree Farm

Omrod Farm

Hollins Green

WARRINGTON BOROUGH

Bridge Farm

Beechfield Farm

Hollinfare

Mount Pleasant Farm

Millbank Hall Farm

Church Farm

Moss Farm

Partington

TRAFFORD METROPOLITAN BOROUGH

Cadishead

Brush Farm

Glazebrook

SALFORD CITY

Great Woolden Hall Farm

WIGSEY LANE

PARK ROAD

WARBURTON BRIDGE ROAD

CHAPEL LANE

MOSS SIDE LANE

A57 MANCHESTER ROAD

SCHOOL LANE

BIRCH ROAD

MOSS LANE

DAM LANE

DAMHEAD LANE

BANK STREET

A57 CADISHEAD WAY

VICTORY ROAD

HAIG AVENUE

KITCHENER AVENUE

LIVERPOOL ROAD

ALLENBY ROAD

DUDLEY ROAD

CUMBERLAND AVENUE

LORD'S STREET

BUCKINGHAM ROAD

B5212 GLAZEBROOK LANE

CARLTON WAY

OAK ROAD

WOOD LANE

WALNUT ROAD

LOCK LANE

LAUREL WALK

TULIP ROAD

REDBROOK ROAD

A6144 WARBURTON LANE

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-08-314b

Map Name: Daytime Operational Sound Contour Maps

Community Area MA05: Risley to Bamfurlong

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003097-P01

Date: 10/08/21

BROOMEDGE TO GLAZEBROOK

HS2 (rail only) sound level $L_{pAeq,T}$

Night-time $L_{pAeq,T}$ (T=23:00 to 07:00)

- > 60 dB
- 55 to 60 dB
- 50 to 55 dB
- 45 to 50 dB
- 40 to 45 dB
- < 40 dB

Lane End
Ash Tree Farm
Brook Farm
Omrod Farm
Warburton
Warburton Park Farm
Hollins Green
WARRINGTON BOROUGH
Bridge Farm
Beechfield Farm
Glazebrook (Railway) Viaduct
286+000
287+000
288+000
289+000
Hollinfare
Up to 2m
Up to 2m
Up to 2m
Up to 2m
Church Farm
Moss Farm
Mount Pleasant Farm
Millbank Hall Farm
Manchester Ship Canal Viaduct
Partington
TRAFFORD METROPOLITAN BOROUGH
Brush Farm
Glazebrook
Cadishead
SALFORD CITY
Great Woolden Hall Farm
For continuation refer to map number SV-09-313
For continuation refer to map number SV-09-315
WIGSEY LANE
WARBURTON BRIDGE ROAD
CHAPEL LANE
MOSS SIDE LANE
PARK ROAD
A57 MANCHESTER ROAD
SCHOOL LANE
BIRCH ROAD
MOSS LANE
DAM LANE
OAK ROAD
WOOD LANE
LOCK LANE
WALNUT ROAD
LAUREL WALK
TULIP ROAD
REDBROOK ROAD
A6144 WARBURTON LANE
A57 CADISHEAD WAY
VICTORY ROAD
HAIG AVENUE
KITCHENER AVENUE
LIVERPOOL ROAD
ALLENBY ROAD
DUDLEY ROAD
CUMBERLAND AVENUE
BANK STREET
DAMHEAD LANE
B5212 GLAZEBROOK LANE
CARLTON WAY
LORD'S STREET
BUCKINGHAM ROAD

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-09-314b

Map Name: Night-time Operational Sound Contour Maps

Community Area MA05: Risley to Bamfurlong

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003138-P01

Date: 10/08/21

BROOMEDGE TO GLAZEBROOK

RISLEY TO BAMFURLONG

HS2

HS2

HS2 (rail only) sound level $L_{pAeq,T}$

Daytime $L_{pAeq,T}$ (T=07:00 to 23:00)
> 70 dB
65 to 70 dB
60 to 65 dB
55 to 60 dB
50 to 55 dB
< 50 dB

Risley
Gorse Covert
ROCKINGHAM CLOSE
FALSTONE CLOSE
GORSE COVERT ROAD
INGLEWOOD CLOSE
A574 BIRCHWOOD WAY
LEACROFT ROAD
SILVER LANE
M62
Omrod Farm
SCHOOL LANE
Hoyle's Moss Farm
Beechfield Farm
MOSS LANE
WARRINGTON BOROUGH
SILVER LANE
289+000
290+000
291+000
292+000
M62 West Viaduct
Bates Farm
Yew Tree Farm
A574
NEW HALL LANE
A574 WARRINGTON ROAD
Church Farm
For continuation refer to map number SV-08-314b
For continuation refer to map number SV-08-316
New Hall Farm
HOWARD ROAD
NEW HALL LANE
SEVERN ROAD
NEW CHURCH LANE
YORK AVENUE
BROADHURST AVENUE
Culcheth
THAMES ROAD
HAMPSON AVENUE
MEDWAY ROAD
BENT LANE
CHURCH LANE
WALTON ROAD
Ratcliffe House Farm
BENT LANE
Frank's Farm
B5212 HOLCROFT LANE
M62
SALFORD CITY
A574 WARRINGTON ROAD
WITHINGTON AVENUE
CULCHETH HALL DRIVE

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-08-315

Map Name: Daytime Operational Sound Contour Maps

Community Area MA05: Risley to Bamfurlong

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003098-P01

Date: 10/08/21

BROOMEDGE TO GLAZEBROOK

RISLEY TO BAMFURLONG

HS2

HS2 (rail only) sound level $L_{pAeq,T}$
Night-time $L_{pAeq,T}$ (T=23:00 to 07:00)
> 60 dB
55 to 60 dB
50 to 55 dB
45 to 50 dB
40 to 45 dB
< 40 dB

Risley
Gorse Covert
Omrod Farm
Hoyle's Moss Farm
Beechfield Farm
WARRINGTON BOROUGH
Bates Farm
Yew Tree Farm
New Hall Farm
Culcheth
Ratcliffe House Farm
Frank's Farm
Church Farm
SALFORD CITY

SCHOOL LANE
MOSS LANE
ROCKINGHAM CLOSE
FALSTONE CLOSE
GORSE COVERT ROAD
INGLEWOOD CLOSE
SILVER LANE
A574 BIRCHWOOD WAY
LEACROFT ROAD
M62
NEW HALL LANE
A574 WARRINGTON ROAD
HOWARD ROAD
MEDWAY ROAD
SEVERN ROAD
THAMES ROAD
NEW CHURCH LANE
YORK AVENUE
BROADHURST AVENUE
HAMPSON AVENUE
CHURCH LANE
BENT LANE
WALTON ROAD
WITHINGTON AVENUE
CULCHETH HALL DRIVE
B5212 HOLCROFT LANE

289+000
290+000
291+000
292+000

M62 West Viaduct

For continuation refer to map number SV-09-314b

For continuation refer to map number SV-09-316

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-09-315

Map Name: Night-time Operational Sound Contour Maps

Community Area MA05: Risley to Bamfurlong

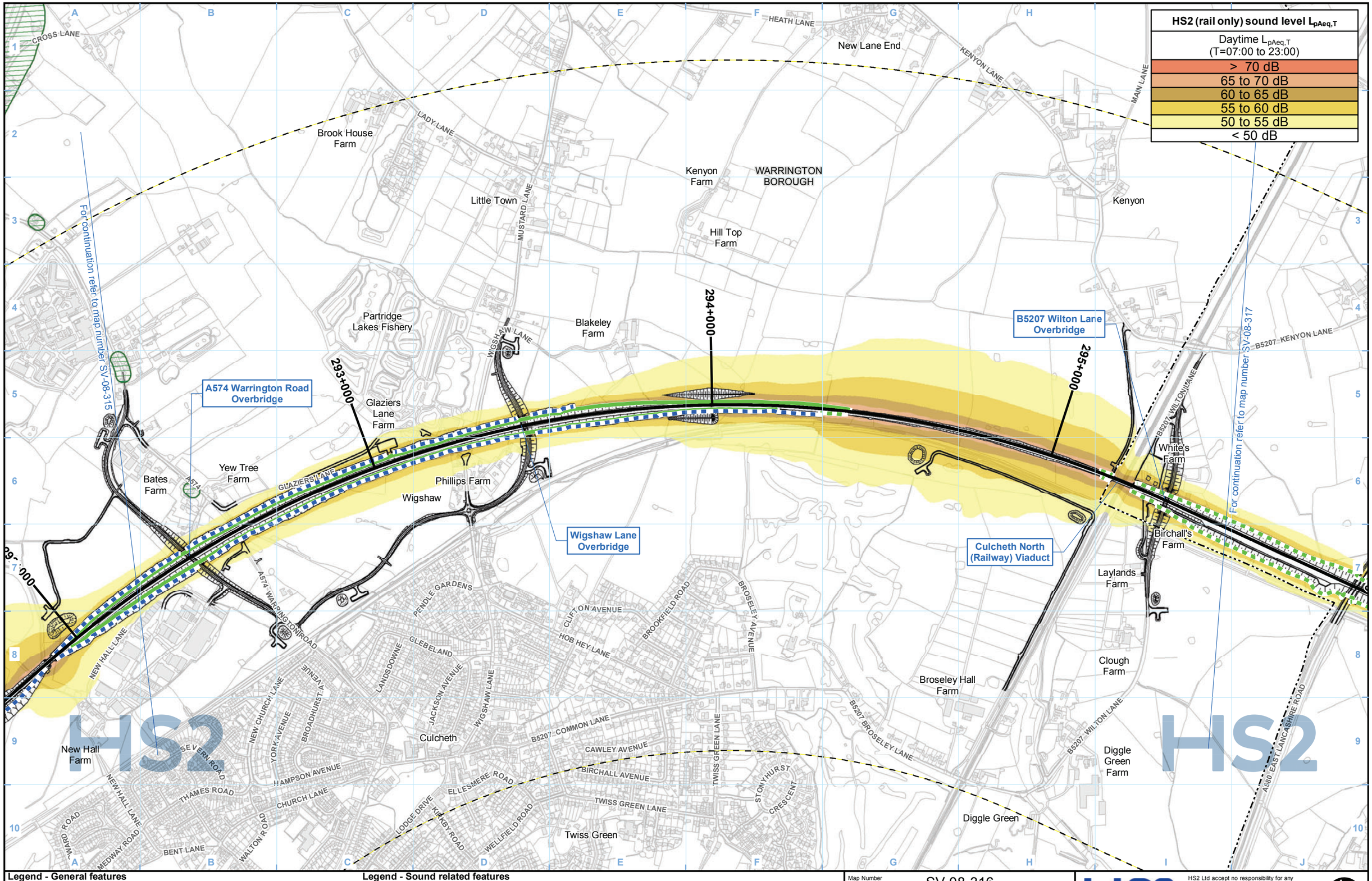
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003139-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-08-316

Map Name: Daytime Operational Sound Contour Maps

Community Area MA05: Risley to Bamfurlong

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003099-P01

Date: 10/08/21

HS2 (rail only) sound level $L_{pAeq,T}$

Night-time $L_{pAeq,T}$ (T=23:00 to 07:00)

- > 60 dB
- 55 to 60 dB
- 50 to 55 dB
- 45 to 50 dB
- 40 to 45 dB
- < 40 dB

CROSS LANE
HEATH LANE
New Lane End
KENYON LANE
MAIN LANE
Brook House Farm
LADY LANE
Kenyon Farm
WARRINGTON BOROUGH
Little Town
MUSTARD LANE
Kenyon
Hill Top Farm
For continuation refer to map number SV-09-315
Partridge Lakes Fishery
WIGSHAW LANE
Blakeley Farm
294+000
B5207 Wilton Lane Overbridge
295+000
B5207 KENYON LANE
For continuation refer to map number SV-09-317
293+000
A574 Warrington Road Overbridge
Glaziers Lane Farm
B5207 WILTON LANE
White's Farm
Yew Tree Farm
Bates Farm
A574
GLAZIERS LANE
Phillips Farm
Wigshaw
Wigshaw Lane Overbridge
Culcheth North (Railway) Viaduct
Birchall's Farm
Laylands Farm
PENDLE GARDENS
CLIFTON AVENUE
BROOKFIELD ROAD
BROSELEY AVENUE
HOB HEY LANE
CLEBELAND
LANDSDOWNE
JACKSON AVENUE
WIGSHAW LANE
NEW HALL LANE
A574 WARRINGTON ROAD
Clough Farm
Broseley Hall Farm
NEW CHURCH LANE
YORK AVENUE
BROADHURST AVENUE
B5207 COMMON LANE
B5207 BROSELEY LANE
B5207 WILTON LANE
Culcheth
CAWLEY AVENUE
BIRCHALL AVENUE
TWISS GREEN LANE
STONYHURST CRESCENT
Diggle Green Farm
New Hall Farm
SEVERN ROAD
HAMPSON AVENUE
ELLESMERE ROAD
THAMES ROAD
CHURCH LANE
LODGE DRIVE
KIRKBY ROAD
WELLFIELD ROAD
Diggle Green
A660 EAST LANCASHIRE ROAD
MEDWAY ROAD
BENT LANE
WALTON ROAD
Twiss Green

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-09-316

Map Name: Night-time Operational Sound Contour Maps

Community Area MA05: Risley to Bamfurlong

HS2

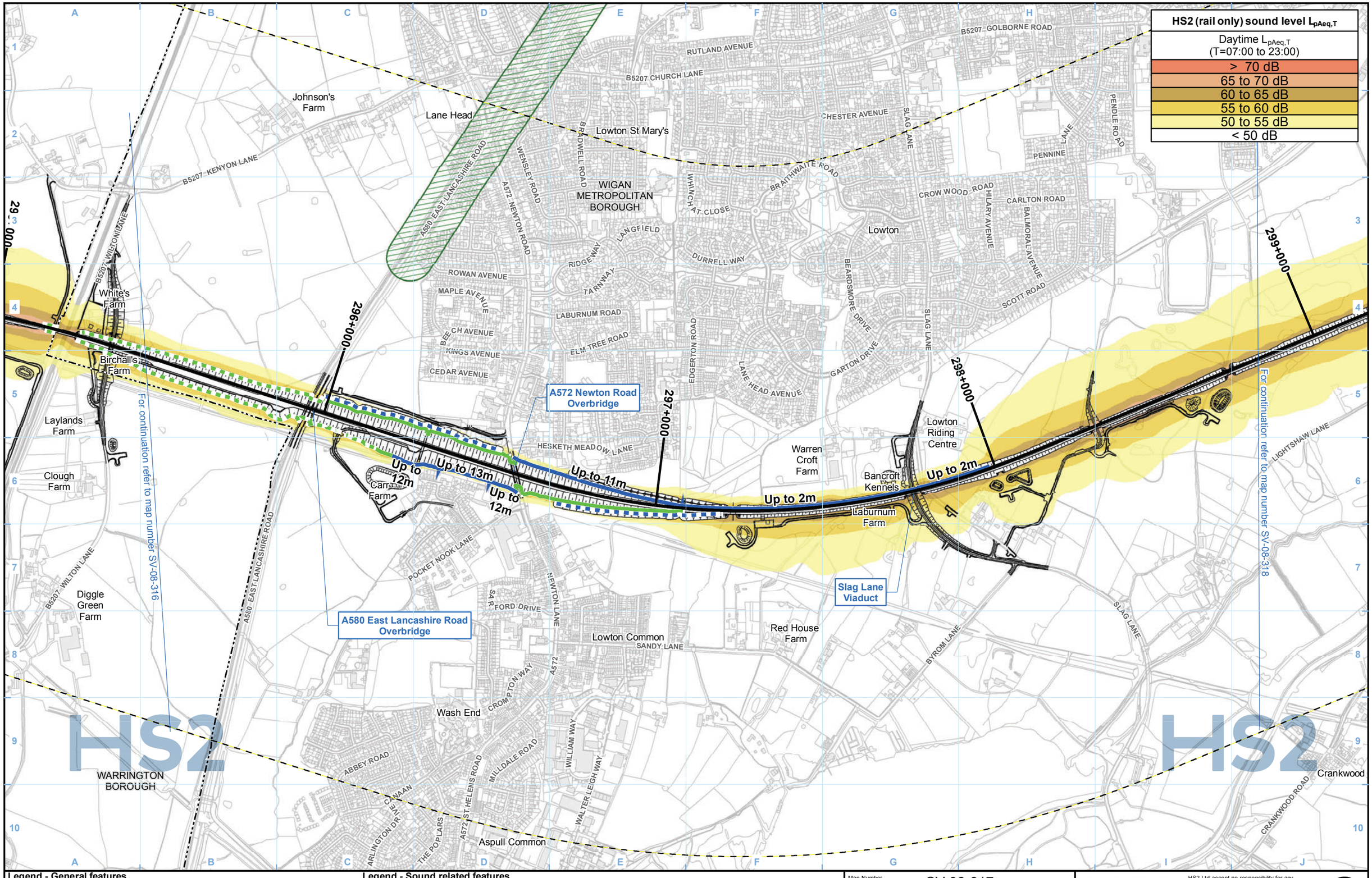
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003140-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-08-317

Map Name: Daytime Operational Sound Contour Maps

Community Area MA05: Risley to Bamfurlong

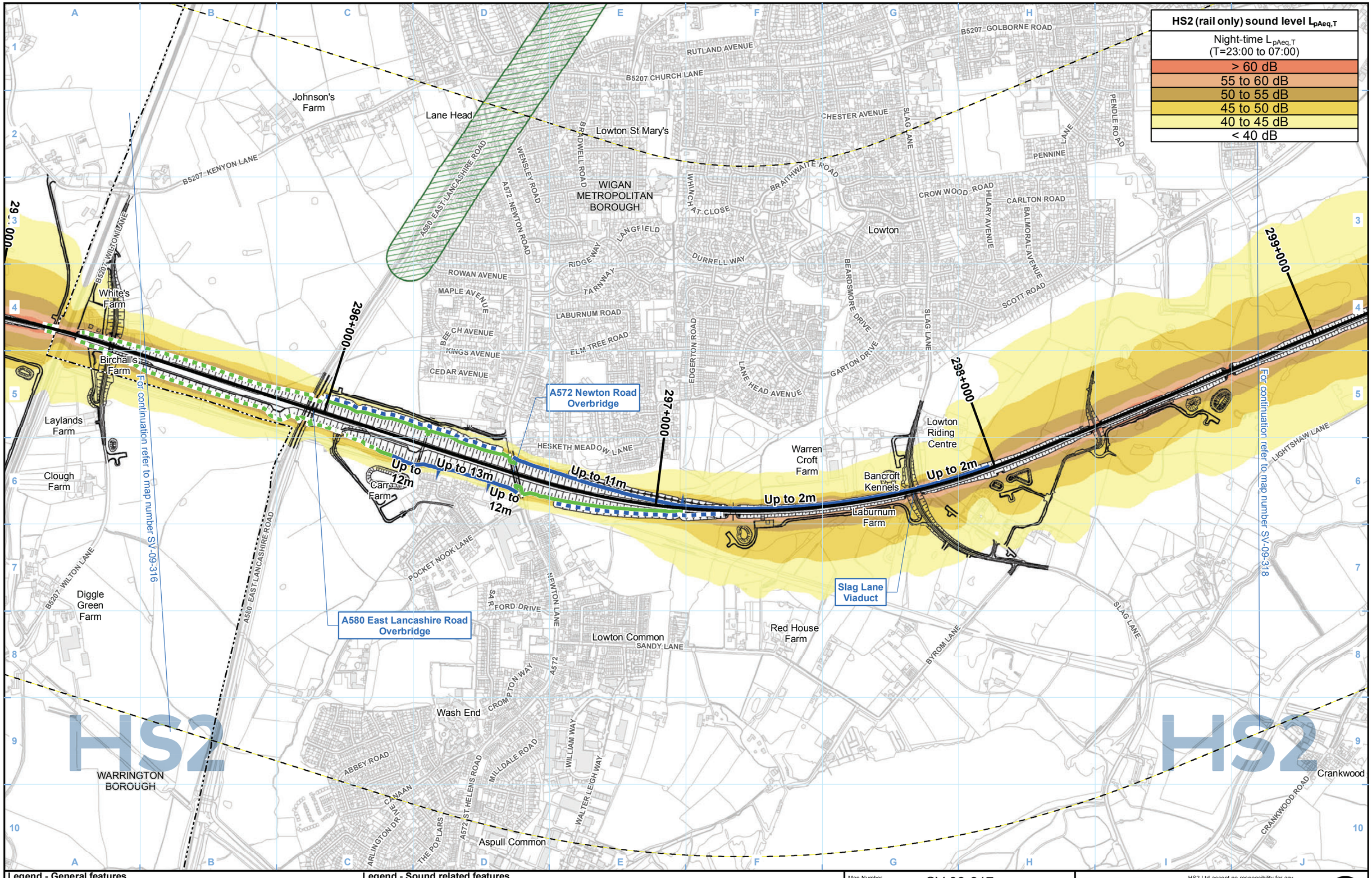
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003100-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-09-317

Map Name: Night-time Operational Sound Contour Maps

Community Area MA05: Risley to Bamfurlong

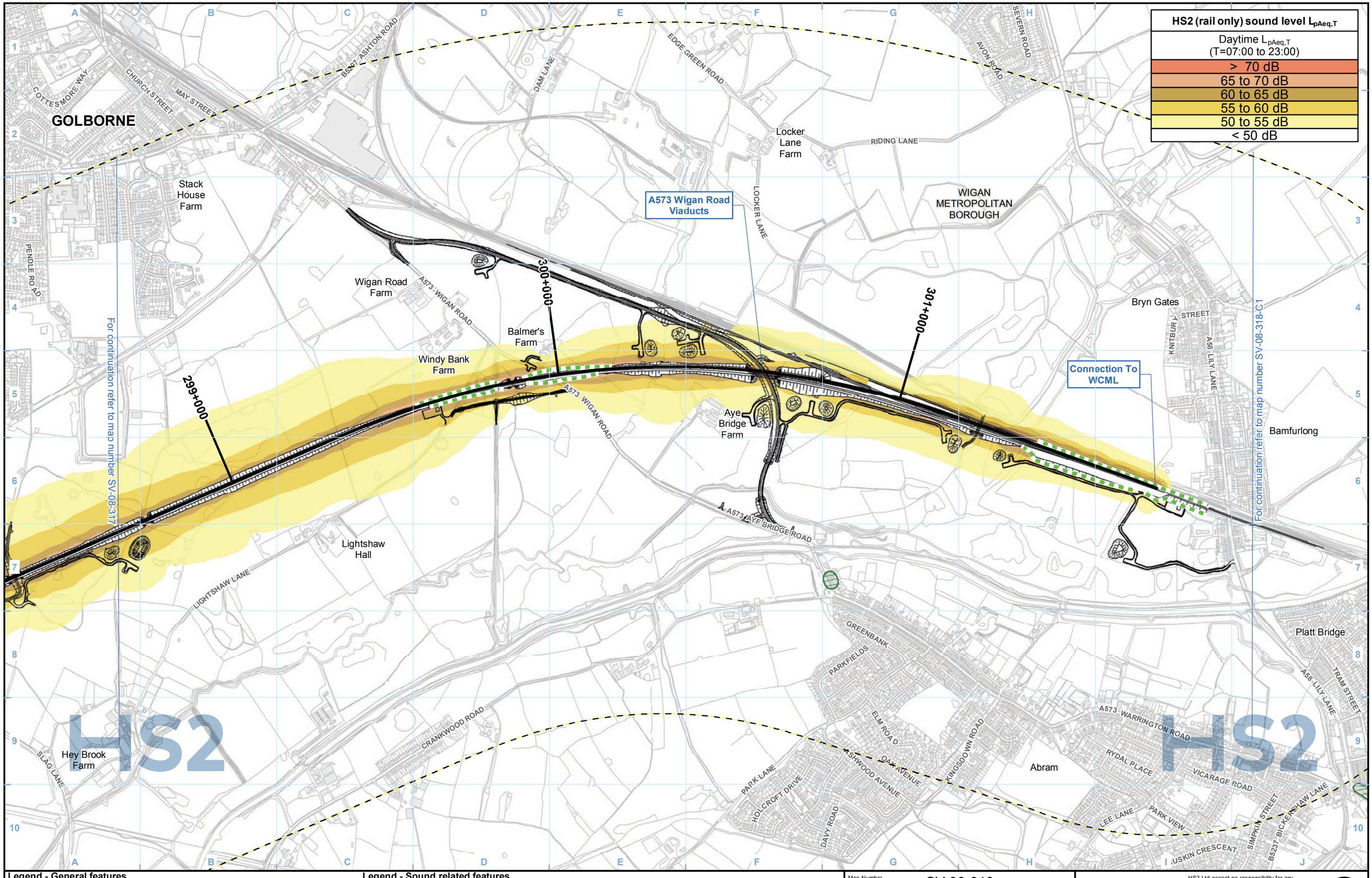
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003141-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-08-318

Map Name: Daytime Operational Sound Contour Maps

Community Area MA05: Risley to Bamfurlong

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003101-P01

Date: 10/08/21

HS2 (rail only) sound level $L_{pAeq,T}$

Night-time $L_{pAeq,T}$ (T=23:00 to 07:00)

- > 60 dB
- 55 to 60 dB
- 50 to 55 dB
- 45 to 50 dB
- 40 to 45 dB
- < 40 dB

GOLBORNE
COTTESMORE WAY
CHURCH STREET
MAY STREET
B5207 ASHTON ROAD
DAM LANE
EDGE GREEN ROAD
AVON ROAD
SEVERN ROAD
Stack House Farm
Locker Lane Farm
RIDING LANE
LOCKER LANE
A573 Wigan Road Viaducts
WIGAN METROPOLITAN BOROUGH
PENDLE ROAD
Wigan Road Farm
A573 WIGAN ROAD
300+000
301+000
Balmer's Farm
Windy Bank Farm
299+000
A573 WIGAN ROAD
Aye Bridge Farm
Connection To WCML
Bryn Gates
KNITBURY STREET
A58 LILY LANE
Bamfurlong
For continuation refer to map number SV-09-317
For continuation refer to map number SV-09-318-C1
A573 AYE BRIDGE ROAD
Lightshaw Hall
LIGHTSHAW LANE
GREENBANK
PARKFIELDS
ELM ROAD
OAK AVENUE
KINGSDOWN ROAD
ASHWOOD AVENUE
PARK LANE
HOLLCROFT DRIVE
DAVY ROAD
Platt Bridge
A58 LILY LANE
TRAM STREET
A573 WARRINGTON ROAD
RYDAL PLACE
VICARAGE ROAD
Abram
LEE LANE
PARK VIEW
SIMPKIN STREET
B5237 BICKERSHAW LANE
RUSKIN CRESCENT
SLAG LANE
Hey Brook Farm
CRANKWOOD ROAD

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-09-318

Map Name: Night-time Operational Sound Contour Maps

Community Area MA05: Risley to Bamfurlong

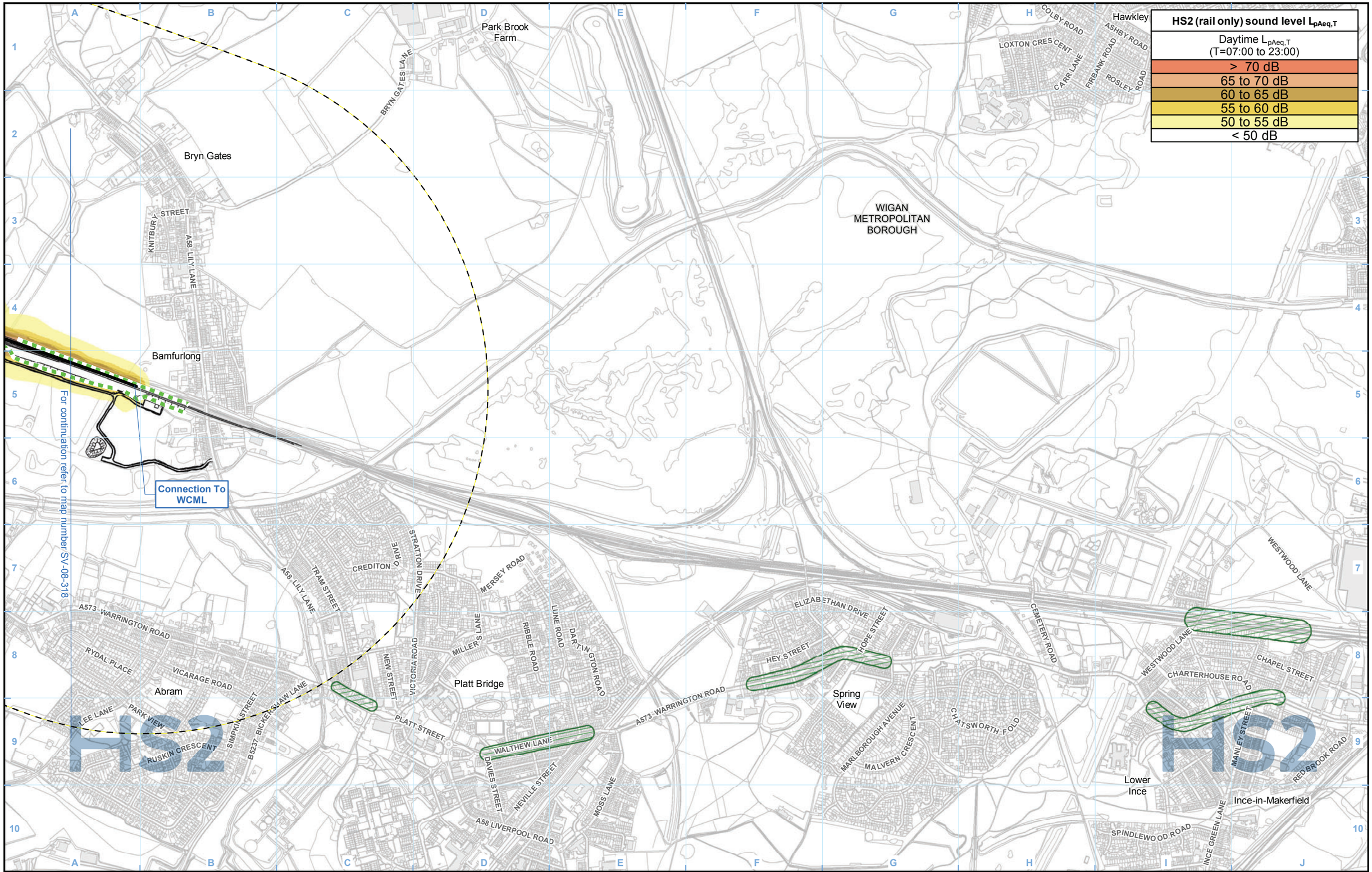
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003142-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-08-318-C1

Map Name: Daytime Operational Sound Contour Maps

Community Area MA05: Risley to Bamfurlong

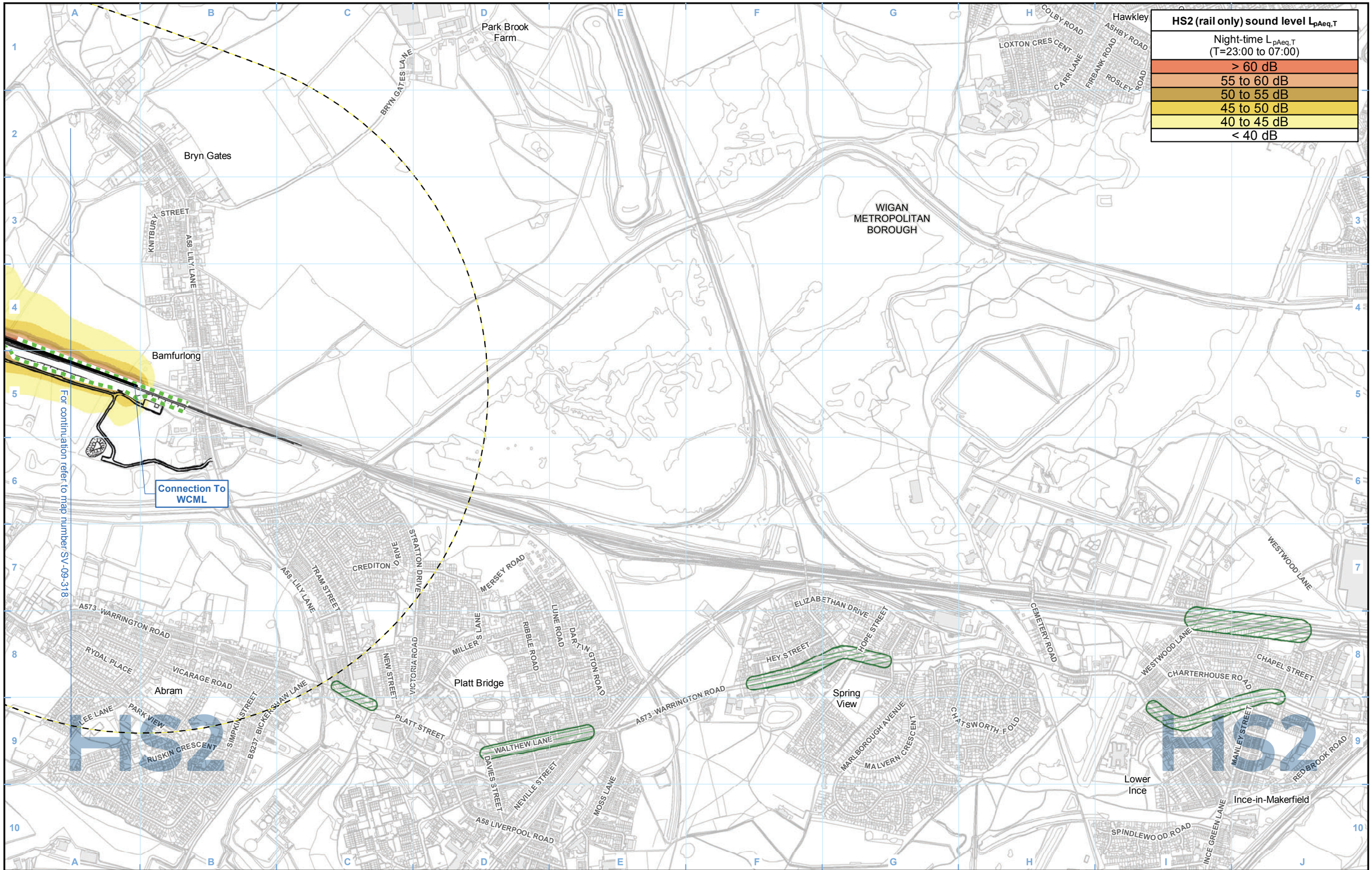
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003102-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-09-318-C1

Map Name: Night-time Operational Sound Contour Maps

Community Area MA05: Risley to Bamfurlong

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003143-P01

Date: 10/08/21

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HS2

High Speed Rail (Crewe – Manchester) Environmental Statement

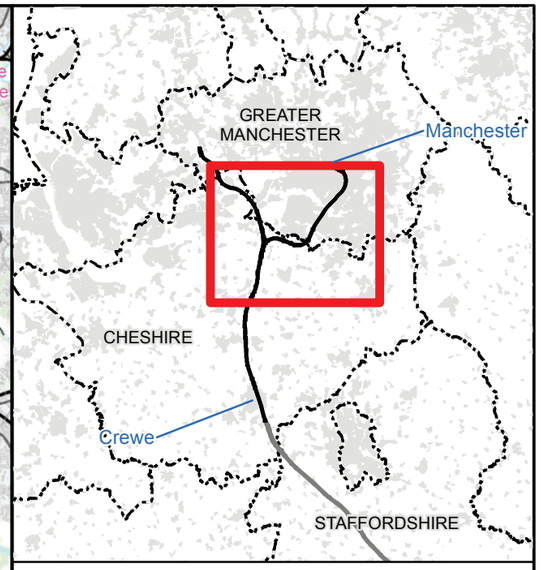
MA06: Hulseheath to Manchester Airport

SV-02 - Operational Noise and Vibration Impacts and Likely Significant Effects (with Assessment Location)

SV-03 - Assessment and Monitoring Locations for Construction Sound, Noise and Vibration Assessments

SV-08 - Daytime Operational Sound Contour Maps

SV-09 - Night-time Operational Sound Contour Maps



Map Series Information:

SV-02 presents the direct operational noise impacts and likely significant effects of the Proposed Scheme.

The SV-02 figure series necessarily contains a large amount of information relating to the operational noise and vibration assessment. It is designed to communicate visually the assessment process from the prediction of impacts to the determination of likely residual significant effects. The corresponding text is included in Vol2 and Vol5.

Key items on the map include the following:
- The Proposed Scheme (the proposed railway alignments and surrounding associated earthworks/roads);
- blue and green lines representing the wayside airborne noise mitigation measures included in the Proposed Scheme;
- the study areas, which indicate the areas within which direct sound and vibration impacts of the scheme have been quantitatively assessed;
- the calculated direct operational impacts of the scheme, displayed as colour-coded buildings and symbols representing buildings that would potentially qualify for noise insulation;
- sound contours representing sound produced by the new railway (displayed in a simpler manner than on SV-08 and SV-09 in order not to obscure the features on the map series);
- the assessment locations at which a quantitative prediction of sound and impacts have been carried out (representing a number of nearby buildings). These are labelled with a unique reference number to enable cross-reference to further detail regarding the assessments in Volume 5: Appendix SV-003-0MA0X; and
- labels indicating where the likely residual direct noise or vibration significant effects have been identified. These are labelled with a unique reference number to enable cross-reference to further detail regarding the assessments in Volume 5: Appendix SV-003-0MA0X.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

A more detailed explanation of each legend item included on the figures and on the separate legend page can be found in the data dictionary.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-02-INDEX-MA06

Map Name: Index Map of: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

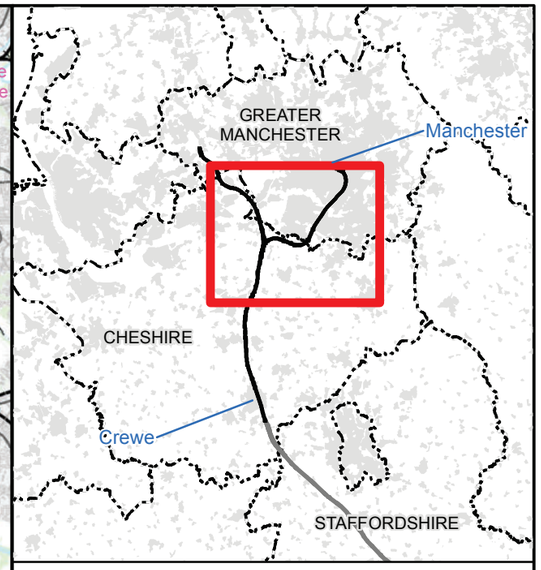
Community Area MA06: Hulseheath to Manchester Airport

Scale at A3: 1:100,000

0 1,000 2,000 3,000 4,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002042-P01

Date: 10/08/21



Map Series Information:

The SV-03 figure series accompanies the construction noise & vibration assessments. It shows the locations at which a quantitative assessment of the direct effects of construction noise and/or vibration has been carried out. These are labelled as assessment locations with a reference number to enable cross-reference to the construction noise and vibration reports contained in Volume 5: Appendix SV-002-0MA06.

The figure series also shows locations at which baseline sound measurements were carried out.
These baseline measurement locations are labelled with a reference number to enable cross-reference to the baseline sound reports contained in Volume 5: Appendix SV-002-0MA06.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

A more detailed explanation of each legend item included on the figures can be found in the data dictionary.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-03-INDEX-MA06

Map Name: Index Map of: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA06: Hulseheath to Manchester Airport

Scale at A3: 1:100,000

0 1,000 2,000 3,000 4,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002088-P01

Date: 06/09/21

HS2 (rail only) noise level $L_{pAeq,T}$		Potential noise effect[1, 2]	
Night-time $L_{pAeq,T}$ (T=23:00 to 07:00)	Daytime $L_{pAeq,T}$ (T=07:00 to 23:00)	**Residential**	**Non-residential & quiet areas**
> 55 dB	> 65 dB	Likely significant effect on dwellings indicated by ◯, ✳ or ✕ avoided by noise insulation	Effect dependent on receptor and baseline. For further details see Volume 5, Appendix SV-003-0MA0X. Likely significant effect indicated by MA0X-O-N#[2]
40 to 55 dB	50 to 65 dB	Effect dependent on noise level change and significance criteria. Likely significant effects on groups of dwellings and any shared community open areas indicated by MA0X-O-C#[2]	
< 40 dB	< 50 dB	Generally no adverse effect expected[1]	

Operational airborne noise impacts at residential buildings[1]

- Major adverse
- Moderate adverse
- Minor adverse
- Negligible
- Beneficial

- ◯ Potential additional noise insulation (triggered by maximum noise levels at night)[1]
- ✳ Potential additional noise insulation (triggered by WHO Night Noise Guidelines Interim Target)[1]
- ✕ Potential noise insulation (triggered by Noise Insulation Regulations 1996)[1]
- ◯ L_{pAFmax} exceeds 60dB façade HS2 train only L_{pAFmax} +2.5dB façade correction

▭ Ground-borne noise or vibration impact at residential buildings

[1] For further information see Volume 5 Appendix SV-001-00000
[2] For details see relevant Volume 5 Appendix SV-003-0MA0X

SV-02 - Legend

Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Doc Number: -

Date:

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PICKMERE TO AGDEN AND HULSEHEATH

HULSEHEATH TO MANCHESTER AIRPORT

For SNV effects symbology please refer to SV-02 - Legend page

Manchester to Liverpool Junction

A556 Chester Road Overbridge

Millington Lane Overbridge

Agden Brook Viaduct

HS2 Manchester Spur

281+000

282+000

283+000

MA06-O-N1

MA03-O-C4

ML712612

ML712700

ML712611

ML712701

ML712702

For continuation refer to map number SV-02-312a

For continuation refer to map number SV-02-320

Spodegreen Farm

Bowdon

Bow Green Farm

Yarwood Heath Farm

Cherry Tree Farm

Ryecroft Farm

Ivy House Farm

Newhall Farm

CHESHIRE EAST

Briddon Weir Farm

Shaw Green Farm

Denfield Hall Farm

Rostherne

M56

A556 CHESTER ROAD

B5569 CHESTER ROAD

COE LANE

YARWOOD HEATH LANE

CHERRY TREE LANE

TOM LANE

BOOTHBANK LANE

THOWLER LANE

HULSEHEATH LANE

ROSTHERNE LANE

NEW ROAD

BIRKINHEATH LANE

MARSH LANE

612847 612843 612842 612839 612831 612827 612808 612807 612801 612794 612783 612766 612764 612759 612754 612753 612751 612732 612730 612720 612727 612722 612712 612706 612707 612700 612688 612803 612789 612781 613032 613035 612776 612740 612724 612716 612699 612845 612830

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:

- Embankment
- Cutting

Non engineering earthworks:

- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:

- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:

- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-319

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Community Area MA06: Hulseheath to Manchester Airport

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002024-P01

Date: 10/08/21

PICKMERE TO AGDEN AND HULSEHEATH

HULSEHEATH TO MANCHESTER AIRPORT

HS2

612847 612843 612842 612839 612831 612827 612808 612807 612801 612794 612783 ML712612 612766 612751 ML712700 612732 612730 612712 ML712611 612706 612700 612803 612789 612781 613032 613035 613042 612764 612754 612753 613043 612720 ML712701 612727 612722 612707 613044 612759 613045 612845 612830 612776 612740 612724 612716 ML712702 612699

Spodegreen Farm
TRAFFORD METROPOLITAN BOROUGH
Bowdon
Bow Green Farm
Yarwood Heath Farm
Ryecroft Farm
Cherry Tree Farm
Ivy House Farm
Newhall Farm
CHESHIRE EAST
Briddon Weir Farm
Denfield Hall Farm
Rostherne
Shaw Green Farm

M56
A556 Chester Road Overbridge
Manchester to Liverpool Junction
Millington Lane Overbridge
Agden Brook Viaduct
HS2 Manchester Spur
281+000
282+000
283+000
280+000
COE LANE
BOOTHBANK LANE
THOWLER LANE
YARWOOD HEATH LANE
CHERRY TREE LANE
TOMLANE
A556 CHESTER ROAD
B5569 CHESTER ROAD
ROSTHERNE LANE
HULSEHEATH LANE
BIRKINHEATH LANE
MARSH LANE

MA06-C-N1
MA06-C-N4
MA06-C-N5
MA06-C-C5
MA06-C-N6
MA06-C-C4
MA03-C-C2
MA03-C-C2

For continuation refer to map number SV-03-3128
For continuation refer to map number SV-03-320

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks: Embankment, Cutting
Non engineering earthworks: Embankment, Cutting
Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA06) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA06-C-C# and MA06-C-N#, respectively.

Map Number: SV-03-319

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA06: Hulseheath to Manchester Airport

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002070-P01

Date: 06/09/21

For SNV effects symbology please refer to SV-02 - Legend page

Bowdon
Dairy House Farm
ASHLEY ROAD
CASTLE MILL LANE
M56
ML712709
612731
Thorns Green
287+000
612726
612719
612750
612739
CHESHIRE EAST
612787
612768
For continuation refer to map number SV-02-319
ML712704
MA06/194
613081
613046
613217
612743
612729
Ashley
612742
612728
613218
ML712705
612721
612735
613082
612725
MA06-O-C1
MOBBERLEY ROAD
Back Lane Farm
BACK LANE
612713
612705
Ryecroft Farm
612776
283+000
284+000
285+000
286+000
612738
MA06/203
612711
MA06-O-N2
Stock Farm
ASHLEY ROAD
612718
612690
ML712708
AMBLANE
612714
MA06-O-N2
Birkin Farm
ML712703
LOWERHOUSE LANE
612740
Lower House Farm
612685
Blackburn's Brook North Viaduct
612716
ASHLEY ROAD
612701
612693
612724
BIRKINHEATH LANE
Briddon Weir Farm
ML712702
Mid-Cheshire (Railway) and Mobberley Road Viaduct
613079
South Arden Lodge
MOBBERLEY ROAD
Shaw Green Farm
612699
612680
Sugar Brook Farm
612667
HS2
HS2
For continuation refer to map number SV-02-320-R1
612683
BREACH HOUSE LANE
ML712707
613201
MARSH LANE
For continuation refer to map number SV-02-321

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-320

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

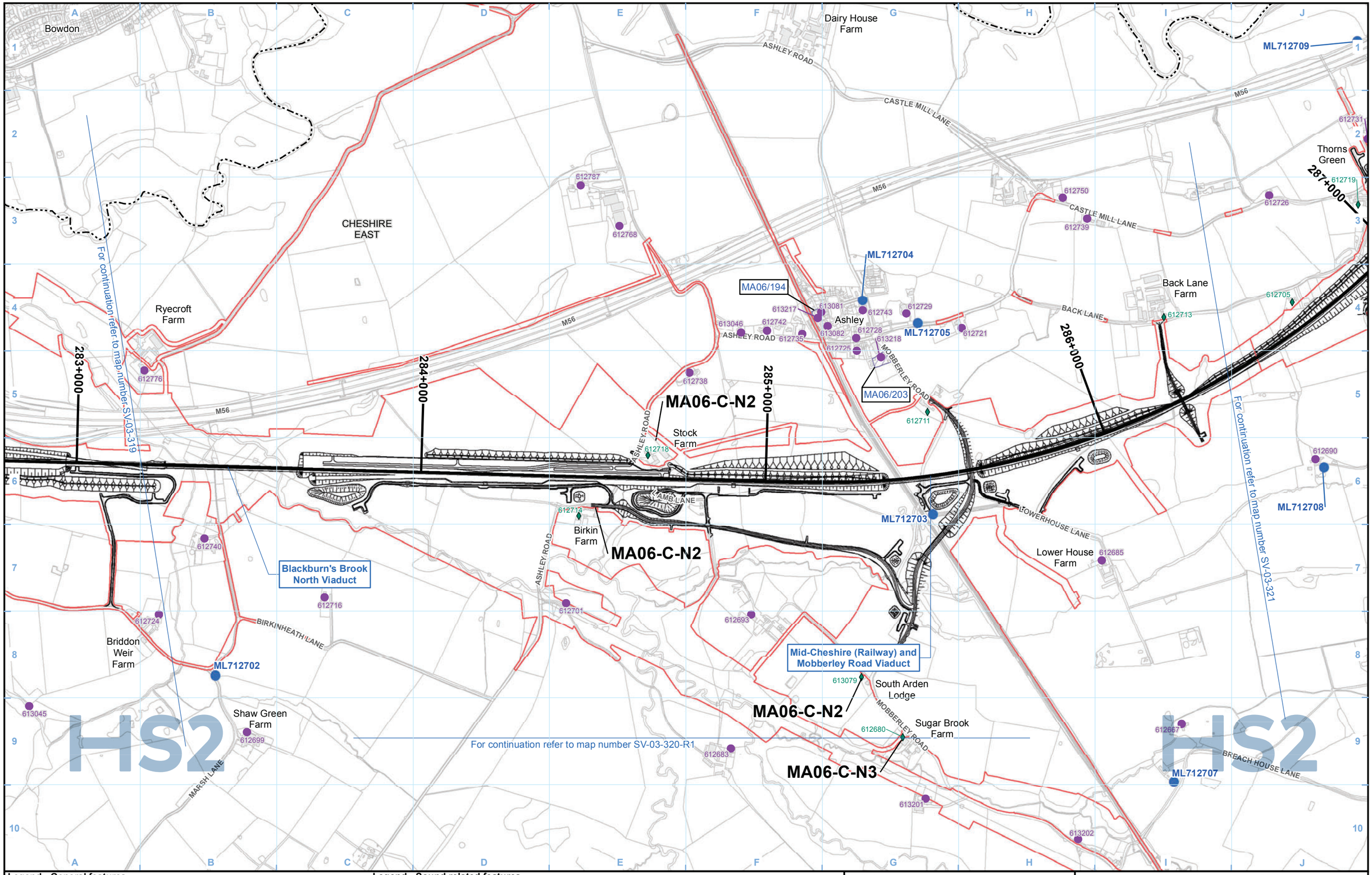
Community Area MA06: Hulseheath to Manchester Airport

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002025-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA06) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA06-C-C# and MA06-C-N#, respectively.

Map Number: SV-03-320

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA06: Hulseheath to Manchester Airport

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002071-P01

Date: 06/09/21

For SNV effects symbology please refer to SV-02 - Legend page

612724 612716 612701 612693 613079 612666

BIRKINHEATH LANE

ML712702

South Arden Lodge

For continuation refer to map number SV-02-320

MOBBERLEY ROAD

Sugar Brook Farm

612699 612683 612680 612667

Shaw Green Farm

MARSH LANE

BREACH HOUSE LANE

613201

ML712707

ML712706

New Mills

PEPPER STREET

Marsh Farm

ASHLEY ROAD

KELLHOUSE LANE

SMALL LANE

CHESHIRE EAST

SMITH LANE

STATION ROAD

Mobberley

SLADE LANE

ROSTHERNE DRIVE

Park Farm

BROADOAK LANE

HS2

HS2

A B C D E F G H I J

1 2 3 4 5 6 7 8 9 10

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-320-R1

Map Name

Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Community Area MA06: Hulseheath to Manchester Airport

HS2

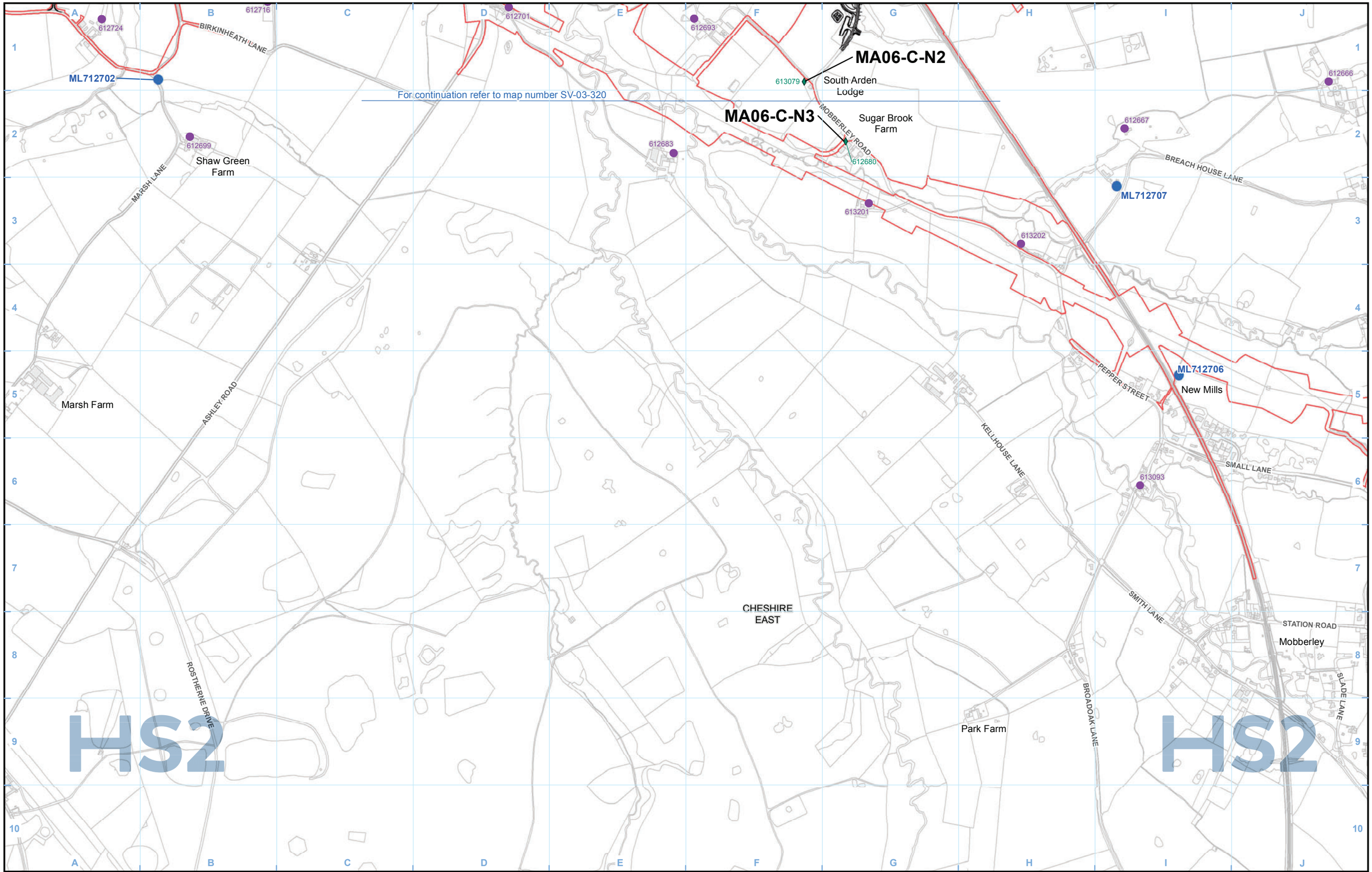
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002887-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks: Embankment; Cutting

Non engineering earthworks: Embankment; Cutting

Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA06) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA06-C-C# and MA06-C-N#, respectively.

Map Number: SV-03-320-R1

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA06: Hulseheath to Manchester Airport

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002888-P01

Date: 06/09/21

For SNV effects symbology please refer to SV-02 - Legend page

MA06-O-C1

285+000 286+000 287+000 288+000 289+000

MA06/194 MA06/203 MA06/038 MA06/073 MA06/261

ML712703 ML712704 ML712705 ML712708 ML712709 ML712710 ML712711 ML712712 ML712713 ML712714 ML712715

Sunbank Lane Overbridge

A538 Hale Road Overbridge

Castle Mill Lane Overbridge

River Bollin East Viaduct

Davenport Green

Hale Barns

Ashley

Thorns Green

Higher Thorns Green Farm

Lower House Farm

Back Lane Farm

Warburton Green

Hale Bank Farm

Chapel House Farm

Castle Mill Farm

TRAFFORD METROPOLITAN BOROUGH

CHESHIRE EAST

MANCHESTER CITY

For continuation refer to map number SV-02-320

For continuation refer to map number SV-02-322a

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-321

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Community Area MA06: Hulseheath to Manchester Airport

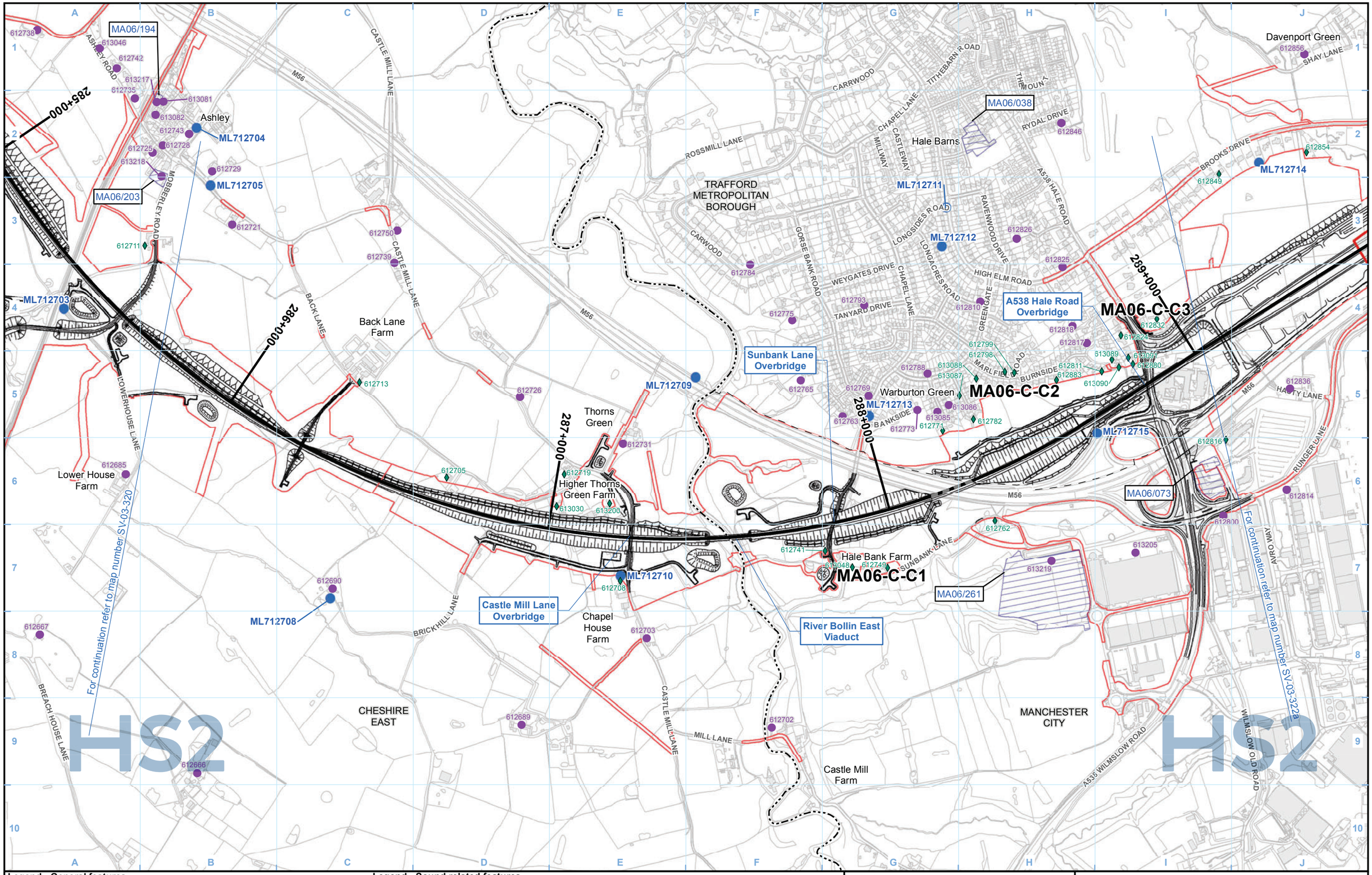
Registered in England. Registration number 06791686. Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002026-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

- Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA06) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA06-C-C# and MA06-C-N#, respectively.

Map Number: SV-03-321

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA06: Hulseheath to Manchester Airport

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002072-P01

Date: 06/09/21

For SNV effects symbology please refer to SV-02 - Legend page

HULSEHEATH TO MANCHESTER AIRPORT

DAVENPORT GREEN TO ARDWICK

Hale Barns
Roundthorn
Davenport Green
TRAFFORD METROPOLITAN BOROUGH
MANCHESTER CITY
Baguley
Chapel House Farm
Newall Green
Wythenshawe
Benchill

MA06/038
MA06/073
ML712714
ML712771
ML712794

Hasty Lane Overbridge
Manchester Tunnel South Portal
Manchester Tunnel
Thorley Lane Overbridge
Manchester Airport High Speed Station

289+000
290+000
291+000
292+000

For continuation refer to map number SV-02-321
For continuation refer to map number SV-02-323

WHITECARR LANE
BROOKS DRIVE
DOBBINETTS LANE
ENNIS CLOSE
FLOATS ROAD
LEDSON ROAD
TILSON ROAD
MALTBY ROAD
DUNKELD ROAD
THE MOUNT
RYDAL DRIVE
A538 HALE ROAD
SHAY LANE
ROARING GATE LANE
CLAY LANE
FOUR ACRES ROAD
BOWLAND ROAD
FLOATSHALL ROAD
WASTDALE ROAD
AMBERLEY DRIVE
HOLLYHEDGE ROAD
FIRBANK ROAD
HALL LANE
GREENBROW ROAD
RISSINGTON AVENUE
THORLEY LANE
FOXFIELD ROAD
CHALFORD ROAD
WHITBURN ROAD
COLSHAW ROAD
MILLBROOK ROAD
BARNWOOD ROAD
OLDWOOD ROAD
TUFFLEY ROAD
BLACKCARR ROAD
HEYBROOK ROAD
DUNNISHEAD ROAD
SHAWBURY ROAD
M56
RUNGER LANE
SYDNEY AVENUE
AVRO WAY
PALMA AVENUE
BLEASDALE ROAD
BARROWFIELD ROAD
CHATCOMBE ROAD
FLAXCROFT ROAD
PORTWAY
SIMONSWAY
GREATFIELD ROAD
GREENWOOD ROAD
FANCROFT ROAD
ALDERS ROAD
HAVELEY ROAD
MOAT ROAD
HONFORD ROAD
BROADOAK ROAD
HOLLYHEDGE ROAD
NEWHEY ROAD
PANFIELD ROAD
GLADESIDE ROAD
NEARBROOK ROAD
PLOWDEN ROAD
PANSWICK ROAD
GREYFRIARS ROAD
COTEFIELD ROAD
LONGHOPE ROAD
DEVOKE ROAD
ULLSWATER ROAD
LONGLEVENS ROAD
CRICKLEWOOD ROAD
POUNDSWICK LANE
WYNYARD ROAD
WOODHOUSE LANE
LONGHEY ROAD

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-322a

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Community Area MA06: Hulseheath to Manchester Airport

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002027-P01

Date: 10/08/21

HULSEHEATH TO MANCHESTER AIRPORT

DAVENPORT GREEN TO ARDWICK

HS2

Hale Barns
Davenport Green
TRAFFORD METROPOLITAN BOROUGH
Roundthorn
MANCHESTER CITY
Baguley
Chapel House Farm
Newall Green
Wythenshawe
Benchill

MA06/038
MA06/073
MA06-C-C30

Hasty Lane Overbridge
Manchester Tunnel South Portal
Manchester Tunnel
Thorley Lane Overbridge
Manchester Airport High Speed Station

289+000
290+000
291+000
292+000

ML712714
ML712771
ML712794

For continuation refer to map number SV-03-321
For continuation refer to map number SV-03-323

M56

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

- Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA06) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA06-C-C# and MA06-C-N#, respectively.

Map Number: SV-03-322a

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA06: Hulseheath to Manchester Airport

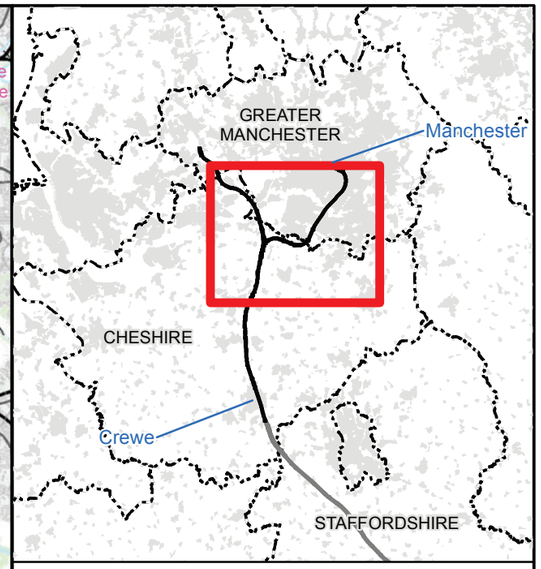
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002073-P01

Date: 06/09/21



Map Series Information:

SV-08 presents the predicted daytime operational sound from the new railway.

The sound levels from the new railway (expressed as $_{LpAeq,T}$) are presented in typical noise mapping colours in 5 dB steps. There is a panel at the top right of the figure; this panel contains a key communicating the daytime sound levels represented by the various colours. A corresponding and similar panel is found on SV-02 and SV-09, along with the key sound contours that were used within the environmental assessment.

Also presented on SV-08 are the following (which are also included on SV-02):

• A representation of the Proposed Scheme, including the railway alignment (indicating whether it is on the surface or in tunnel), any new and altered roads and all associated engineering and environmental mitigation earthworks;

• blue and green lines representing the wayside airborne noise mitigation measures included in the Proposed Scheme;

• the extent of the study area within which the direct impacts and effects of the scheme have been quantitatively assessed.

A more detailed explanation of each legend item included on the figures can be found in the data dictionary.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-08-INDEX-MA06

Map Name: Index Map of: Daytime Operational Sound Contour Maps

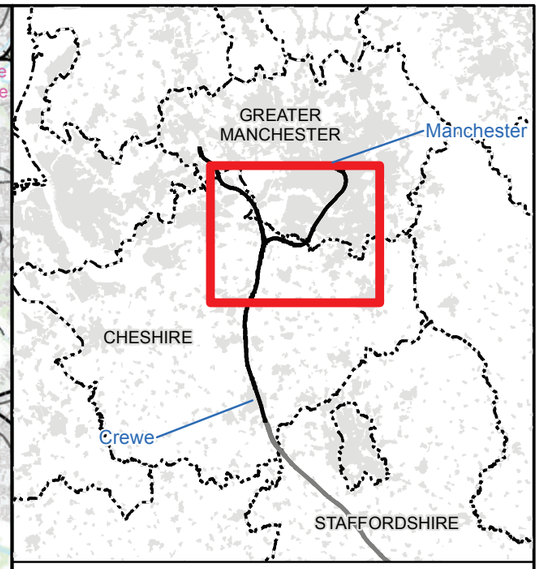
Community Area MA06: Hulseheath to Manchester Airport

Scale at A3: 1:100,000

0 1,000 2,000 3,000 4,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003077-P01

Date: 06/09/21



Map Series Information:

SV-09 presents the predicted night-time operational sound from the new railway.

The sound levels from the new railway (expressed as $_{LpAeq,T}$) are presented in typical noise mapping colours in 5 dB steps. There is a panel at the top right of the figure; this panel contains a key communicating the night-time sound levels represented by the various colours. A corresponding and similar panel is found on SV-02 and SV-08, along with the key sound contours that were used within the environmental assessment.

Also presented on SV-09 are the following (which are also included on SV-02):

• A representation of the Proposed Scheme, including the railway alignment (indicating whether it is on the surface or in tunnel), any new and altered roads and all associated engineering and environmental mitigation earthworks;

• blue and green lines representing the wayside airborne noise mitigation measures included in the Proposed Scheme;

• the extent of the study area within which the direct impacts and effects of the scheme have been quantitatively assessed.

A more detailed explanation of each legend item included on the figures can be found in the data dictionary.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-09-INDEX-MA06

Map Name: Index Map of: Night-time Operational Sound Contour Maps

Community Area MA06: Hulseheath to Manchester Airport

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:100,000

0 1,000 2,000 3,000 4,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003118-P01

Date: 06/09/21

PICKMERE TO AGDEN AND HULSEHEATH

HULSEHEATH TO MANCHESTER AIRPORT

HS2 (rail only) sound level $L_{pAeq,T}$
Daytime $L_{pAeq,T}$ (T=07:00 to 23:00)
> 70 dB
65 to 70 dB
60 to 65 dB
55 to 60 dB
50 to 55 dB
< 50 dB

Spodegreen Farm
TRAFFORD METROPOLITAN BOROUGH
COE LANE
M56
A556 Chester Road Overbridge
Manchester to Liverpool Junction
281+000
282+000
283+000
Yarwood Heath Farm
YARWOOD HEATH LANE
Ryecroft Farm
BOOTHBANK LANE
For continuation refer to map number SV-08-312a
For continuation refer to map number SV-08-320
Cherry Tree Farm
CHERRY TREE LANE
TOMLANE
280+000
THOWLER LANE
Ivy House Farm
Millington Lane Overbridge
A556 CHESTER ROAD
Newhall Farm
CHESHIRE EAST
Agden Brook Viaduct
HS2 Manchester Spur
Briddon Weir Farm
BIRKINHEATH LANE
HS2
A556
B5569 CHESTER ROAD
ROSTHERNE LANE
Denfield Hall Farm
MARSH LANE
Shaw Green Farm
HULSEHEATH LANE
NEW ROAD
Rostherne

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-08-319

Map Name: Daytime Operational Sound Contour Maps

Community Area MA06: Hulseheath to Manchester Airport

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003103-P01

Date: 10/08/21

PICKMERE TO AGDEN AND HULSEHEATH

HULSEHEATH TO MANCHESTER AIRPORT

HS2 (rail only) sound level $L_{pAeq,T}$
Night-time $L_{pAeq,T}$ (T=23:00 to 07:00)
> 60 dB
55 to 60 dB
50 to 55 dB
45 to 50 dB
40 to 45 dB
< 40 dB

Spodegreen Farm
COE LANE
M56
A556 Chester Road Overbridge
Manchester to Liverpool Junction
281+000
282+000
283+000
YARWOOD HEATH LANE
Yarwood Heath Farm
TRAFFORD METROPOLITAN BOROUGH
Ryecroft Farm
BOOTHBANK LANE
THOWLER LANE
Ivy House Farm
280+000
For continuation refer to map number SV-09-312a
For continuation refer to map number SV-09-320
Cherry Tree Farm
CHERRY TREE LANE
TOMI LANE
A556 CHESTER ROAD
Millington Lane Overbridge
Newhall Farm
CHESHIRE EAST
Agden Brook Viaduct
HS2 Manchester Spur
Briddon Weir Farm
BIRKINHEATH LANE
HULSEHEATH LANE
A556
B5569 CHESTER ROAD
ROSTHERNE LANE
Denfield Hall Farm
Rostherne
NEW ROAD
MARSH LANE
Shaw Green Farm

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-09-319

Map Name: Night-time Operational Sound Contour Maps

Community Area MA06: Hulseheath to Manchester Airport

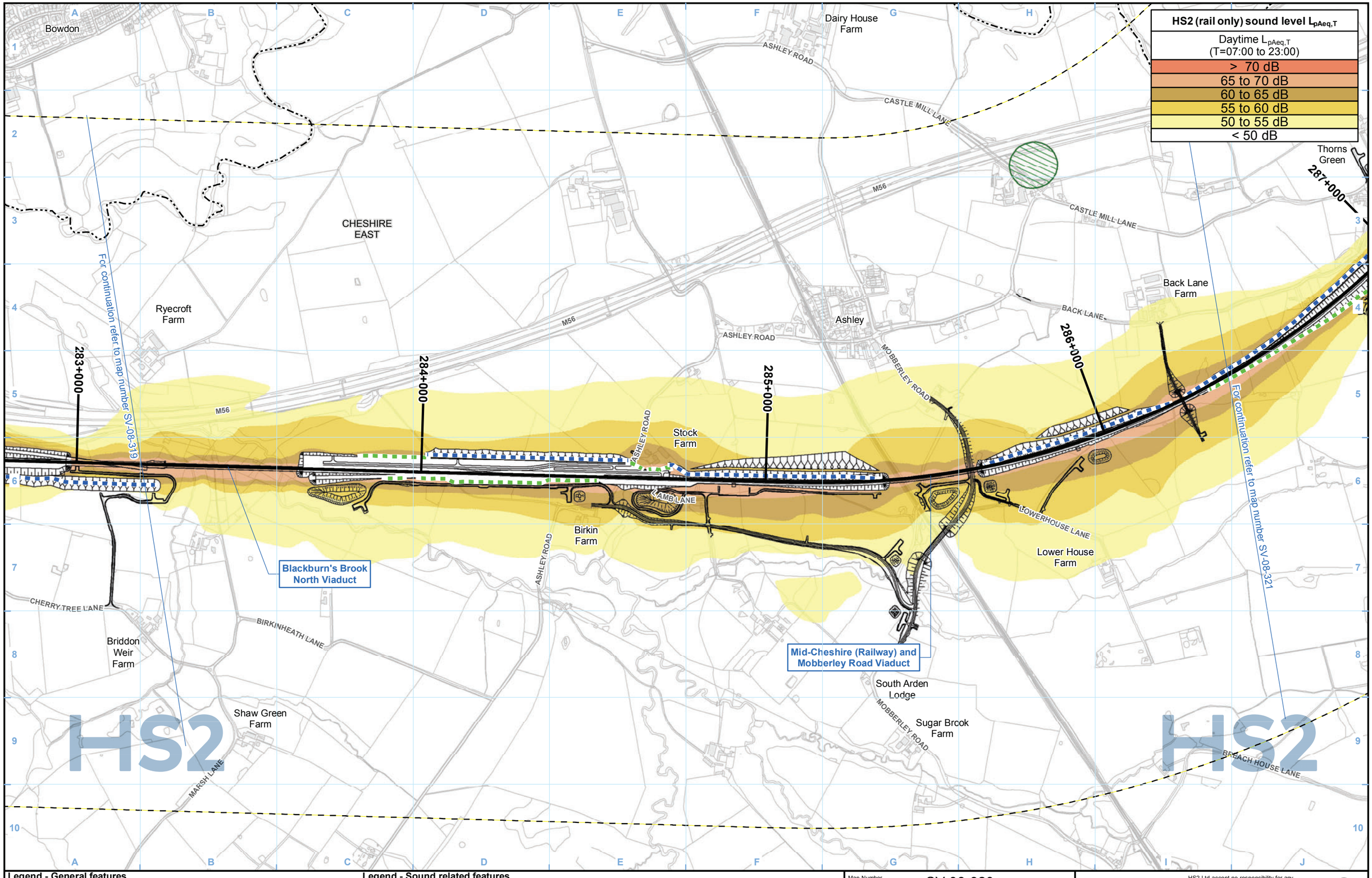
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003144-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-08-320

Map Name: Daytime Operational Sound Contour Maps

Community Area MA06: Hulseheath to Manchester Airport

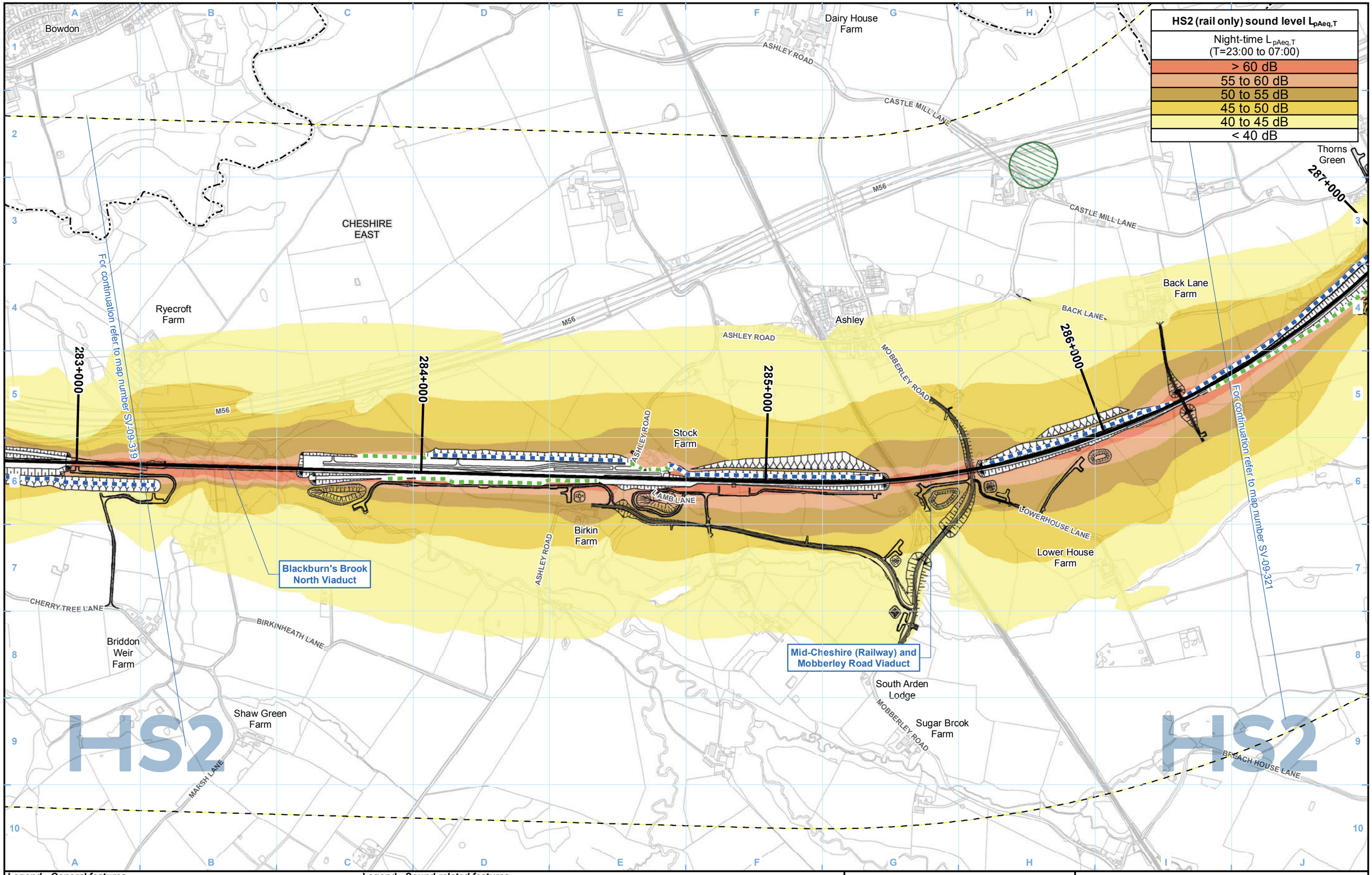
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003104-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-09-320

Map Name: Night-time Operational Sound Contour Maps

Community Area MA06: Hulseheath to Manchester Airport

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003145-P01

Date: 10/08/21

HS2 (rail only) sound level $L_{pAeq,T}$

Daytime $L_{pAeq,T}$ (T=07:00 to 23:00)

- > 70 dB
- 65 to 70 dB
- 60 to 65 dB
- 55 to 60 dB
- 50 to 55 dB
- < 50 dB

285+000
286+000
287+000
288+000
289+000

Ashley
Back Lane Farm
Thorns Green
Higher Thorns Green Farm
Lower House Farm
Hale Barns
TRAFFORD METROPOLITAN BOROUGH
Warburton Green
Hale Bank Farm
Chapel House Farm
Castle Mill Farm
CHESHIRE EAST
MANCHESTER CITY

A538 Hale Road Overbridge
Sunbank Lane Overbridge
Castle Mill Lane Overbridge
River Bollin East Viaduct

ASHLEY ROAD
M56
CASTLE MILL LANE
MOBBERLEY ROAD
BACK LANE
LOWERHOUSE LANE
ROSSMILL LANE
CARRWOOD
TITHEBARN ROAD
THE MOUNT
CHAPEL LANE
RYDAL DRIVE
GORSE BANK ROAD
LONGSIDES ROAD
LONGACRES ROAD
RAVENWOOD DRIVE
A538 HALE ROAD
WEYGATES DRIVE
TANYARD DRIVE
HIGH ELM ROAD
GREENGATE
MARLFIELD ROAD
BURNSIDE
BANKSIDE
HASTY LANE
RUNGER LANE
AVRO WAY
SUNBANK LANE
BRICKHILL LANE
BREACH HOUSE LANE
MILL LANE
A535 WILMSLOW ROAD
WILMSLOW OLD ROAD

For continuation refer to map number SV-08-320
For continuation refer to map number SV-08-322a

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-08-321

Map Name: Daytime Operational Sound Contour Maps

Community Area MA06: Hulseheath to Manchester Airport

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003105-P01

Date: 10/08/21

HS2 (rail only) sound level $L_{pAeq,T}$

Night-time $L_{pAeq,T}$ (T=23:00 to 07:00)

- > 60 dB
- 55 to 60 dB
- 50 to 55 dB
- 45 to 50 dB
- 40 to 45 dB
- < 40 dB

285+000
286+000
287+000
288+000
289+000

Ashley
Back Lane Farm
Lower House Farm
Thorns Green
Higher Thorns Green Farm
Hale Barns
TRAFFORD METROPOLITAN BOROUGH
Warburton Green
Hale Bank Farm
Chapel House Farm
Castle Mill Farm
CHESHIRE EAST
MANCHESTER CITY

Sunbank Lane Overbridge
A538 Hale Road Overbridge
Castle Mill Lane Overbridge
River Bollin East Viaduct

ASHLEY ROAD
M56
CASTLE MILL LANE
MOBBERLEY ROAD
BACK LANE
LOWERHOUSE LANE
ROSSMILL LANE
CARRWOOD
TITHEBARN ROAD
THE MOUNT
CHAPEL LANE
RYDAL DRIVE
A538 HALE ROAD
LONGSIDES ROAD
RAVENWOOD DRIVE
GORSE BANK ROAD
WEYGATES DRIVE
LONGACRES ROAD
HIGH ELM ROAD
TANYARD DRIVE
GREENGATE
MARLFIELD ROAD
BURNSIDE
BANKSIDE
HASTY LANE
RUNGER LANE
AVRO WAY
SUNBANK LANE
BRICK HILL LANE
BREACH HOUSE LANE
MILL LANE
A535 WILMSLOW ROAD
WILMSLOW OLD ROAD

For continuation refer to map number SV-09-320
For continuation refer to map number SV-09-322a

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-09-321

Map Name: Night-time Operational Sound Contour Maps

Community Area MA06: Hulseheath to Manchester Airport

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003146-P01

Date: 10/08/21

HULSEHEATH TO MANCHESTER AIRPORT

DAVENPORT GREEN TO ARDWICK

HS2 (rail only) sound level $L_{pAeq,T}$

Daytime $L_{pAeq,T}$ (T=07:00 to 23:00)

- > 70 dB
- 65 to 70 dB
- 60 to 65 dB
- 55 to 60 dB
- 50 to 55 dB
- < 50 dB

289+000 | 290+000 | 291+000 | 292+000

Hasty Lane Overbridge

Manchester Tunnel South Portal

Manchester Tunnel

Thorley Lane Overbridge

Manchester Airport High Speed Station

For continuation refer to map number SV-08-321

Hale Barns | Davenport Green | Chapel House Farm | Roundthorn | Newall Green | Baguley | Wythenshawe | Benchill

TRAFFORD METROPOLITAN BOROUGH

MANCHESTER CITY

M56

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks: Embankment, Cutting

Non engineering earthworks: Embankment, Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:

- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:

- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-08-322a

Map Name: Daytime Operational Sound Contour Maps

Community Area MA06: Hulseheath to Manchester Airport

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003106-P01

Date: 10/08/21

HULSEHEATH TO MANCHESTER AIRPORT

DAVENPORT GREEN TO ARDWICK

HS2 (rail only) sound level $L_{pAeq,T}$

Night-time $L_{pAeq,T}$ (T=23:00 to 07:00)

- > 60 dB
- 55 to 60 dB
- 50 to 55 dB
- 45 to 50 dB
- 40 to 45 dB
- < 40 dB

Hasty Lane Overbridge

Manchester Tunnel South Portal

Manchester Tunnel

Thorley Lane Overbridge

Manchester Airport High Speed Station

289+000

290+000

291+000

292+000

For continuation refer to map number SV-09-321

Hale Barns

Davenport Green

TRAFFORD METROPOLITAN BOROUGH

Chapel House Farm

Roundthorn

MANCHESTER CITY

Baguley

Newall Green

Wythenshawe

Benchill

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks: Embankment, Cutting

Non engineering earthworks: Embankment, Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:

- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:

- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-09-322a

Map Name: Night-time Operational Sound Contour Maps

Community Area MA06: Hulseheath to Manchester Airport

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003147-P01

Date: 10/08/21

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HS2

High Speed Rail (Crewe – Manchester) Environmental Statement

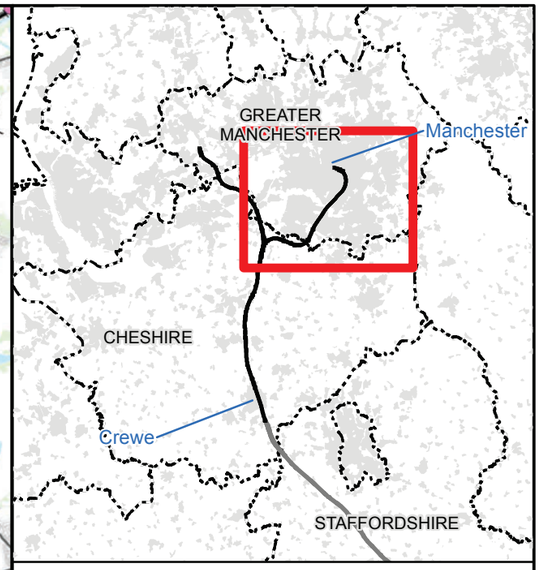
MA07: Davenport Green to Ardwick

SV-02 - Operational Noise and Vibration Impacts and Likely Significant Effects (with Assessment Location)

SV-03 - Assessment and Monitoring Locations for Construction Sound, Noise and Vibration Assessments

SV-08 - Daytime Operational Sound Contour Maps

SV-09 - Night-time Operational Sound Contour Maps



Map Series Information:

SV-02 presents the direct operational noise impacts and likely significant effects of the Proposed Scheme.

The SV-02 figure series necessarily contains a large amount of information relating to the operational noise and vibration assessment. It is designed to communicate visually the assessment process from the prediction of impacts to the determination of likely residual significant effects. The corresponding text is included in Vol2 and Vol5.

Key items on the map include the following:
- The Proposed Scheme (the proposed railway alignments and surrounding associated earthworks/roads);
- blue and green lines representing the wayside airborne noise mitigation measures included in the Proposed Scheme;
- the study areas, which indicate the areas within which direct sound and vibration impacts of the scheme have been quantitatively assessed;
- the calculated direct operational impacts of the scheme, displayed as colour-coded buildings and symbols representing buildings that would potentially qualify for noise insulation;
- sound contours representing sound produced by the new railway (displayed in a simpler manner than on SV-08 and SV-09 in order not to obscure the features on the map series);
- the assessment locations at which a quantitative prediction of sound and impacts have been carried out (representing a number of nearby buildings). These are labelled with a unique reference number to enable cross-reference to further detail regarding the assessments in Volume 5: Appendix SV-003-0MA0X; and
- labels indicating where the likely residual direct noise or vibration significant effects have been identified. These are labelled with a unique reference number to enable cross-reference to further detail regarding the assessments in Volume 5: Appendix SV-003-0MA0X.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

A more detailed explanation of each legend item included on the figures and on the separate legend page can be found in the data dictionary.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-02-INDEX-MA07

Map Name: Index Map of: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Community Area MA07: Davenport Green to Ardwick

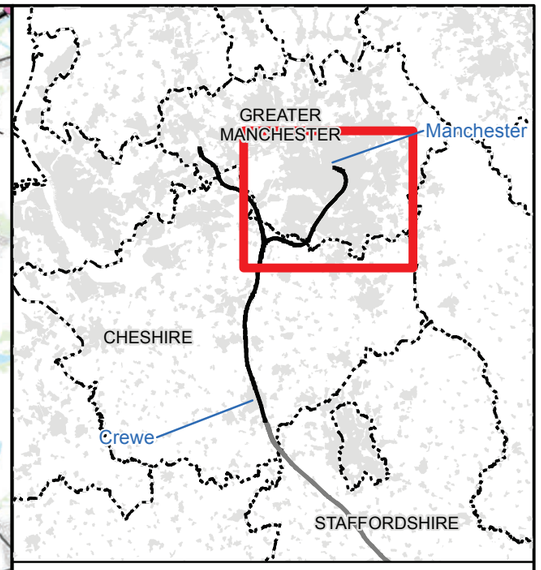
Registered in England. Registration number 06791686. Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:100,000

0 1,000 2,000 3,000 4,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002043-P01

Date: 10/08/21



Map Series Information:

The SV-03 figure series accompanies the construction noise & vibration assessments. It shows the locations at which a quantitative assessment of the direct effects of construction noise and/or vibration has been carried out. These are labelled as assessment locations with a reference number to enable cross-reference to the construction noise and vibration reports contained in Volume 5: Appendix SV-002-0MA07.

The figure series also shows locations at which baseline sound measurements were carried out.
These baseline measurement locations are labelled with a reference number to enable cross-reference to the baseline sound reports contained in Volume 5: Appendix SV-002-0MA07.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

A more detailed explanation of each legend item included on the figures can be found in the data dictionary.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-03-INDEX-MA07

Map Name: Index Map of: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA07: Davenport Green to Ardwick

Scale at A3: 1:100,000

0 1,000 2,000 3,000 4,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002089-P01

Date: 06/09/21

HS2 (rail only) noise level $L_{pAeq,T}$		Potential noise effect[1, 2]	
Night-time $L_{pAeq,T}$ (T=23:00 to 07:00)	Daytime $L_{pAeq,T}$ (T=07:00 to 23:00)	**Residential**	**Non-residential & quiet areas**
> 55 dB	> 65 dB	Likely significant effect on dwellings indicated by ◯, ✳ or ✕ avoided by noise insulation	Effect dependent on receptor and baseline. For further details see Volume 5, Appendix SV-003-0MA0X. Likely significant effect indicated by MA0X-O-N#[2]
40 to 55 dB	50 to 65 dB	Effect dependent on noise level change and significance criteria. Likely significant effects on groups of dwellings and any shared community open areas indicated by MA0X-O-C#[2]	
< 40 dB	< 50 dB	Generally no adverse effect expected[1]	

Operational airborne noise impacts at residential buildings[1]

- Major adverse
- Moderate adverse
- Minor adverse
- Negligible
- Beneficial

- ◯ Potential additional noise insulation (triggered by maximum noise levels at night)[1]
- ✳ Potential additional noise insulation (triggered by WHO Night Noise Guidelines Interim Target)[1]
- ✕ Potential noise insulation (triggered by Noise Insulation Regulations 1996)[1]
- ◯ L_{pAFmax} exceeds 60dB façade HS2 train only L_{pAFmax} +2.5dB façade correction

▭ Ground-borne noise or vibration impact at residential buildings

[1] For further information see Volume 5 Appendix SV-001-00000
[2] For details see relevant Volume 5 Appendix SV-003-0MA0X

SV-02 - Legend

Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Doc Number: -

Date:

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For SNV effects symbology please refer to SV-02 - Legend page

HULSEHEATH TO MANCHESTER AIRPORT

DAVENPORT GREEN TO ARDWICK

Hale Barns
THE MOUNT
RYDAL DRIVE
A538 HALE ROAD
MA06/038
MA06/073
For continuation refer to map number SV-02-321
For continuation refer to map number SV-02-323
WHITECARR LANE
BROOKS DRIVE
DOBBINETTS LANE
Roundthorn
TRAFFORD METROPOLITAN BOROUGH
Davenport Green
SHAY LANE
ROARING GATE LANE
Chapel House Farm
BROOKS DRIVE
612825
612849
ML712714
612854
612858
612859
612860
289+000
290+000
291+000
292+000
Hasty Lane Overbridge
Manchester Tunnel South Portal
Manchester Tunnel
612818
612817
612824
612832
612281
612880
THORLEY LANE
615027
615024
615020
615025
615028
615016
615018
615015
ROWLAND ROAD
FOXFIELD ROAD
ML712771
616274
615011
616269
615012
616268
615021
616272
615026
615023
616012
616009
616013
616014
616029
616028
616015
616018
616027
616026
CHALFORD ROAD
Newall Green
GREENBROW ROAD
WASTDALE ROAD
AMBERLEY DRIVE
CLAY LANE
ENNIS CLOSE
FLOATS ROAD
LEDSON ROAD
TILSON ROAD
MALTBY ROAD
DUNKELD ROAD
ML712794
MANCHESTER CITY
Baguley
FOUR ACRES ROAD
BOWLAND ROAD
FLOATSHALL ROAD
FIRBANK ROAD
HOLLYHEDGE ROAD
HALL LANE
RISSINGTON AVENUE
WHITBURN ROAD
COLSHAW ROAD
616030
616033
616032
616035
616710
616036
616025
616031
616037
616034
616038
616039
616044
616505
616045
616242
616050
616049
616051
616054
616068
616052
616048
616042
616043
616040
616041
616046
616047
BLACKCARR ROAD
HEYBROOK ROAD
DUNNISHEAD ROAD
MILLBROOK ROAD
616019
616020
616023
616010
616017
616018
615006
615014
616267
615010
616270
616266
615005
615007
615013
616271
615017
615019
615022
BARNWOOD ROAD
OLDWOOD ROAD
TUFFLEY ROAD
615004
615009
612855
612836
612816
612800
612814
M56
RADLEY LANE
RUNGER LANE
SYDNEY AVENUE
AVRO WAY
Manchester Airport High Speed Station
Thorley Lane Overbridge
GREENBROW ROAD
SHAWBURY ROAD
615002
615003
615001
BLEASDALE ROAD
BARROWFIELD ROAD
CHATCOMBE ROAD
FLAXCROFT ROAD
SIMONSWAY
GREATFIELD ROAD
GREENWOOD ROAD
PORTWAY
FANCROFT ROAD
HAVELEY ROAD
ALDERS ROAD
MOAT ROAD
HONFORD ROAD
Wythenshawe
BROADOAK ROAD
HOLLYHEDGE ROAD
PANSWICK ROAD
PLOWDEN ROAD
PORTWAY
PALMA AVENUE
DEVOKE ROAD
ULLSWATER ROAD
GREYFRIARS ROAD
COTEFIELD ROAD
LONGHOPE ROAD
LONGLEVENS ROAD
CRICKLEWOOD ROAD
POUNDSWICK LANE
GLADESIDE ROAD
NEARBROOK ROAD
BROADOAK ROAD
PANFIELD ROAD
HOLLYHEDGE ROAD
NEWHEY ROAD
Benchill
WYNYARD ROAD
WOODHOUSE LANE
LONGHEY ROAD

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-322b

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Community Area MA07: Davenport Green to Ardwick

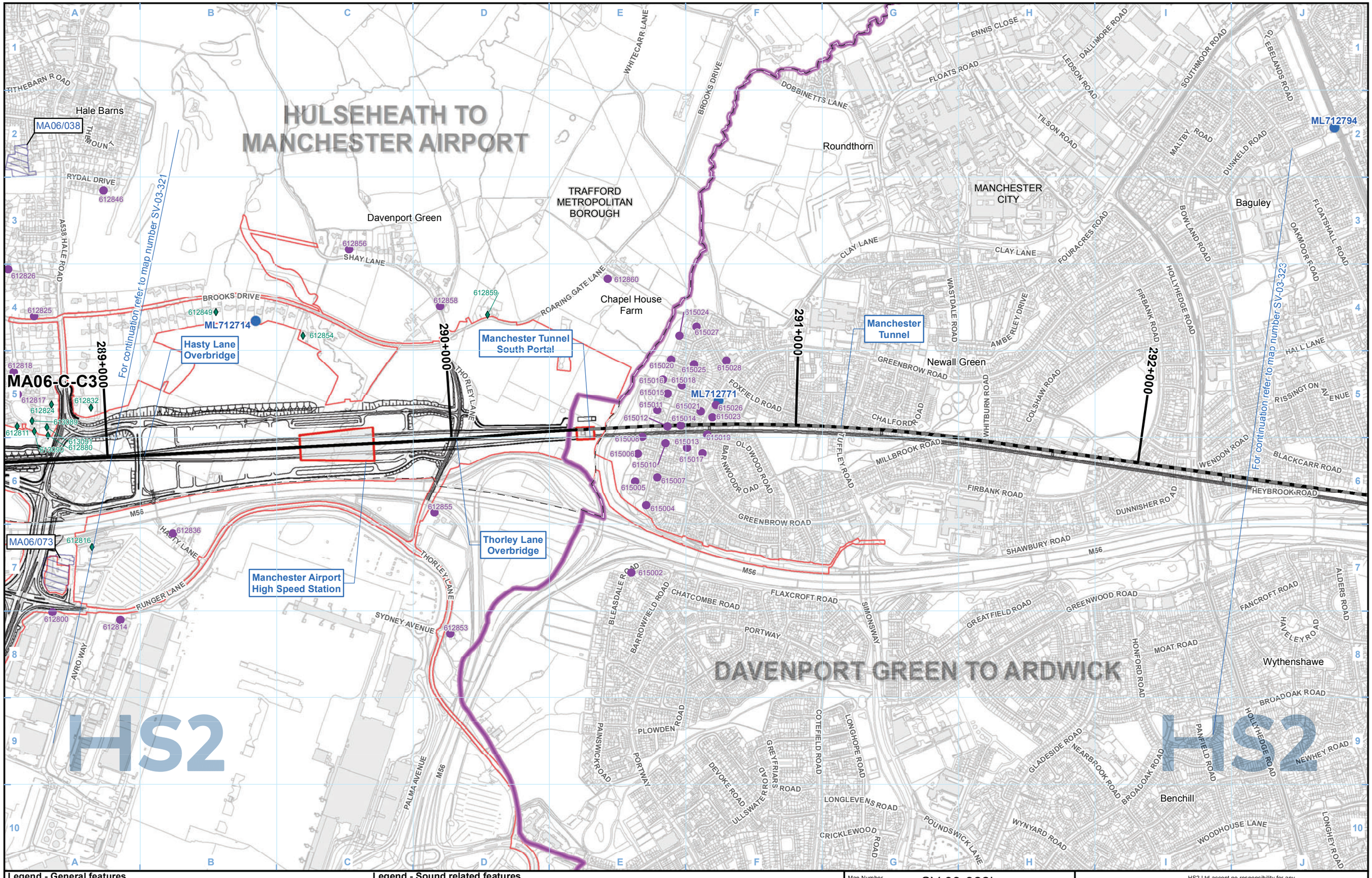
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002028-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

- Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA07) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA07-C-C# and MA07-C-N#, respectively.

Map Number: SV-03-322b

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA07: Davenport Green to Ardwick

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002074-P01

Date: 06/09/21

For SNV effects symbology please refer to SV-02 - Legend page

For continuation refer to map number SV-02-322b

For continuation refer to map number SV-02-324

Baguley

Northern Moor

West Didsbury

Didsbury

MANCHESTER CITY

Wythenshawe

Benchill

Sharston

292+000

293+000

294+000

295+000

ML712794

ML712793

ML712795

ML712796

MA07/402

MA07/363

MA07/041

MA07/042

MA07/373

MA07/437

Altrincham Road Vent Shaft

Manchester Tunnel

Palatine Road Vent Shaft

ROYAL OAK ROAD

A560 ALTRINCHAM ROAD

MALTBY ROAD

DUNKELD ROAD

WELLFIELD ROAD

NEARCROFT ROAD

FLOATSHALL ROAD

BOWLAND ROAD

HOLLYHEDGE ROAD

F'BANK ROAD

HALL LANE

RISSINGTON AVENUE

PAULDEN AVENUE

SANDACRE ROAD

REDBURN ROAD

PARK BROOK ROAD

SPINNEY ROAD

GIB LANE

A5103 PRINCESS PARKWAY

GIBWOOD ROAD

PARTLEY ROAD

SHAWDANE ROAD

B5167 PALATINE ROAD

GREENPARK ROAD

KENWORTHY LANE

ORCHARD ROAD WEST

M60

RACKHOUSE ROAD

B5167 WYTHENSHAWE ROAD

B5166 SALE ROAD

YEWTREE LANE

WILLENHALL ROAD

FAIRMEAD ROAD

HOMEWOOD ROAD

MERSEY CRESCENT

CRAIGMORE AVENUE

BLACKCARR ROAD

HEYBROOK ROAD

PARTRIDGE AVENUE

M56

PENARTH ROAD

ROUNDWOOD ROAD

LONGLEY LANE

BOAT LANE

GREENWOOD ROAD

DUNNISHER ROAD

FANCROFT ROAD

HAVELEY ROAD

ALDERS ROAD

RUSHEY ROAD

BENCHILL ROAD

SHAYFIELD DRIVE

ROYALTHORN ROAD

ALDERLEA AVENUE

PASTON ROAD

BRADNOR ROAD

HARLING ROAD

B5166 ROYLE GREEN ROAD

WEST VIEW DRIVE

B5168 SHARSTON ROAD

FORD LANE

HARFIELD DRIVE

BRONINGTON CLOSE

LEESTONE ROAD

SHENTONFIELD ROAD

MOAT ROAD

HONFORD ROAD

BROADOAK ROAD

HOLLYHEDGE ROAD

NEWHEY ROAD

SHAYFIELD ROAD

PANFIELD ROAD

GLADESIDE ROAD

NEARBROOK ROAD

WOODHOUSE LANE

LYNDENE ROAD

BROWNLEY ROAD

LONGHEY ROAD

DOWNES WAY

HILTON ROAD

STENNER LANE

WYNYARD ROAD

A560 ALTRINCHAM ROAD

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-323

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

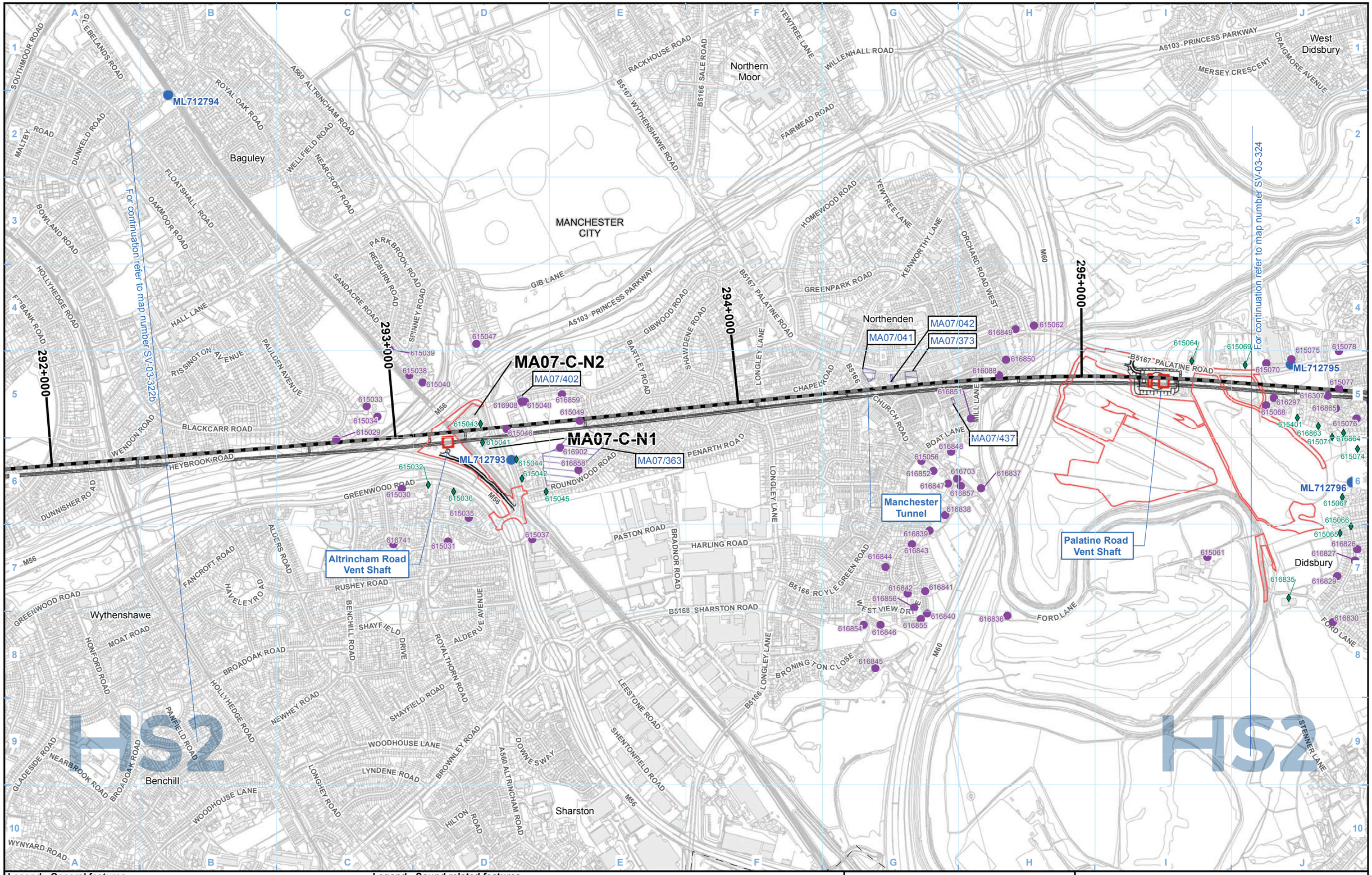
Community Area MA07: Davenport Green to Ardwick

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002029-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

- Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA07) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA07-C-C# and MA07-C-N#, respectively.

Map Number: SV-03-323

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA07: Davenport Green to Ardwick

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002075-P01

Date: 06/09/21

For SNV effects symbology please refer to SV-02 - Legend page

For continuation refer to map number SV-02-323

For continuation refer to map number SV-02-325

Manchester Tunnel

Wilmslow Road Vent Shaft

296+000

297+000

298+000

299+000

ML712795

ML712796

ML712797

ML712799

MA07/073

MA07/077

MA07/445

MA07/465

West Didsbury

MANCHESTER CITY

Withington

Fallowfield

Didsbury

Burnage

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-324

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

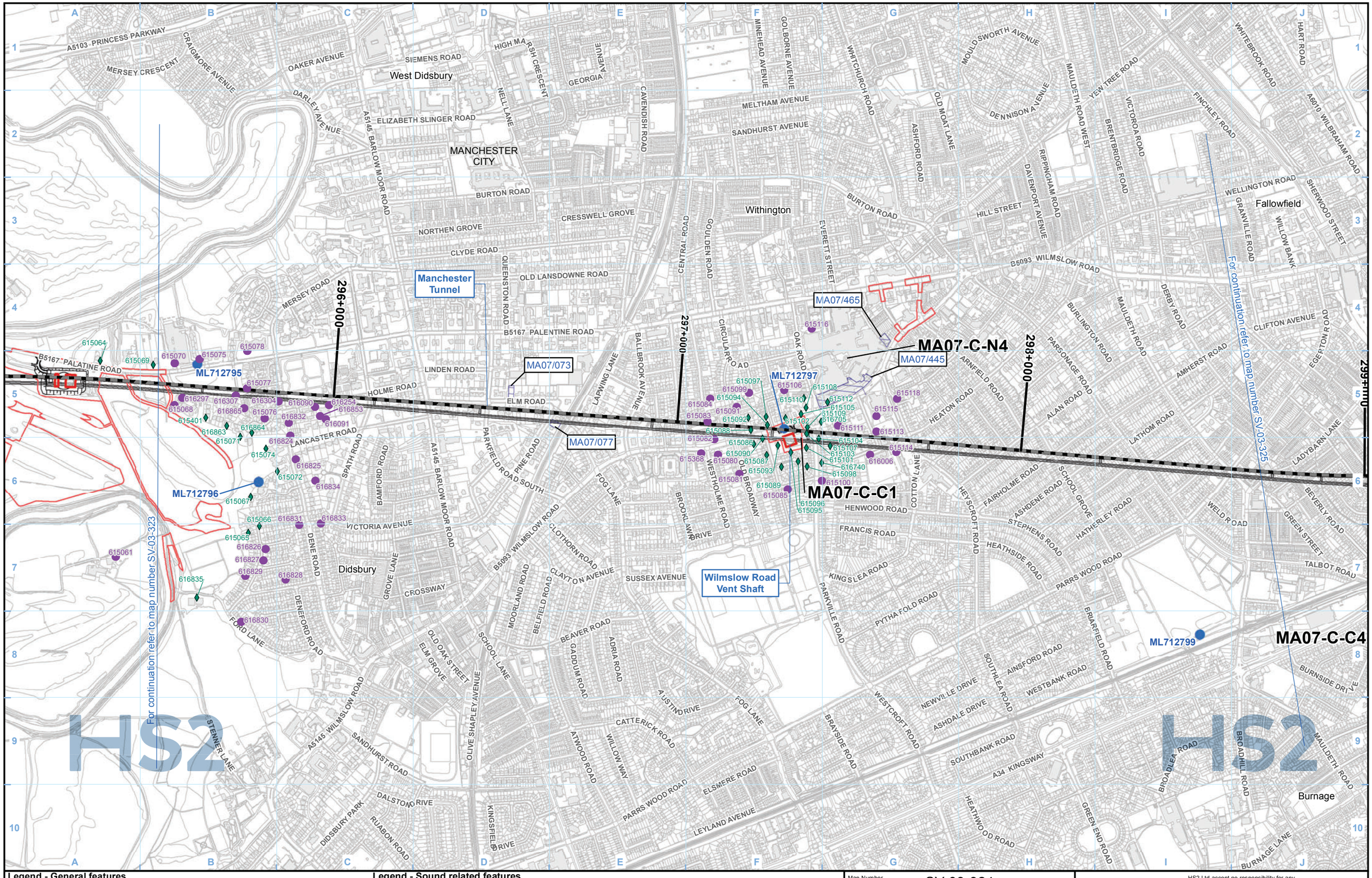
Community Area MA07: Davenport Green to Ardwick

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002030-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA07) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA07-C-C# and MA07-C-N#, respectively.

Map Number: SV-03-324

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA07: Davenport Green to Ardwick

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002076-P01

Date: 06/09/21

For SNV effects symbology please refer to SV-02 - Legend page

For continuation refer to map number SV-02-324

For continuation refer to map number SV-02-326

Birchfields Road Vent Shaft

Manchester Tunnel

MA07/360

MA07/161

ML712772

ML712773

ML712775

ML712791

ML712798

ML712800

299+000

300+000

301+000

302+000

303+000

MANCHESTER CITY

Rusholme

Fallowfield

Longsight

Belle Vue

Gorton

Levenshulme

Burnage

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

Map Number: SV-02-325

Map Name: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

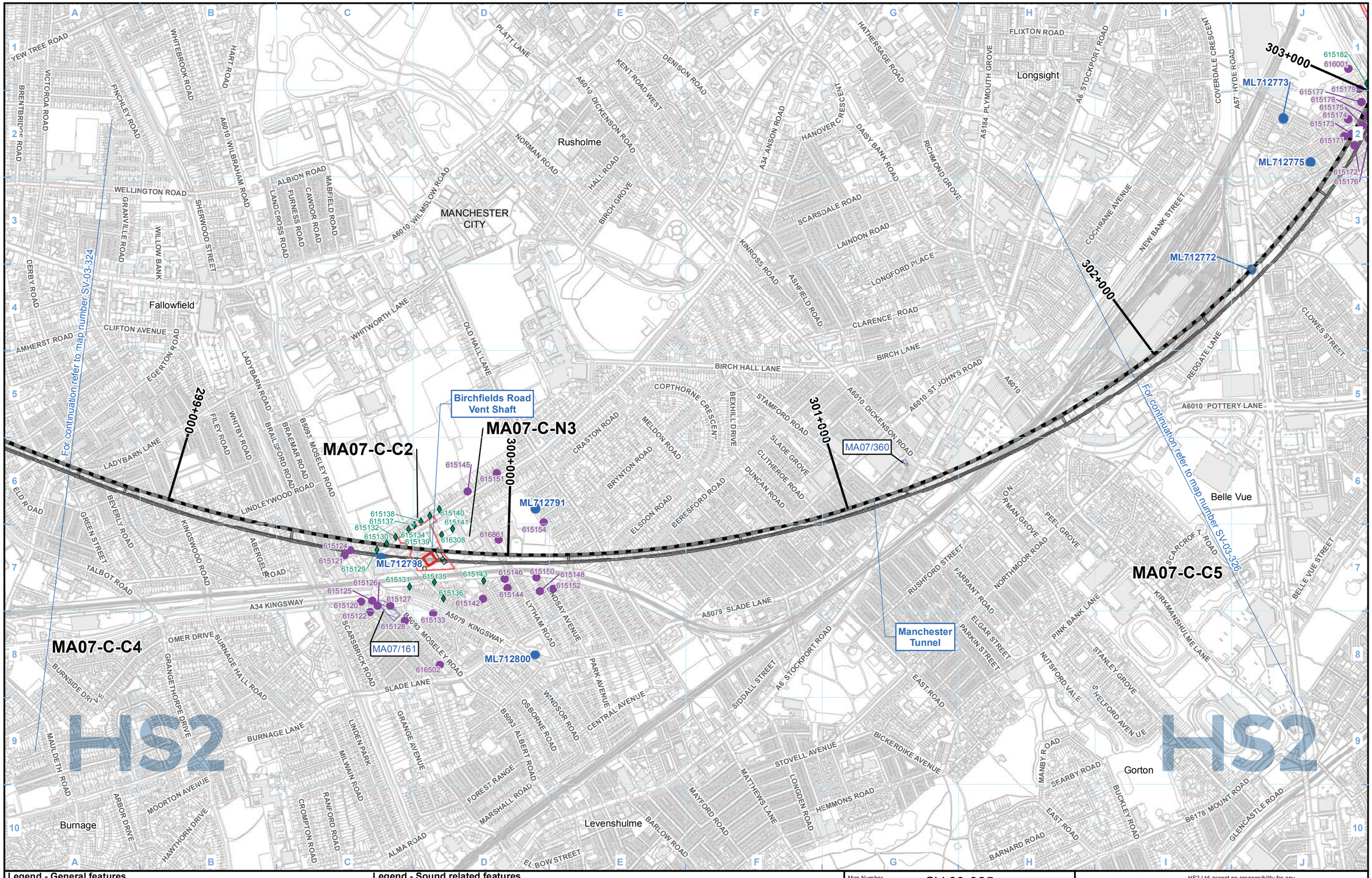
Community Area MA07: Davenport Green to Ardwick

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002031-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

- Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA07) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA07-C-C# and MA07-C-N#, respectively.

Map Number: SV-03-325

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA07: Davenport Green to Ardwick

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

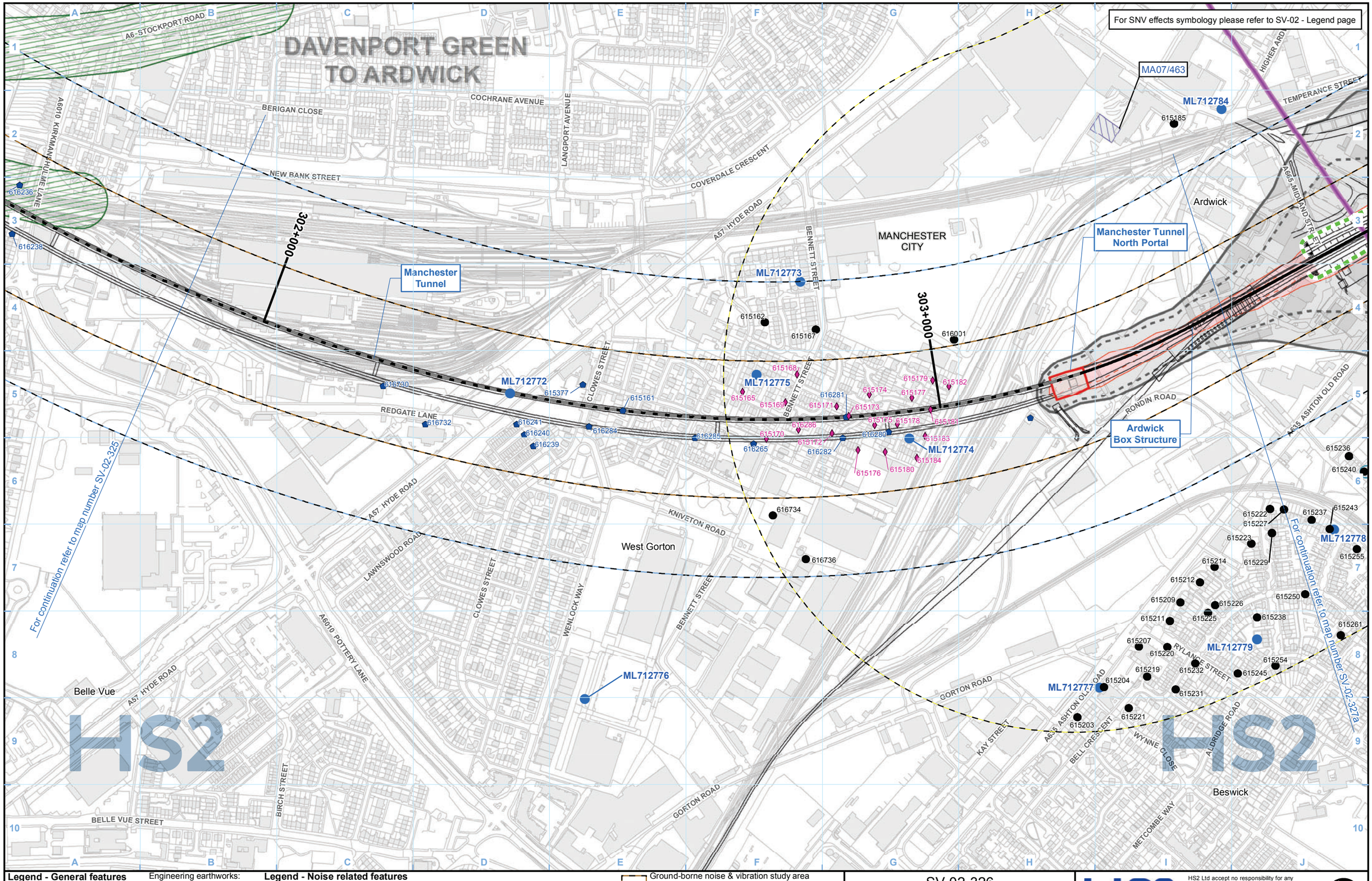
0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002077-P01

Date: 06/09/21

DAVENPORT GREEN TO ARDWICK

For SNV effects symbology please refer to SV-02 - Legend page



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

SV-02-326

Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Community Area MA07: Davenport Green to Ardwick

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:5,000

0 50 100 150 200 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002589-P01

Date: 10/08/21

DAVENPORT GREEN TO ARDWICK

A6 STOCKPORT ROAD
A6010 KIRKMANSHULME LANE
BERIGAN CLOSE
COCHRANE AVENUE
LANGPORT AVENUE
NEW BANK STREET
COVERDALE CRESCENT
A57 HYDE ROAD
BENNETT STREET
MANCHESTER CITY
HIGHER ARDWICK
TEMPERANCE STREET
A665 MIDLAND STREET
Ardwick
RONDIN ROAD
A635 ASHTON OLD ROAD
CLOWES STREET
REDGATE LANE
KNIVETON ROAD
West Gorton
LAWNSWOOD ROAD
WENLOCK WAY
A6010 POTTERY LANE
BIRCH STREET
BELLE VUE STREET
Belle Vue
GORTON ROAD
RYLANCE STREET
KAY STREET
WYNNE CLOSE
ALDRIDGE ROAD
METCOMBE WAY
Beswick

302+000
303+000

Manchester Tunnel
Manchester Tunnel North Portal
Ardwick Box Structure

MA07/463
MA08-C-N1
MA07-C-C3

ML712772
ML712773
ML712774
ML712775
ML712776
ML712777
ML712778
ML712779
ML712784

615174 615177 615179 615182 615171 615173 615181 615178 615175 615172 615183 615176 615180 615184
615185
616001
616734 616733 616736 616735
616891
616893
615236 615240
615227 615222 615237 615243 615229 615223 615255
615214 615212 615209 615226 615250 615211 615225 615238 615261 615220 615207 615219 615232 615254 615231 615245 615204 615203 615221 615217 615202 615215 615201

For continuation refer to map number SV-03-325
For continuation refer to map number SV-03-327a

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks: Embankment, Cutting

Non engineering earthworks: Embankment, Cutting

Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA07) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA07-C-C# and MA07-C-N#, respectively.

Map Number: SV-03-326

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA07: Davenport Green to Ardwick

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:5,000

0 50 100 150 200 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002592-P01

Date: 07/09/21

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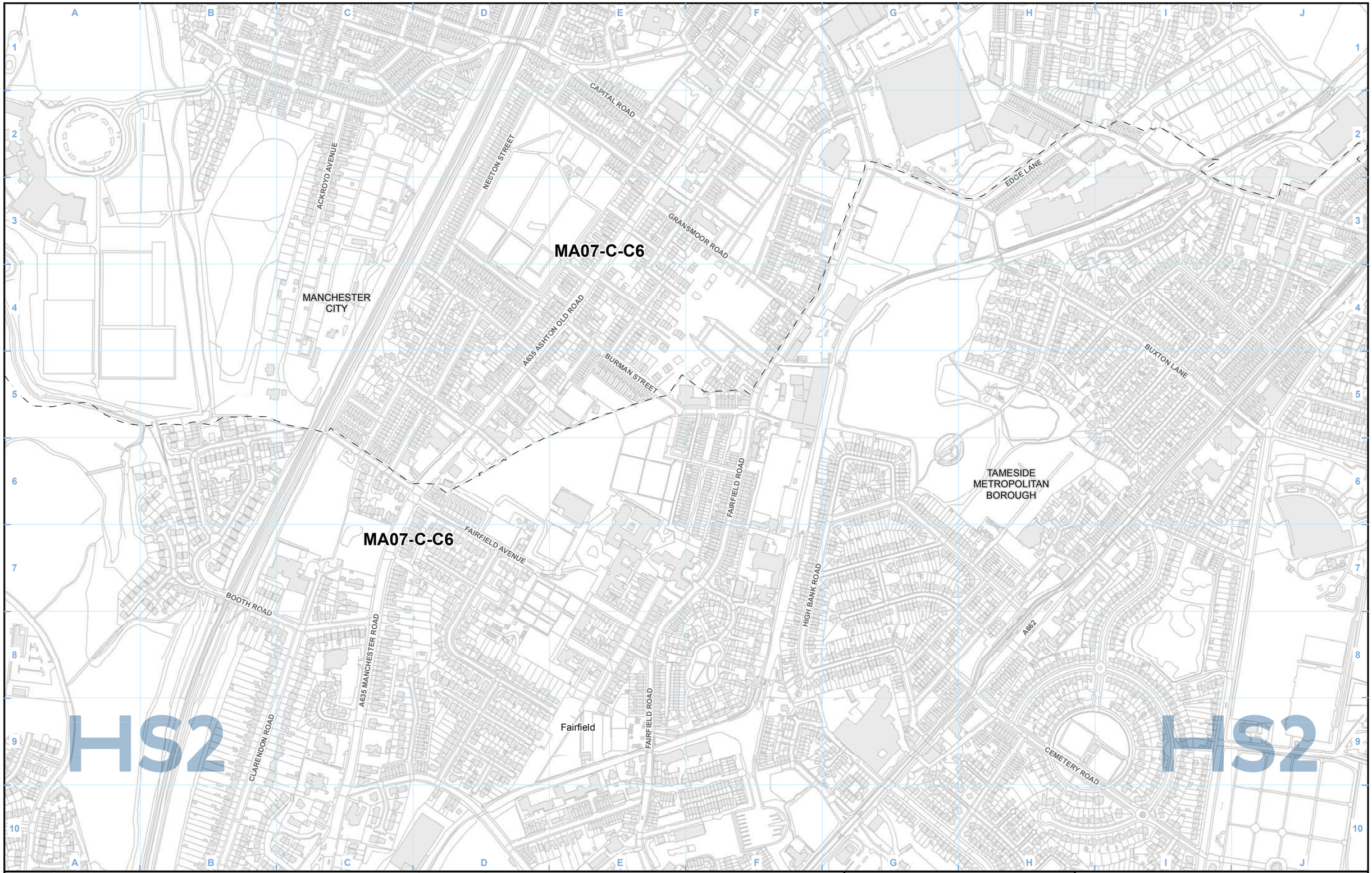


Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

- Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA07) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA07-C-C# and MA07-C-N#, respectively.

Map Number: SV-03-326-R1

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA07: Davenport Green to Ardwick

HS2

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:5,000

0 50 100 150 200 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003940-P01

Date: 07/09/21

For SNV effects symbology please refer to SV-02 - Legend page

DAVENPORT GREEN TO ARDWICK

MANCHESTER PICCADILLY STATION

For continuation refer to map number SV-02-326

MANCHESTER CITY

MANCHESTER

Ardwick

Ancoats

DOLPHIN STREET
ARDWICK GREEN NORTH
A6 DOWNING STREET
A57(M) MANCUNIAN WAY
SACKVILLE STREET
A34 PRINCESS STREET
HIGHER ARDWICK
TEMPERANCE STREET
A635 MANCUNIAN WAY
A6 LONDON ROAD
B6469 WHITWORTH STREET
CHORLTON STREET
MINSHULL STREET
A635 MIDDLETON STREET
B6469 FAIRFIELD STREET
RONDIN ROAD
A665 PIN MILL BROW
A635 ASHTON OLD ROAD
HELMET STREET
GIDDINGS ROAD
CHAPELTOWN STREET
STORE STREET
DUCIE STREET
TARIFF STREET
A6 DALE STREET
A665 GREAT ANCOATS STREET
A62 NEWTON STREET
A62 LEVER STREET
HENRY STREET
VIADUCT STREET
PALMERSTON STREET
EVERY STREET
A662 POLLARD STREET
OLD MILL STREET

304+000

Piccadilly Approach Viaduct
Piccadilly Station Viaduct
Manchester Piccadilly High Speed Station

ML712778
ML712780
ML712781
ML712782
ML712783
ML712784
ML712785
ML712786
ML712787
ML712788
ML712789
ML712790
ML712792
ML712770

MA07/463
MA08/092
MA08/160
MA08/180
MA08/212
MA08/216
MA08/254
MA08/260
MA08/318
MA08/332
MA08/342
MA08/354
MA08/361
MA08/399
MA08/402
MA08/066
MA08/089
MA08/098
MA08/219
MA08/222
MA08/255

MA08-O-C1
MA08-O-C2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

SV-02-327a

Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Community Area MA07: Davenport Green to Ardwick

Scale at A3: 1:5,000

0 50 100 150 200 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002590-P01

Date: 10/08/21

DAVENPORT GREEN TO ARDWICK

MANCHESTER CITY

MANCHESTER

MANCHESTER PICCADILLY STATION

Ardwick

Ancoats

For continuation refer to map number SV-03-326

304+000

MA07/463

MA07-C-C3

MA08-C-N1

MA08-C-N2

MA08-C-N3

MA08-C-N4

MA08-C-N5

MA08-C-N6

MA08-C-N7

MA08-C-C2

MA08-C-N8

MA08-C-N9

MA08-C-N10

MA08-C-N11

MA08-C-N12

MA08-C-N13

MA08-C-N14

MA08-C-N30

MA08-C-N17

MA08-C-N15

MA08-C-N16

MA08-C-N18

MA08-C-N19

MA08-C-N20

MA08-C-C4

MA08-C-C3

MA08-C-N21

MA08-C-N22

MA08-C-C5

MA08-C-C6

MA08-C-C7

MA08-C-C8

MA08-C-N23

MA08-C-N25

MA08-C-N26

MA08-C-N31

MA08-C-N32

MA08-C-N33

MA08-C-N34

MA08-C-C10

MA08-C-C11

MA08-C-N27

MA08-C-N24

MA08-C-C12

MA08-C-C9

MA08-C-N28

MA08-C-N29

ML712778

ML712784

ML712785

ML712786

ML712787

ML712788

ML712789

ML712790

ML712792

ML712783

ML712770

ML712782

ML712780

ML712781

MA08/160

MA08/399

MA08/066

MA08/342

MA08/180

MA08/318

MA08/254

MA08/089

MA08/260

MA08/255

MA08/361

MA08/098

MA08/354

MA08/222

MA08/332

MA08/219

MA08/092

MA08/212

MA08/216

MA08/402

Piccadilly Approach Viaduct

Piccadilly Station Viaduct

Manchester Piccadilly High Speed Station

DOLPHIN STREET

ARDWICK GREEN NORTH

HIGHER ARDWICK

TEMPERANCE STREET

A635 MANCUNIAN WAY

A635 MIDLAND STREET

A6 DOWNING STREET

A57(M) MANCUNIAN WAY

SACKVILLE STREET

A34 PRINCESS STREET

B6469 WHITWORTH STREET

CHORLTON STREET

B6469 FAIRFIELD STREET

A665 PIN MILL BROW

HELMET STREET

GIDDINGS ROAD

A635 ASHTON OLD ROAD

RONDIN ROAD

A665 GREAT ANCOATS STREET

DUCIE STREET

TARIFF STREET

A6 DALE STREET

A62 LEVER STREET

A62 NEWTON STREET

A662 POLLARD STREET

PALMERSTON STREET

EVERY STREET

VIADUCT STREET

OLD MILL STREET

HENRY STREET

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA07) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA07-C-C# and MA07-C-N#, respectively.

Map Number: SV-03-327a

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA07: Davenport Green to Ardwick

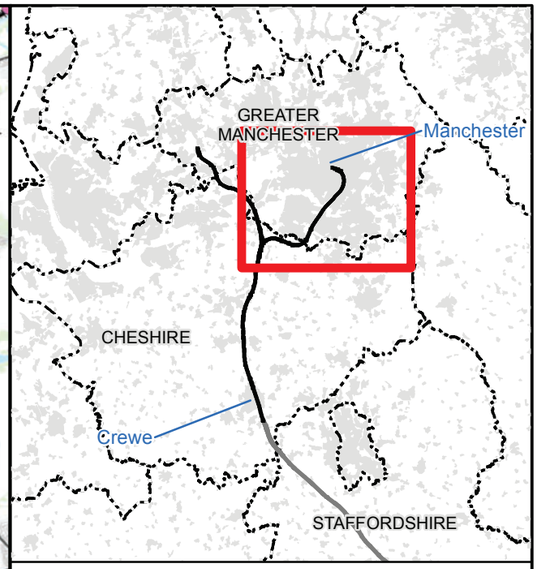
Registered in England. Registration number 06791686. Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:5,000

0 50 100 150 200 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002593-P01

Date: 07/09/21



Map Series Information:

SV-08 presents the predicted daytime operational sound from the new railway.

The sound levels from the new railway (expressed as $_{LpAeq,T}$) are presented in typical noise mapping colours in 5 dB steps. There is a panel at the top right of the figure; this panel contains a key communicating the daytime sound levels represented by the various colours. A corresponding and similar panel is found on SV-02 and SV-09, along with the key sound contours that were used within the environmental assessment.

Also presented on SV-08 are the following (which are also included on SV-02):

• A representation of the Proposed Scheme, including the railway alignment (indicating whether it is on the surface or in tunnel), any new and altered roads and all associated engineering and environmental mitigation earthworks;

• blue and green lines representing the wayside airborne noise mitigation measures included in the Proposed Scheme;

• the extent of the study area within which the direct impacts and effects of the scheme have been quantitatively assessed.

A more detailed explanation of each legend item included on the figures can be found in the data dictionary.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-08-INDEX-MA07

Map Name: Index Map of: Daytime Operational Sound Contour Maps

Community Area MA07: Davenport Green to Ardwick

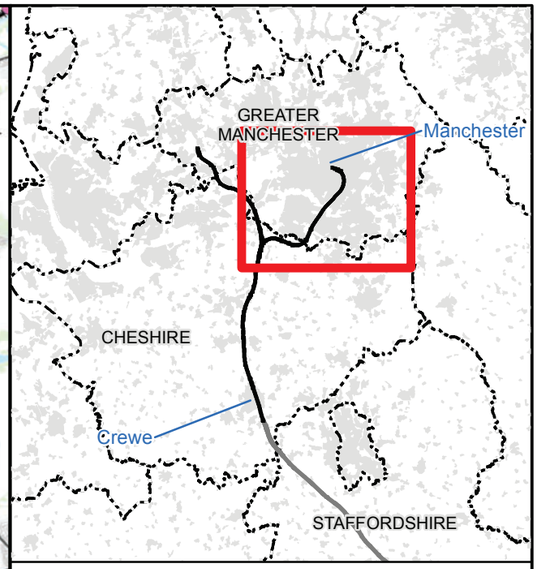
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:100,000

0 1,000 2,000 3,000 4,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003078-P01

Date: 06/09/21



Map Series Information:

SV-09 presents the predicted night-time operational sound from the new railway.

The sound levels from the new railway (expressed as $_{LpAeq,T}$) are presented in typical noise mapping colours in 5 dB steps. There is a panel at the top right of the figure; this panel contains a key communicating the night-time sound levels represented by the various colours. A corresponding and similar panel is found on SV-02 and SV-08, along with the key sound contours that were used within the environmental assessment.

Also presented on SV-09 are the following (which are also included on SV-02):

• A representation of the Proposed Scheme, including the railway alignment (indicating whether it is on the surface or in tunnel), any new and altered roads and all associated engineering and environmental mitigation earthworks;

• blue and green lines representing the wayside airborne noise mitigation measures included in the Proposed Scheme;

• the extent of the study area within which the direct impacts and effects of the scheme have been quantitatively assessed.

A more detailed explanation of each legend item included on the figures can be found in the data dictionary.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-09-INDEX-MA07

Map Name: Index Map of: Night-time Operational Sound Contour Maps

Community Area MA07: Davenport Green to Ardwick

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:100,000

0 1,000 2,000 3,000 4,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003119-P01

Date: 06/09/21

HULSEHEATH TO MANCHESTER AIRPORT

DAVENPORT GREEN TO ARDWICK

HS2 (rail only) sound level $L_{pAeq,T}$

Daytime $L_{pAeq,T}$ (T=07:00 to 23:00)

- > 70 dB
- 65 to 70 dB
- 60 to 65 dB
- 55 to 60 dB
- 50 to 55 dB
- < 50 dB

Hale Barns
THE MOUNT
TITHEBARN ROAD
RYDAL DRIVE
A538 HALE ROAD
For continuation refer to map number SV-08-321
TRAFFORD METROPOLITAN BOROUGH
Davenport Green
SHAY LANE
ROARING GATE LANE
Chapel House Farm
WHITECARR LANE
BROOKS DRIVE
ENNIS CLOSE
FLOATS ROAD
LEDSON ROAD
TILSON ROAD
MANCHESTER CITY
Baguley
CLAY LANE
FOURACRES ROAD
BOWLAND ROAD
OAKMOOR ROAD
FLOATSHALL ROAD
WASTDALE ROAD
AMBERLEY DRIVE
FIRBANK ROAD
HOLLYHEDGE ROAD
HALL LANE
RISSINGTON AVENUE
Hasty Lane Overbridge
289+000
290+000
291+000
292+000
Manchester Tunnel South Portal
Manchester Tunnel
THORLEY LANE
CROWLAND ROAD
FOXFIELD ROAD
GREENBROW ROAD
Newall Green
CHALFORD ROAD
WHITBURN ROAD
COLSHAW ROAD
MILLBROOK ROAD
TUFFLEY ROAD
OLDWOOD ROAD
BARNWOOD ROAD
WENDON ROAD
BLACKCARR ROAD
HEYBROOK ROAD
FIRBANK ROAD
DUNNISHER ROAD
M56
HASTY LANE
Thorley Lane Overbridge
Manchester Airport High Speed Station
RUNGER LANE
SYDNEY AVENUE
AVRO WAY
PALMA AVENUE
BLEASDALE ROAD
BARROWFIELD ROAD
CHATCOMBE ROAD
FLAXCROFT ROAD
PORTWAY
SIMONSWAY
GREATFIELD ROAD
GREENWOOD ROAD
SHAWBURY ROAD
FANCROFT ROAD
HAVELEY ROAD
ALDERS ROAD
MOAT ROAD
HONFORD ROAD
Wythenshawe
BROADOAK ROAD
HOLLYHEDGE ROAD
PANFIELD ROAD
NEWHEY ROAD
GLADESIDE ROAD
NEARBROOK ROAD
BROADOAK ROAD
Benchill
WOODHOUSE LANE
LONGHEY ROAD
WYNYARD ROAD
POUNDSWICK LANE
CRICKLEWOOD ROAD
LONGLEVENS ROAD
ULLSWATER ROAD
DEVOKE ROAD
GREYFRIARS ROAD
COTEFIELD ROAD
LONGHOPE ROAD
PLOWDEN ROAD
PANSWICK ROAD
PORTWAY

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-08-322b

Map Name: Daytime Operational Sound Contour Maps

Community Area MA07: Davenport Green to Ardwick

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003107-P01

Date: 10/08/21

HULSEHEATH TO MANCHESTER AIRPORT

DAVENPORT GREEN TO ARDWICK

HS2 (rail only) sound level $L_{pAeq,T}$

Night-time $L_{pAeq,T}$ (T=23:00 to 07:00)

- > 60 dB
- 55 to 60 dB
- 50 to 55 dB
- 45 to 50 dB
- 40 to 45 dB
- < 40 dB

Hasty Lane Overbridge

Manchester Tunnel South Portal

Manchester Tunnel

Thorley Lane Overbridge

Manchester Airport High Speed Station

289+000

290+000

291+000

292+000

For continuation refer to map number SV-09-321

Hale Barns

Davenport Green

Chapel House Farm

TRAFFORD METROPOLITAN BOROUGH

MANCHESTER CITY

Newall Green

Baguley

Wythenshawe

Benchill

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-09-322b

Map Name: Night-time Operational Sound Contour Maps

Community Area MA07: Davenport Green to Ardwick

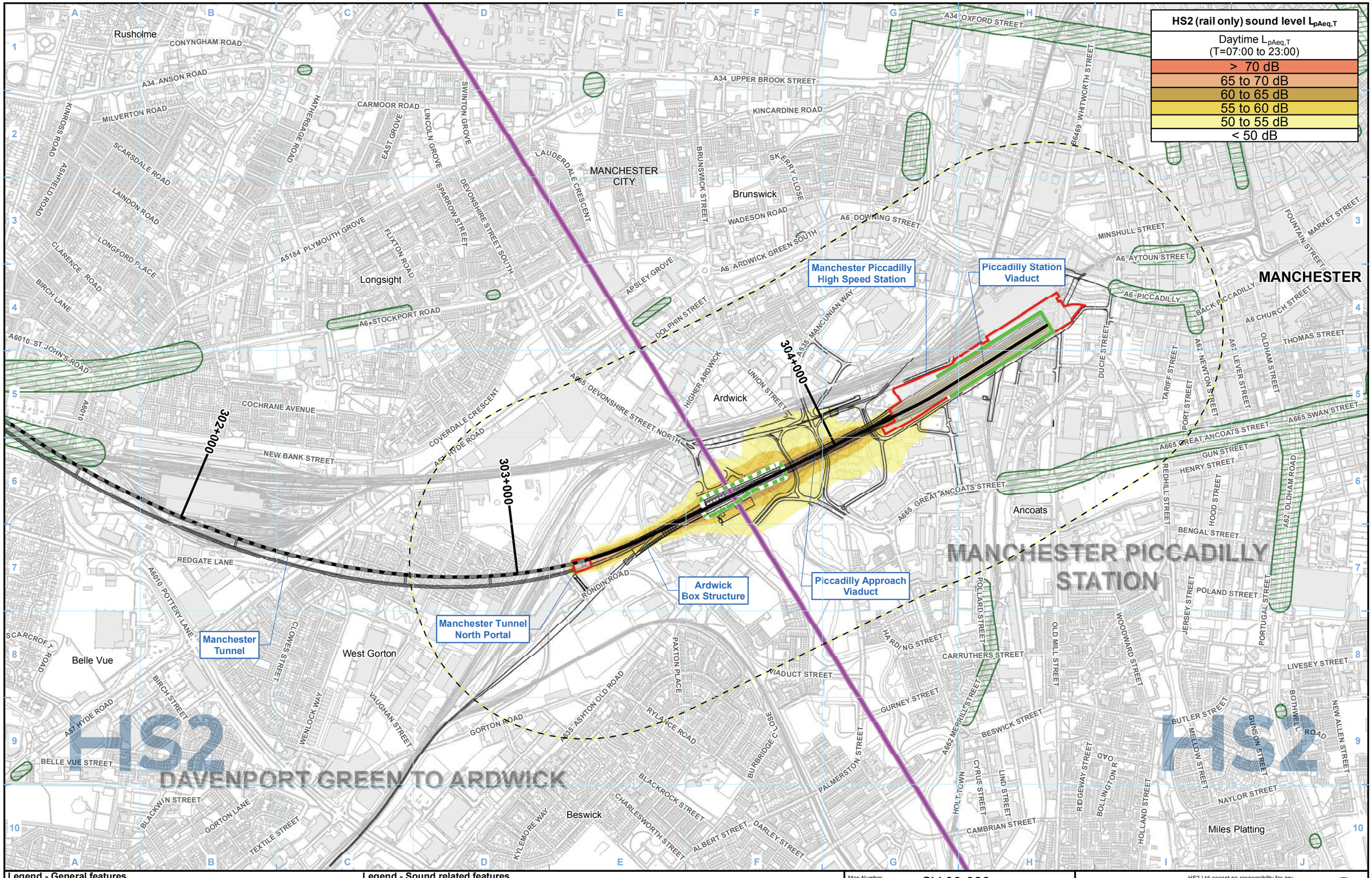
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003148-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-08-326a

Map Name: Daytime Operational Sound Contour Maps

Community Area MA07: Davenport Green to Ardwick

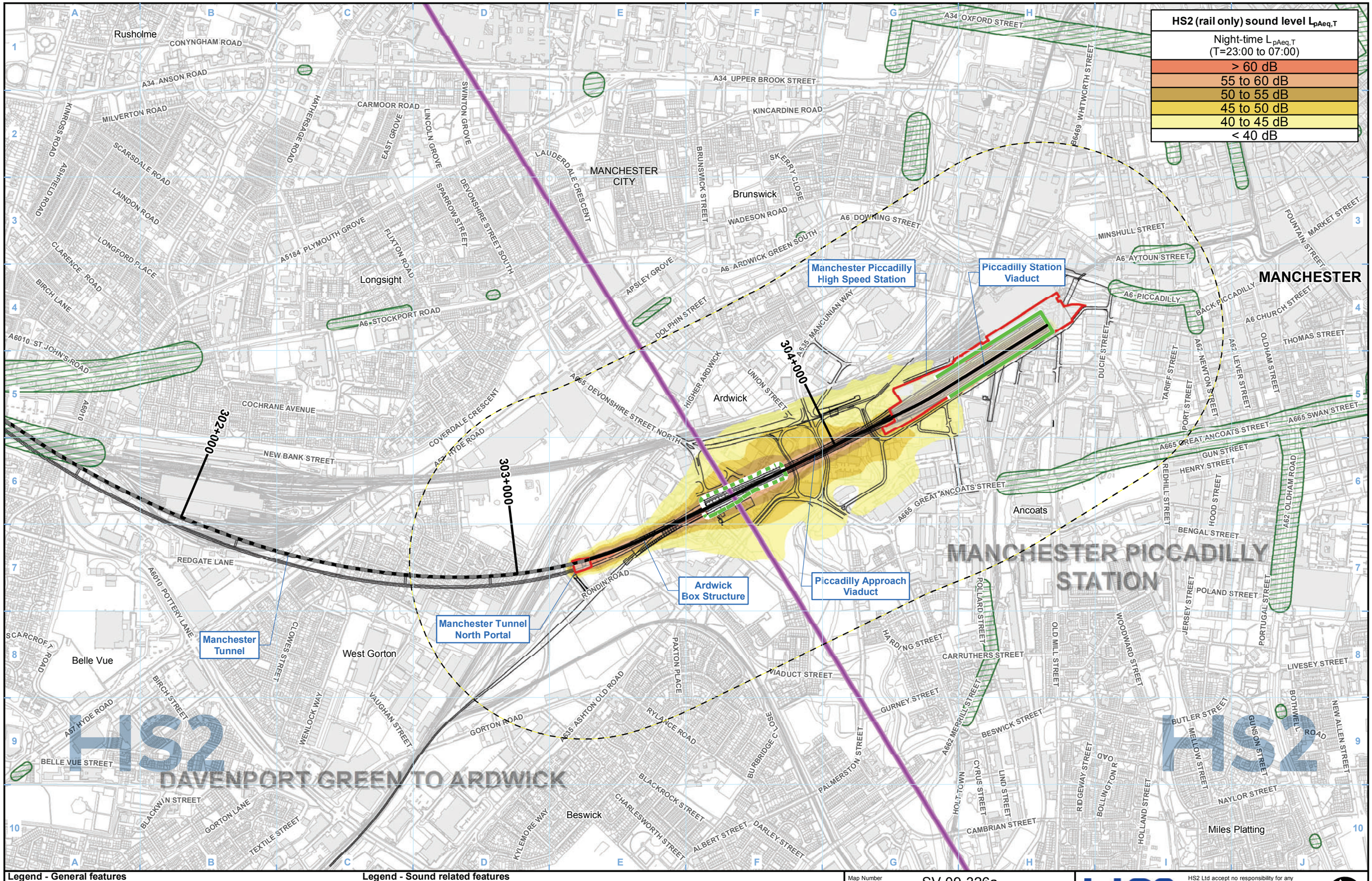
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003111-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-09-326a

Map Name: Night-time Operational Sound Contour Maps

Community Area MA07: Davenport Green to Ardwick

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003152-P01

Date: 10/08/21

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HS2

High Speed Rail (Crewe – Manchester) Environmental Statement

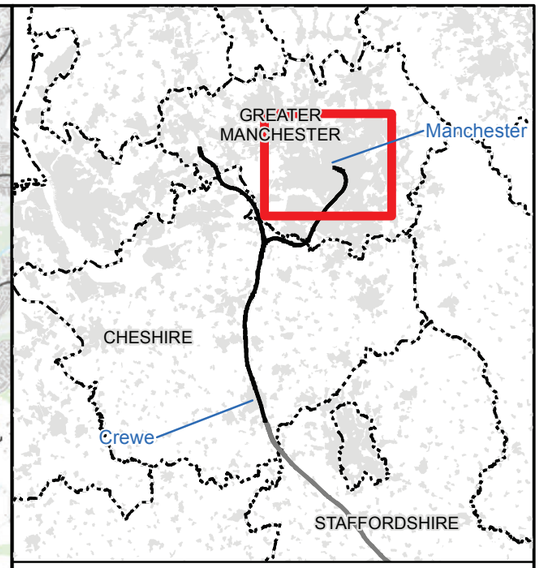
MA08: Manchester Piccadilly Station

SV-02 - Operational Noise and Vibration Impacts and Likely Significant Effects (with Assessment Location)

SV-03 - Assessment and Monitoring Locations for Construction Sound, Noise and Vibration Assessments

SV-08 - Daytime Operational Sound Contour Maps

SV-09 - Night-time Operational Sound Contour Maps



Map Series Information:

SV-02 presents the direct operational noise impacts and likely significant effects of the Proposed Scheme.

The SV-02 figure series necessarily contains a large amount of information relating to the operational noise and vibration assessment. It is designed to communicate visually the assessment process from the prediction of impacts to the determination of likely residual significant effects. The corresponding text is included in Vol2 and Vol5.

Key items on the map include the following:

- The Proposed Scheme (the proposed railway alignments and surrounding associated earthworks/roads);
- blue and green lines representing the wayside airborne noise mitigation measures included in the Proposed Scheme;
- the study areas, which indicate the areas within which direct sound and vibration impacts of the scheme have been quantitatively assessed;
- the calculated direct operational impacts of the scheme, displayed as colour-coded buildings and symbols representing buildings that would potentially qualify for noise insulation;
- sound contours representing sound produced by the new railway (displayed in a simpler manner than on SV-08 and SV-09 in order not to obscure the features on the map series);
- the assessment locations at which a quantitative prediction of sound and impacts have been carried out (representing a number of nearby buildings). These are labelled with a unique reference number to enable cross-reference to further detail regarding the assessments in Volume 5: Appendix SV-003-0MA0X; and
- labels indicating where the likely residual direct noise or vibration significant effects have been identified. These are labelled with a unique reference number to enable cross-reference to further detail regarding the assessments in Volume 5: Appendix SV-003-0MA0X.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

A more detailed explanation of each legend item included on the figures and on the separate legend page can be found in the data dictionary.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-02-INDEX-MA08

Map Name: Index Map of: Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Community Area MA08: Manchester Piccadilly Station

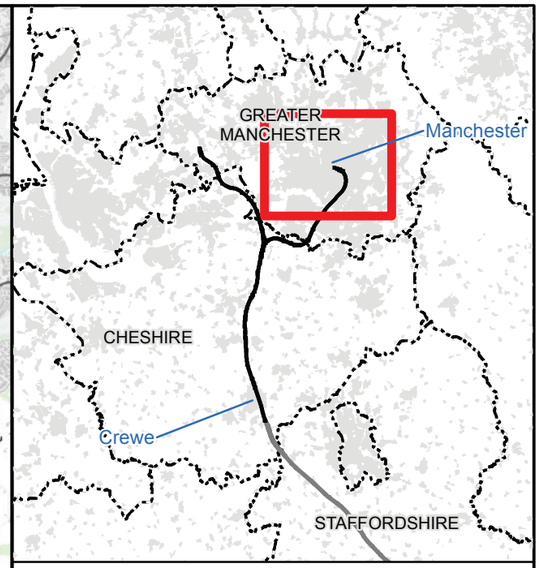
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:75,000

0 750 1,500 2,250 3,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002044-P01

Date: 10/08/21



Map Series Information:

The SV-03 figure series accompanies the construction noise & vibration assessments. It shows the locations at which a quantitative assessment of the direct effects of construction noise and/or vibration has been carried out. These are labelled as assessment locations with a reference number to enable cross-reference to the construction noise and vibration reports contained in Volume 5: Appendix SV-002-0MA08.

The figure series also shows locations at which baseline sound measurements were carried out.
These baseline measurement locations are labelled with a reference number to enable cross-reference to the baseline sound reports contained in Volume 5: Appendix SV-002-0MA08.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

A more detailed explanation of each legend item included on the figures can be found in the data dictionary.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-03-INDEX-MA08

Map Name: Index Map of: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA08: Manchester Piccadilly Station

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:75,000

0 750 1,500 2,250 3,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002090-P01

Date: 06/09/21

HS2 (rail only) noise level $L_{pAeq,T}$		Potential noise effect[1, 2]	
Night-time $L_{pAeq,T}$ (T=23:00 to 07:00)	Daytime $L_{pAeq,T}$ (T=07:00 to 23:00)	**Residential**	**Non-residential & quiet areas**
> 55 dB	> 65 dB	Likely significant effect on dwellings indicated by ◯, ✳ or ✕ avoided by noise insulation	Effect dependent on receptor and baseline. For further details see Volume 5, Appendix SV-003-0MA0X. Likely significant effect indicated by MA0X-O-N#[2]
40 to 55 dB	50 to 65 dB	Effect dependent on noise level change and significance criteria. Likely significant effects on groups of dwellings and any shared community open areas indicated by MA0X-O-C#[2]	
< 40 dB	< 50 dB	Generally no adverse effect expected[1]	

Operational airborne noise impacts at residential buildings[1]

- Major adverse
- Moderate adverse
- Minor adverse
- Negligible
- Beneficial

- ◯ Potential additional noise insulation (triggered by maximum noise levels at night)[1]
- ✳ Potential additional noise insulation (triggered by WHO Night Noise Guidelines Interim Target)[1]
- ✕ Potential noise insulation (triggered by Noise Insulation Regulations 1996)[1]
- ◯ L_{pAFmax} exceeds 60dB façade HS2 train only L_{pAFmax} +2.5dB façade correction

▭ Ground-borne noise or vibration impact at residential buildings

[1] For further information see Volume 5 Appendix SV-001-00000
[2] For details see relevant Volume 5 Appendix SV-003-0MA0X

SV-02 - Legend

Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Doc Number: -

Date:

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For SNV effects symbology please refer to SV-02 - Legend page

DAVENPORT GREEN TO ARDWICK

MANCHESTER PICCADILLY STATION

MANCHESTER CITY

MANCHESTER

Ardwick

Ancoats

DOLPHIN STREET
ARDWICK GREEN NORTH
A6 DOWNING STREET
A57(M) MANCUNIAN WAY
SACKVILLE STREET
A34 PRINCESS STREET
B6469 WHITWORTH STREET
HIGHER ARDWICK
A6 LONDON ROAD
Piccadilly Approach Viaduct
A635 MANCUNIAN WAY
TEMPERANCE STREET
Piccadilly Station Viaduct
Manchester Piccadilly High Speed Station
CHORLTON STREET
MINSHULL STREET
B6469 FAIRFIELD STREET
A635 MIDDLETON STREET
304+000
For continuation refer to map number SV-02-326
RONDIN ROAD
A635 ASHTON OLD ROAD
A665 PIN MILL BROW
HELMET STREET
GIDDINGS ROAD
STORE STREET
CHAPELTOWN STREET
DUCIE STREET
TARIFF STREET
A6 DALE STREET
A665 GREAT ANCOATS STREET
A62 NEWTON STREET
A62 LEVER STREET
A662 POLLARD STREET
EVERY STREET
PALMERSTON STREET
VIADUCT STREET
OLD MILL STREET
HENRY STREET

ML712784 ML712785 ML712786 ML712787 ML712788 ML712789 ML712790 ML712792
ML712778 ML712780 ML712781 ML712782 ML712783 ML712770

MA07/463 MA08/160 MA08/399 MA08/066 MA08/342 MA08/180 MA08/318 MA08/089 MA08/254 MA08/354 MA08/222 MA08/098 MA08/332 MA08/219 MA08/212 MA08/216 MA08/092 MA08/361 MA08/255 MA08/260 MA08/402

MA08-O-C1 MA08-O-C2

615185 615186 615187 615188 615189 615190 615191 615192 615193 615194 615195 615196 616506 616507 616888 616889 616890
615210 615224 615234 615241 615251 615263 615264 615266 615268 615273 615277 615279 615286 615287 615291 615292 615293 615298 615299 615300 615303 615304 615305 615306 615308 615309 615310 615311 615312 615315 615316 615317 615318 615319 615320 615321 615324 615325 615326 615327 615328 615329 615330 615331 615332 615333 615334 615335 615337 615338 615339 615341 615342 615344 615345 615346 615347 615348 615349 615351 615352 615354 615355 615357 615358 615359 615360 615361 615362 615363 615365 615366 615367 615369 615370 615378 615381 615382 615383 615384 615385 615386 615387 615388 615391 615393 615218 615242 615248 615253 615258 615267 616003 616004 616005 616006 616007 616894 616895 616896 616897 616898 616899 616900 616504 615222 615214 615223 615227 615229 615236 615237 615240 615243 615249 615250 615254 615255 615257 615259 615260 615261 615262 615269 615270 615271 615274 615275 615276 615278 615280 615282 615283 615284 615288 615289 615294 615297 615301 615302 615307 615313 615314 615322 615323 615336 615340 615343 615356

Legend - General features
- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Noise related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers (labelled with total noise barrier height above rail)
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

- Noise Important Areas defined in national noise action plans (Defra 2014)
- Committed developments - SV Only
- Airborne noise study area
- Ground-borne noise & vibration study area (residential and non-residential)
- Ground-borne noise & vibration study area (highly sensitive non-residential)
- Airborne noise assessment location
- Airborne noise and vibration assessment location
- Ground-borne noise and/or vibration assessment location
- Airborne noise, ground-borne sound and vibration assessment location
- Baseline measurement locations

SV-02-327b

Operational Airborne Noise and Vibration Impacts and Likely Significant Effects

Community Area MA08: Manchester Piccadilly Station

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:5,000

0 50 100 150 200 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002591-P01

Date: 10/08/21

DAVENPORT GREEN TO ARDWICK

MANCHESTER CITY

MANCHESTER

Ardwick

Ancoats

MANCHESTER PICCADILLY STATION

For continuation refer to map number SV-03-326

For continuation refer to map number SV-03-327b-L1

Piccadilly Approach Viaduct

Piccadilly Station Viaduct

Manchester Piccadilly High Speed Station

304+000

DOLPHIN STREET
ARDWICK GREEN NORTH
A6 DOWNING STREET
A57(M) MANCUNIAN WAY
SACKVILLE STREET
A34 PRINCESS STREET
B6469 WHITWORTH STREET
HIGHER ARDWICK
TEMPERANCE STREET
A635 MANCUNIAN WAY
A635 MIDLAND STREET
B6469 FAIRFIELD STREET
CHORLTON STREET
RONDIN ROAD
A635 ASHTON OLD ROAD
A665 PIN MILL BROW
HELMET STREET
GIDDINGS ROAD
A665 GREAT ANCOATS STREET
DUCIE STREET
TARIFF STREET
A6 DALE STREET
VIADUCT STREET
PALMERSTON STREET
EVERY STREET
A662 POLLARD STREET
OLD MILL STREET
A62 NEWTON STREET
A62 LEVER STREET
HENRY STREET

MA08-C-N1
MA08-C-N2
MA08-C-N3
MA08-C-N4
MA08-C-N5
MA08-C-N6
MA08-C-N7
MA08-C-C2
MA08-C-N8
MA08-C-N9
MA08-C-N10
MA08-C-N11
MA08-C-N12
MA08-C-N13
MA08-C-N14
MA08-C-N30
MA08-C-N17
MA08-C-N15
MA08-C-N33
MA08-C-N32
MA08-C-N31
MA08-C-N16
MA08-C-N18
MA08-C-N19
MA08-C-N20
MA08-C-C4
MA08-C-C3
MA08-C-N21
MA08-C-N23
MA08-C-C5
MA08-C-C6
MA08-C-C7
MA08-C-C8
MA08-C-N25
MA08-C-N26
MA08-C-C9
MA08-C-N22
MA08-C-C10
MA08-C-C11
MA08-C-N27
MA08-C-N24
MA08-C-N34
MA08-C-C12
MA08-C-N28
MA08-C-N29
MA07-C-C3

MA07/463
MA08/160
MA08/399
MA08/066
MA08/342
MA08/180
MA08/318
MA08/254
MA08/089
MA08/354
MA08/222
MA08/098
MA08/332
MA08/219
MA08/212
MA08/216
MA08/092
MA08/361
MA08/255
MA08/260
MA08/402

ML712784
ML712785
ML712786
ML712787
ML712788
ML712789
ML712790
ML712792
ML712783
ML712770
ML712782
ML712780
ML712781
ML712778

HS2

Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks: Embankment, Cutting

Non engineering earthworks: Embankment, Cutting

Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA08) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA08-C-C# and MA08-C-N#, respectively.

Map Number: SV-03-327b

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA08: Manchester Piccadilly Station

Scale at A3: 1:5,000

0 50 100 150 200 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002594-P01

Date: 07/09/21

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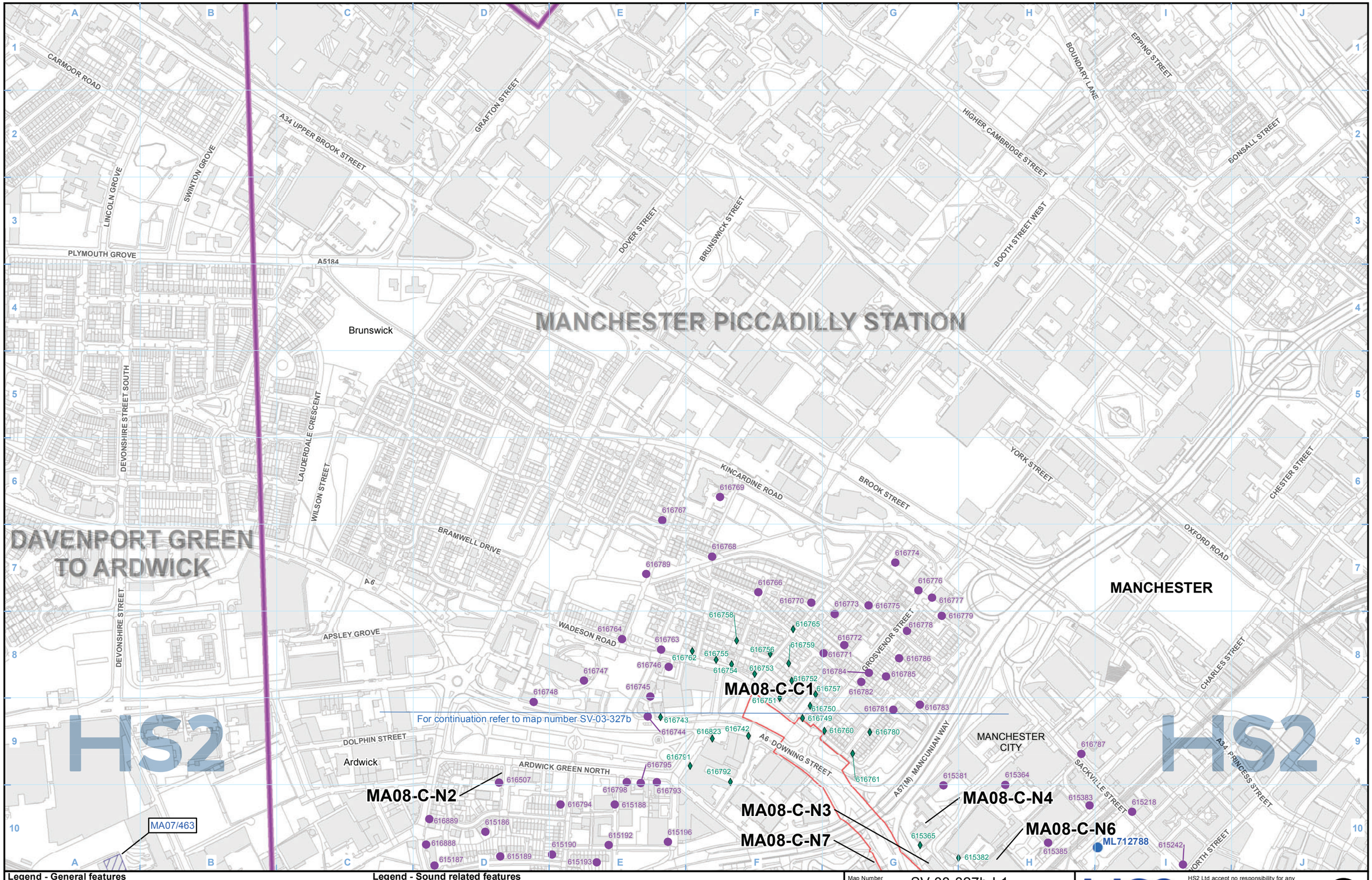


Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

- Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment location
- Construction airborne sound and vibration assessment location
- Baseline measurement location

labelled with assessment location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0MA08) (labelled with measurement location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by MA08-C-C# and MA08-C-N#, respectively.

Map Number: SV-03-327b-L1

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Community Area MA08: Manchester Piccadilly Station

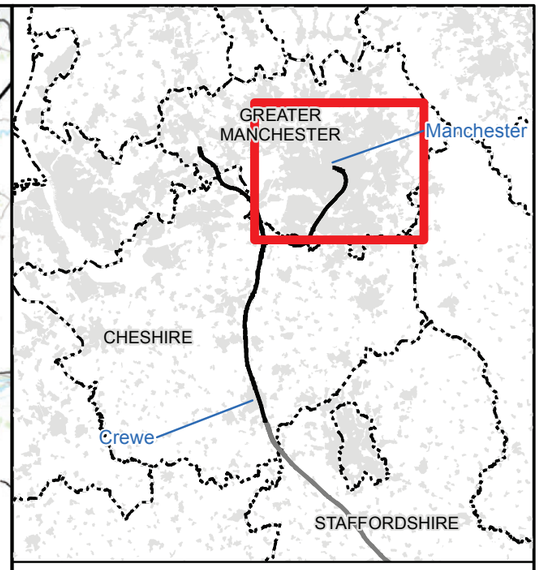
Registered in England. Registration number 06791686. Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:5,000

0 50 100 150 200 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002595-P01

Date: 07/09/21



Map Series Information:

SV-08 presents the predicted daytime operational sound from the new railway.

The sound levels from the new railway (expressed as $_{LpAeq,T}$) are presented in typical noise mapping colours in 5 dB steps. There is a panel at the top right of the figure; this panel contains a key communicating the daytime sound levels represented by the various colours. A corresponding and similar panel is found on SV-02 and SV-09, along with the key sound contours that were used within the environmental assessment.

Also presented on SV-08 are the following (which are also included on SV-02):

• A representation of the Proposed Scheme, including the railway alignment (indicating whether it is on the surface or in tunnel), any new and altered roads and all associated engineering and environmental mitigation earthworks;

• blue and green lines representing the wayside airborne noise mitigation measures included in the Proposed Scheme;

• the extent of the study area within which the direct impacts and effects of the scheme have been quantitatively assessed.

A more detailed explanation of each legend item included on the figures can be found in the data dictionary.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-08-INDEX-MA08

Map Name: Index Map of: Daytime Operational Sound Contour Maps

Community Area MA08: Manchester Piccadilly Station

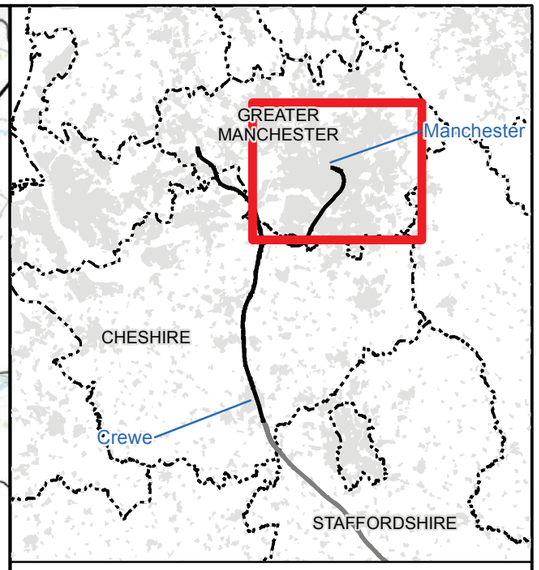
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:100,000

0 1,000 2,000 3,000 4,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003079-P01

Date: 06/09/21



Map Series Information:

SV-09 presents the predicted night-time operational sound from the new railway.

The sound levels from the new railway (expressed as $_{LpAeq,T}$) are presented in typical noise mapping colours in 5 dB steps. There is a panel at the top right of the figure; this panel contains a key communicating the night-time sound levels represented by the various colours. A corresponding and similar panel is found on SV-02 and SV-08, along with the key sound contours that were used within the environmental assessment.

Also presented on SV-09 are the following (which are also included on SV-02):

• A representation of the Proposed Scheme, including the railway alignment (indicating whether it is on the surface or in tunnel), any new and altered roads and all associated engineering and environmental mitigation earthworks;

• blue and green lines representing the wayside airborne noise mitigation measures included in the Proposed Scheme;

• the extent of the study area within which the direct impacts and effects of the scheme have been quantitatively assessed.

A more detailed explanation of each legend item included on the figures can be found in the data dictionary.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-09-INDEX-MA08

Map Name: Index Map of: Night-time Operational Sound Contour Maps

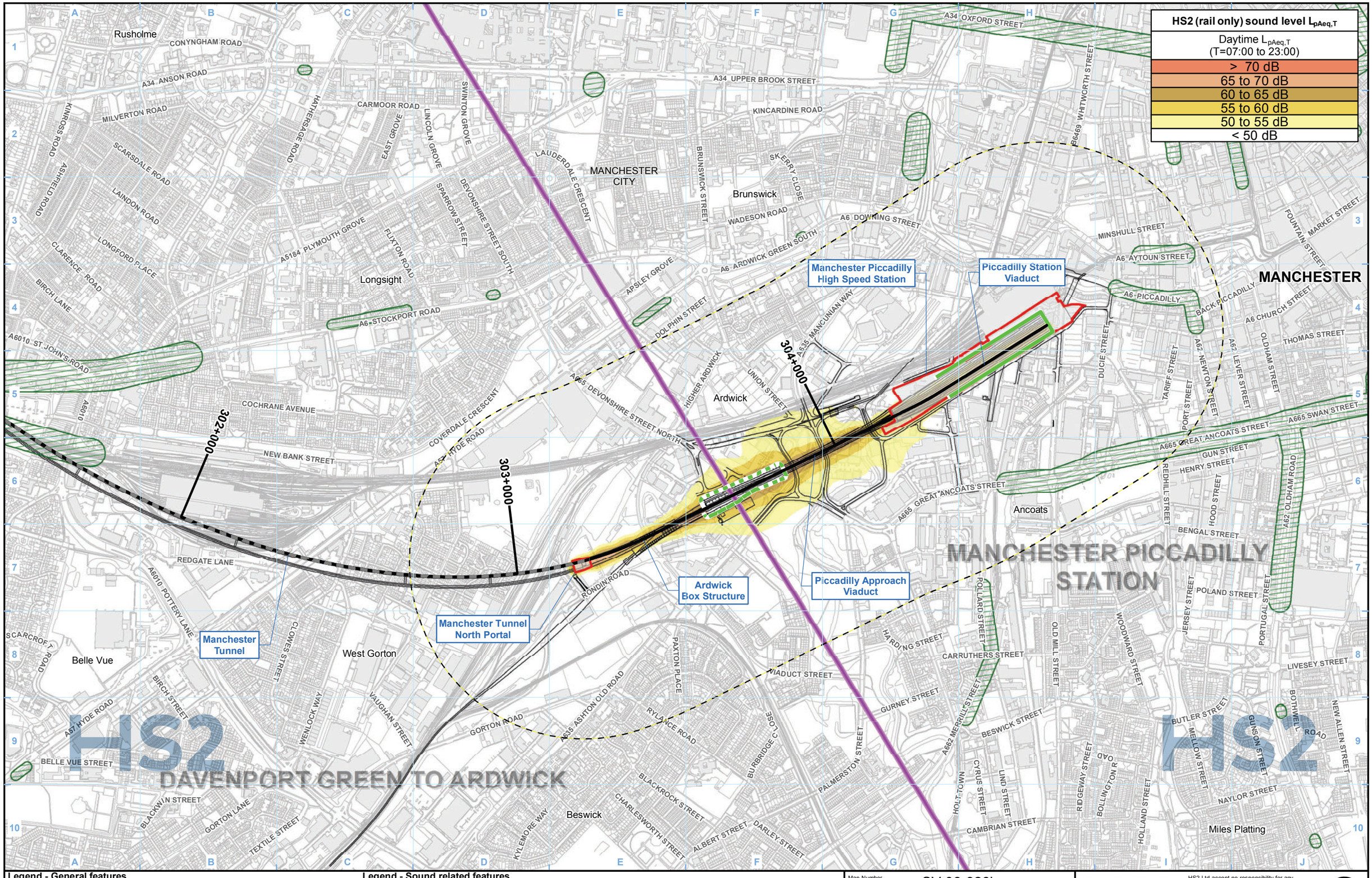
Community Area MA08: Manchester Piccadilly Station

Scale at A3: 1:100,000

0 1,000 2,000 3,000 4,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003120-P01

Date: 06/09/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-08-326b

Map Name: Daytime Operational Sound Contour Maps

Community Area MA08: Manchester Piccadilly Station

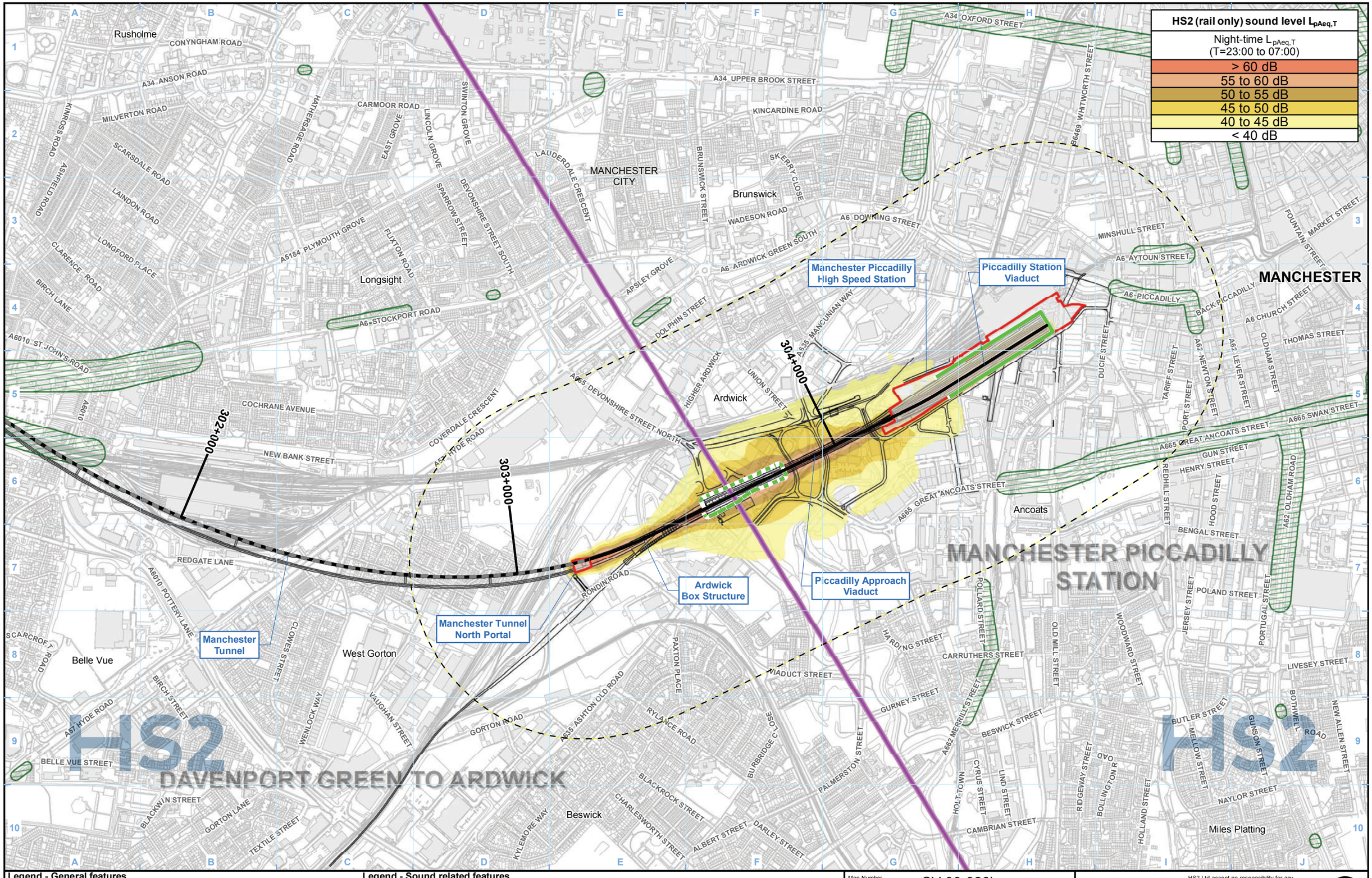
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003112-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

Legend - Sound related features

Envisaged mitigation to avoid / reduce significant noise effects:
- Landscaping and/or fence barriers*
- Engineering e.g. cuttings (green tunnels separately marked)

Envisaged features further reducing noise effects:
- Other environmental e.g. landscaping
- Engineering e.g. cuttings

* Labelled with total barrier height above rail level

- Airborne noise study area
- Noise Important Areas defined in national noise action plans (Defra 2019)

Map Number: SV-09-326b

Map Name: Night-time Operational Sound Contour Maps

Community Area MA08: Manchester Piccadilly Station

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-003153-P01

Date: 10/08/21

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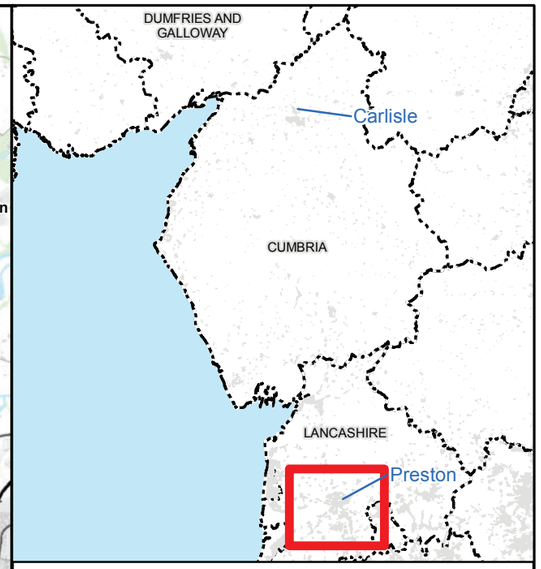
HS2

High Speed Rail (Crewe – Manchester) Environmental Statement

OR001: Preston Station

SV-03 - Assessment and Monitoring Locations for Construction Sound, Noise and Vibration Assessments



Map Series Information:

The SV-03 figure series accompanies the construction noise & vibration assessments. It shows the locations at which a quantitative assessment of the direct effects of construction noise and/or vibration has been carried out. These are labelled as assessment locations with a reference number to enable cross-reference to the construction noise and vibration reports contained in Volume 5: Appendix SV-002-0PSTN.

The figure series also shows locations at which baseline sound measurements were carried out.
These baseline measurement locations are labelled with a reference number to enable cross-reference to the baseline sound reports contained in Volume 5: Appendix SV-002-0PSTN.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

A more detailed explanation of each legend item included on the figures can be found in the data dictionary.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County/Unitary Authority boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-03-INDEX-PSTN

Map Name: Index Map of: Construction Airborne Noise and Vibration Likely Significant Effects

Off-route PSTN: Preston Station

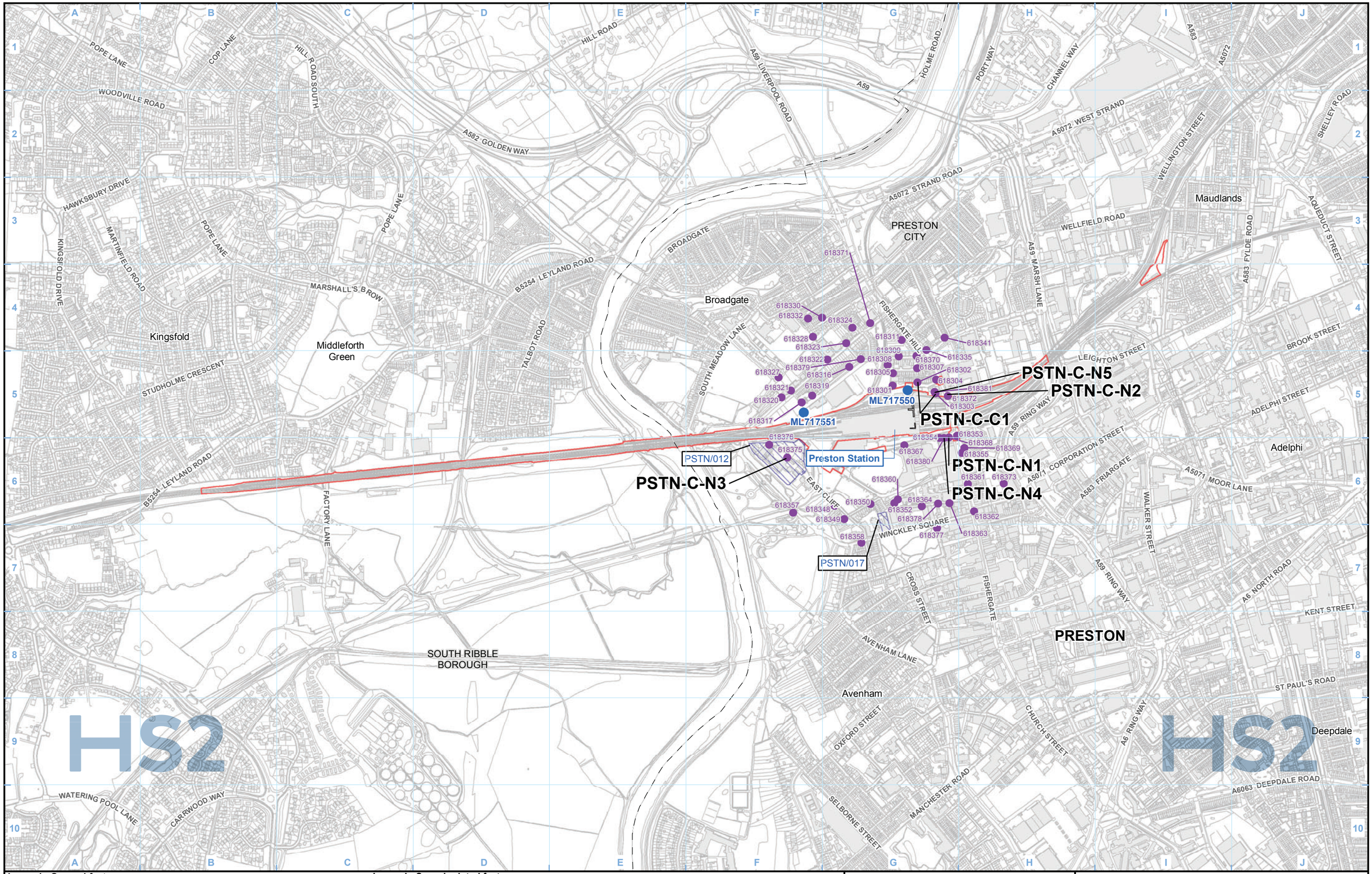
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:100,000

0 1,000 2,000 3,000 4,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002093-P01

Date: 06/09/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

- Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment locations
- Construction airborne sound and vibration assessment location
- Baseline measurement locations

labelled with Assessment Location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0PSTN) (Labelled with Measurement Location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by PSTN-C-C# and PSTN-C-N#, respectively.

Map Number: SV-03-801

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Off-route PSTN: Preston Station

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002080-P01

Date: 10/08/21

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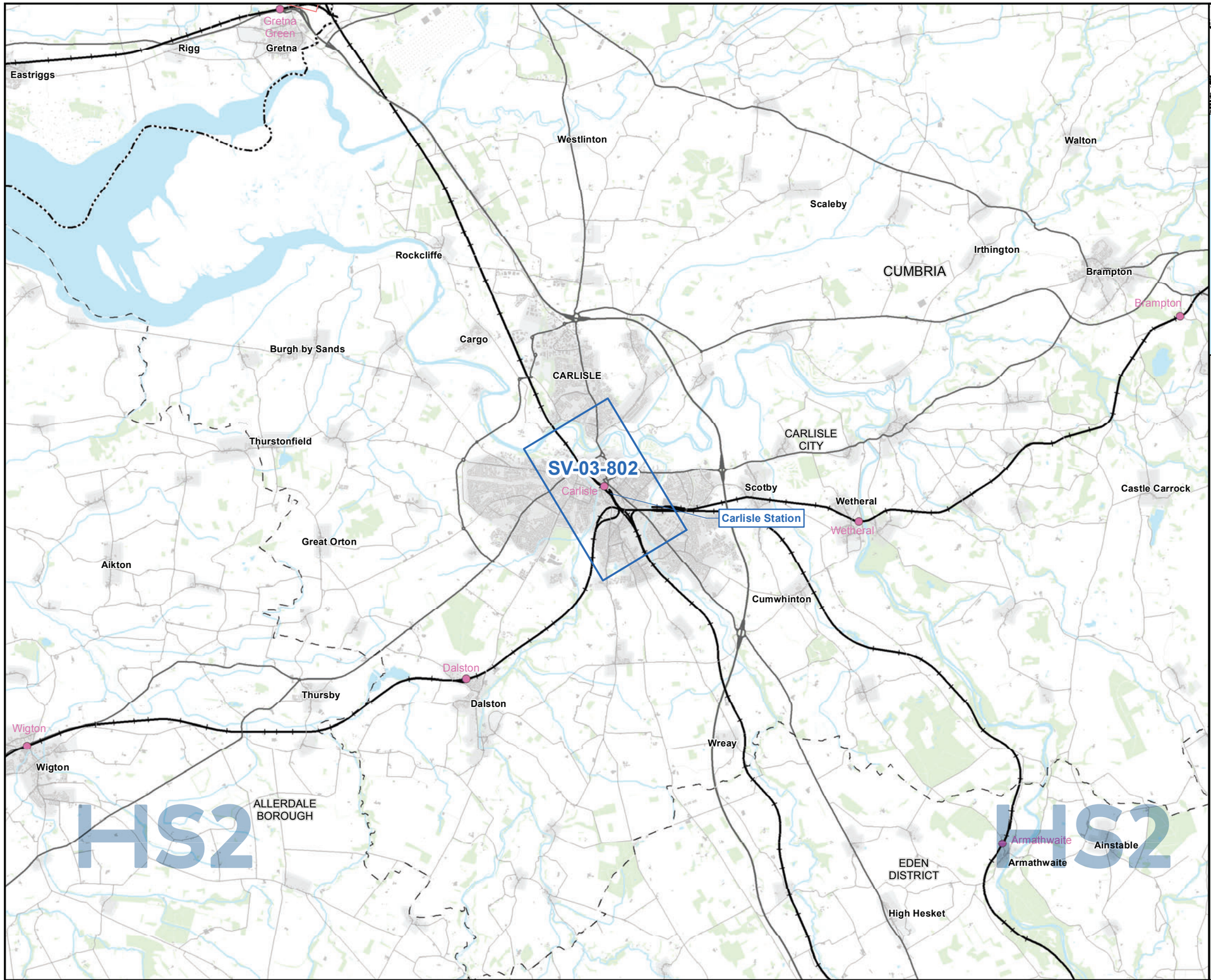
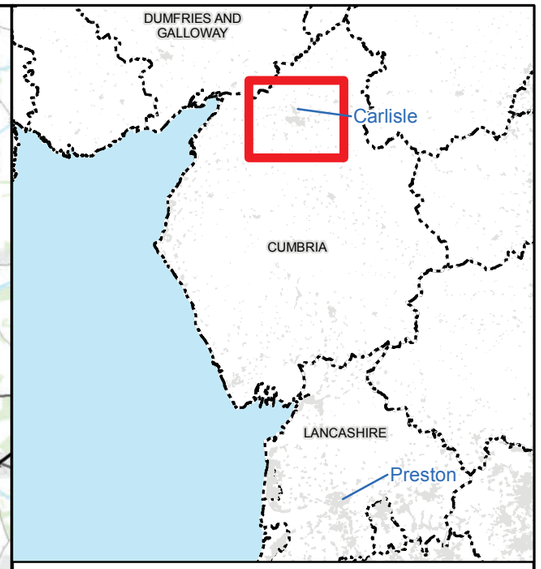
HS2

High Speed Rail (Crewe – Manchester) Environmental Statement

OR002: Carlisle Station

SV-03 - Assessment and Monitoring Locations for Construction Sound, Noise and Vibration Assessments





Map Series Information:

The SV-03 figure series accompanies the construction noise & vibration assessments. It shows the locations at which a quantitative assessment of the direct effects of construction noise and/or vibration has been carried out. These are labelled as assessment locations with a reference number to enable cross-reference to the construction noise and vibration reports contained in Volume 5: Appendix SV-002-0CSTN.

The figure series also shows locations at which baseline sound measurements were carried out.
These baseline measurement locations are labelled with a reference number to enable cross-reference to the baseline sound reports contained in Volume 5: Appendix SV-002-0CSTN.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

A more detailed explanation of each legend item included on the figures can be found in the data dictionary.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County/Unitary Authority boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-03-INDEX-CSTN

Map Name: Index Map of: Construction Airborne Noise and Vibration Likely Significant Effects

Off-route CSTN: Carlisle Station

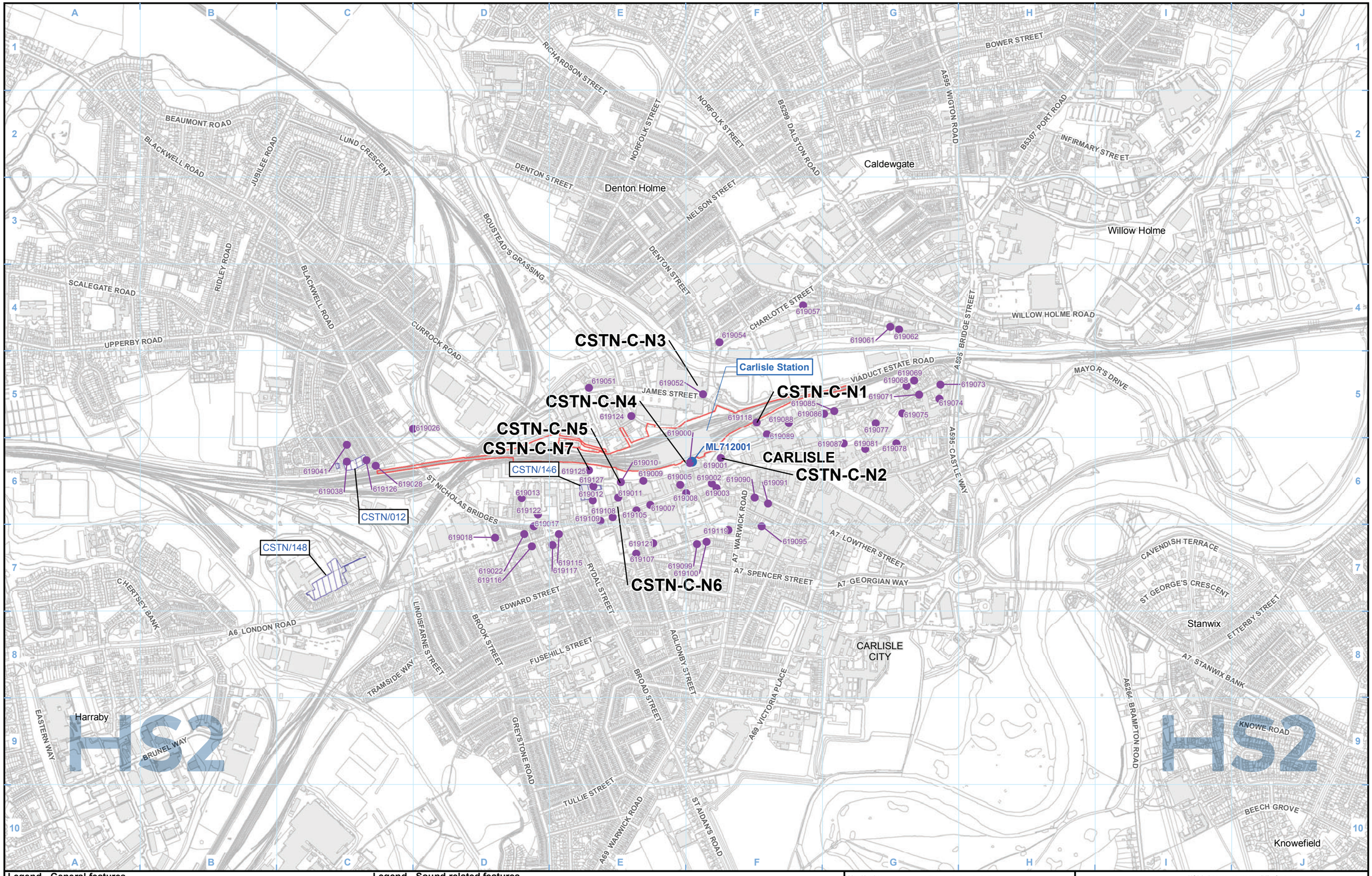
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:100,000

0 1,000 2,000 3,000 4,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002091-P01

Date: 06/09/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

- Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment locations
- Construction airborne sound and vibration assessment location

labelled with Assessment Location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0CSTN) (Labelled with Measurement Location reference code).

- Baseline measurement locations

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by CSTN-C-C# and CSTN-C-N#, respectively.

Map Number: SV-03-802

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Off-route CSTN: Carlisle Station

Registered in England. Registration number 06791686. Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

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Doc Number: 2DE01-MWJ-EV-MAP-M000-002081-P01

Date: 10/08/21

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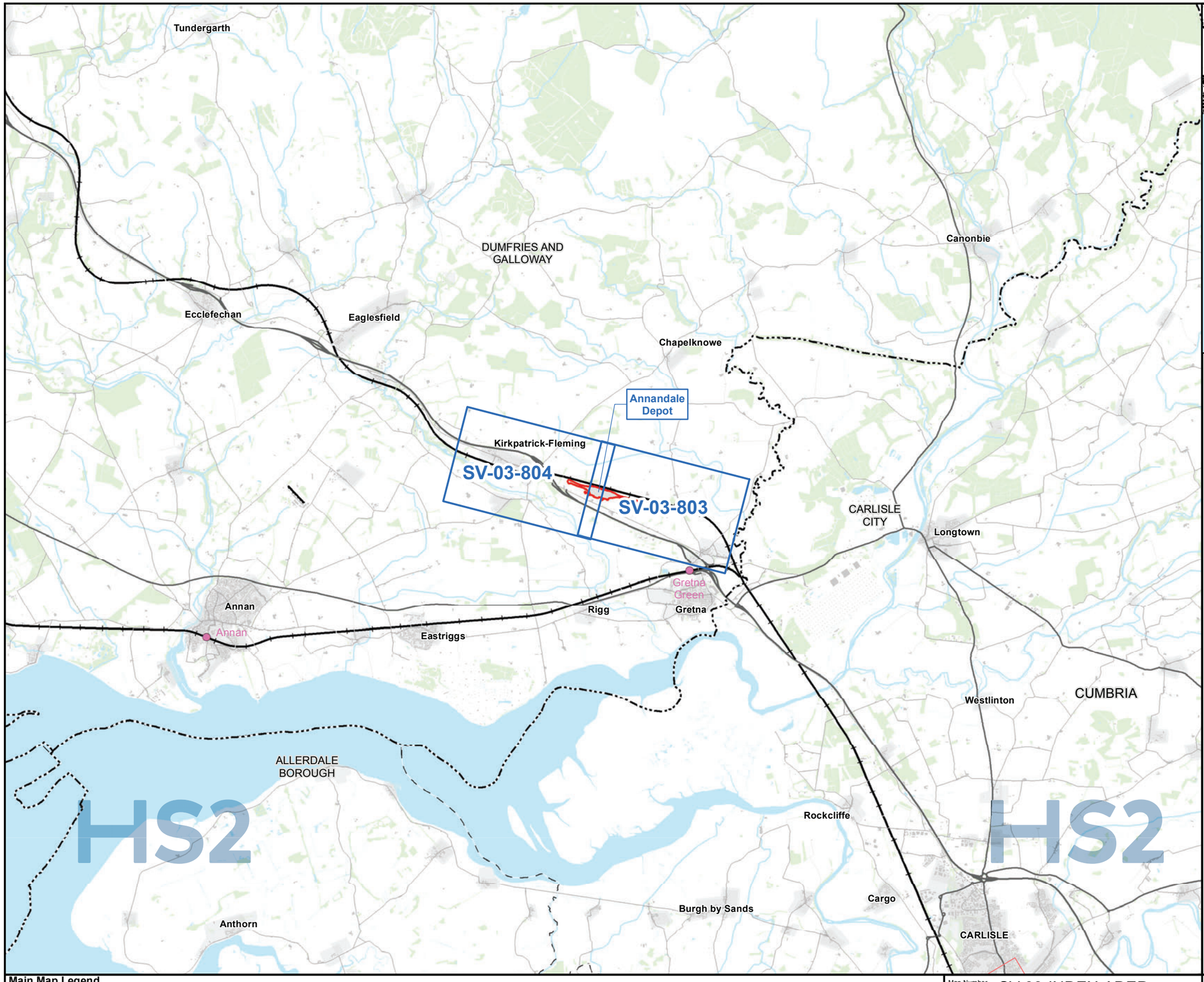
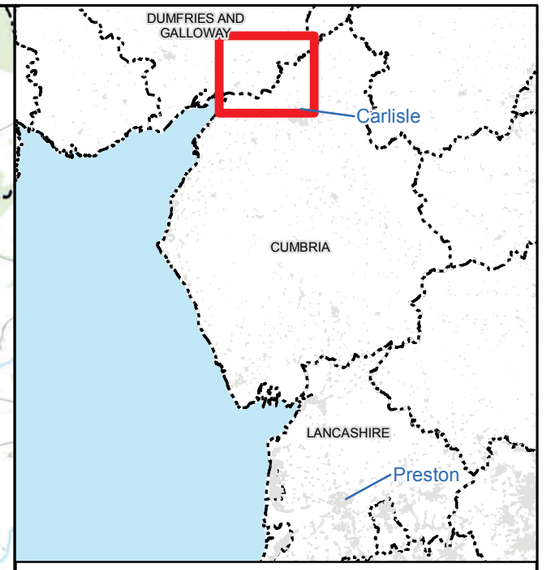
High Speed Rail
(Crewe – Manchester)
Environmental Statement

OR003: Annandale Depot

SV-03 - Assessment and Monitoring Locations for Construction Sound, Noise and Vibration Assessments





Map Series Information:

The SV-03 figure series accompanies the construction noise & vibration assessments. It shows the locations at which a quantitative assessment of the direct effects of construction noise and/or vibration has been carried out. These are labelled as assessment locations with a reference number to enable cross-reference to the construction noise and vibration reports contained in Volume 5: Appendix SV-002-0ADEP.

The figure series also shows locations at which baseline sound measurements were carried out.
These baseline measurement locations are labelled with a reference number to enable cross-reference to the baseline sound reports contained in Volume 5: Appendix SV-002-0ADEP.

The design of the Proposed Scheme will be informed through stakeholder engagement and further engineering and environmental studies.

A more detailed explanation of each legend item included on the figures can be found in the data dictionary.

Note: Not all data layers in the legend are represented on every map.

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- Existing railway station
- County/Unitary Authority boundary
- District/Borough boundary
- Map sheets included in this community area
- Map sheets not included in this community area

Map Number: SV-03-INDEX-ADEP

Map Name:
Index Map of:
Construction Airborne Noise and Vibration Likely Significant Effects

Off-route ADEP:
Annandale Depot

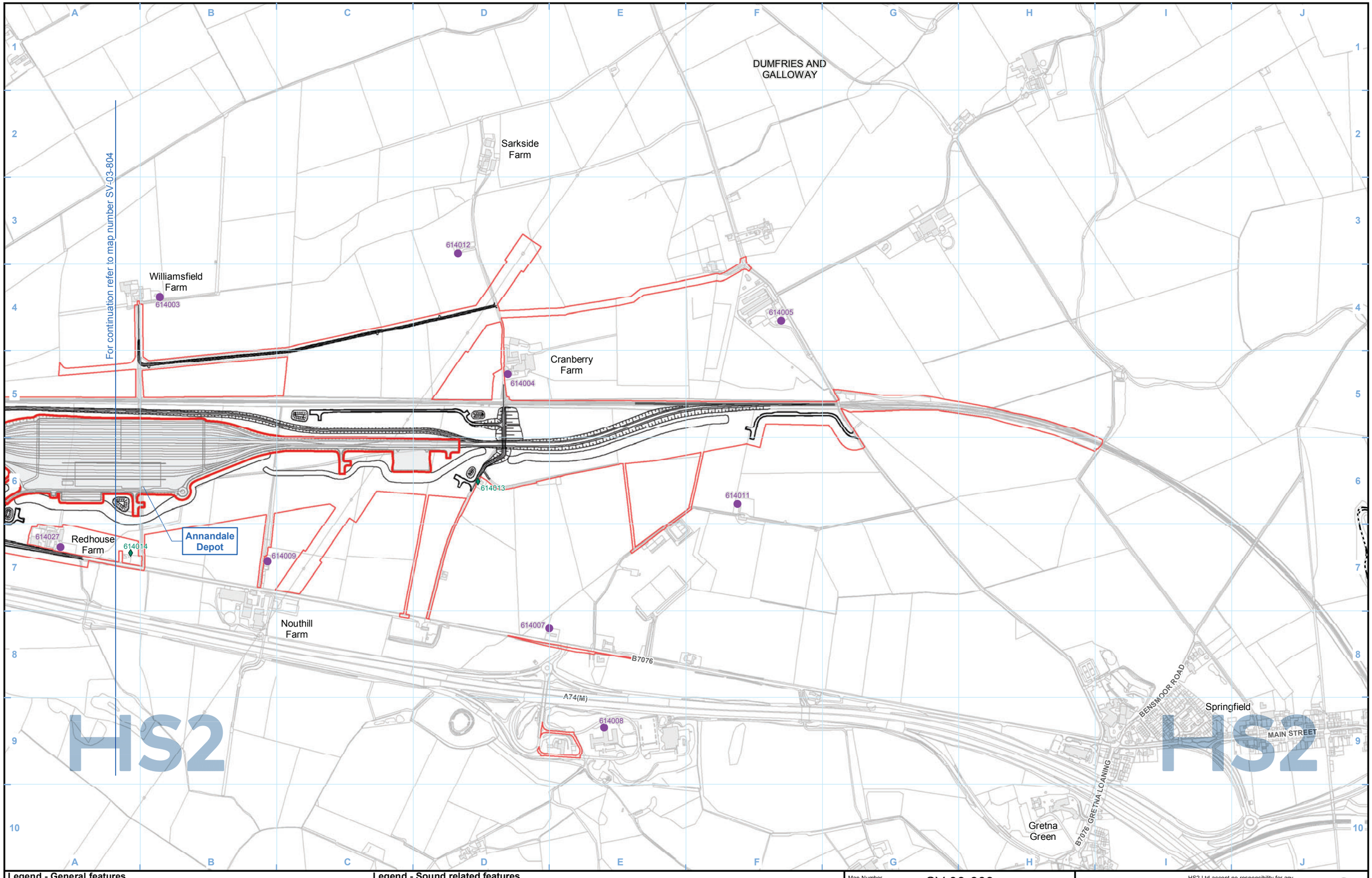
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:100,000

0 1,000 2,000 3,000 4,000 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002092-P01

Date: 06/09/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County/Unitary Authority boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

- Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment locations
- Construction airborne sound and vibration assessment location
- Baseline measurement locations

labelled with Assessment Location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0ADEP) (Labelled with Measurement Location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by ADEP-C-C# and ADEP-C-N#, respectively.

Map Number: SV-03-803

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Off-route ADEP: Annandale Depot

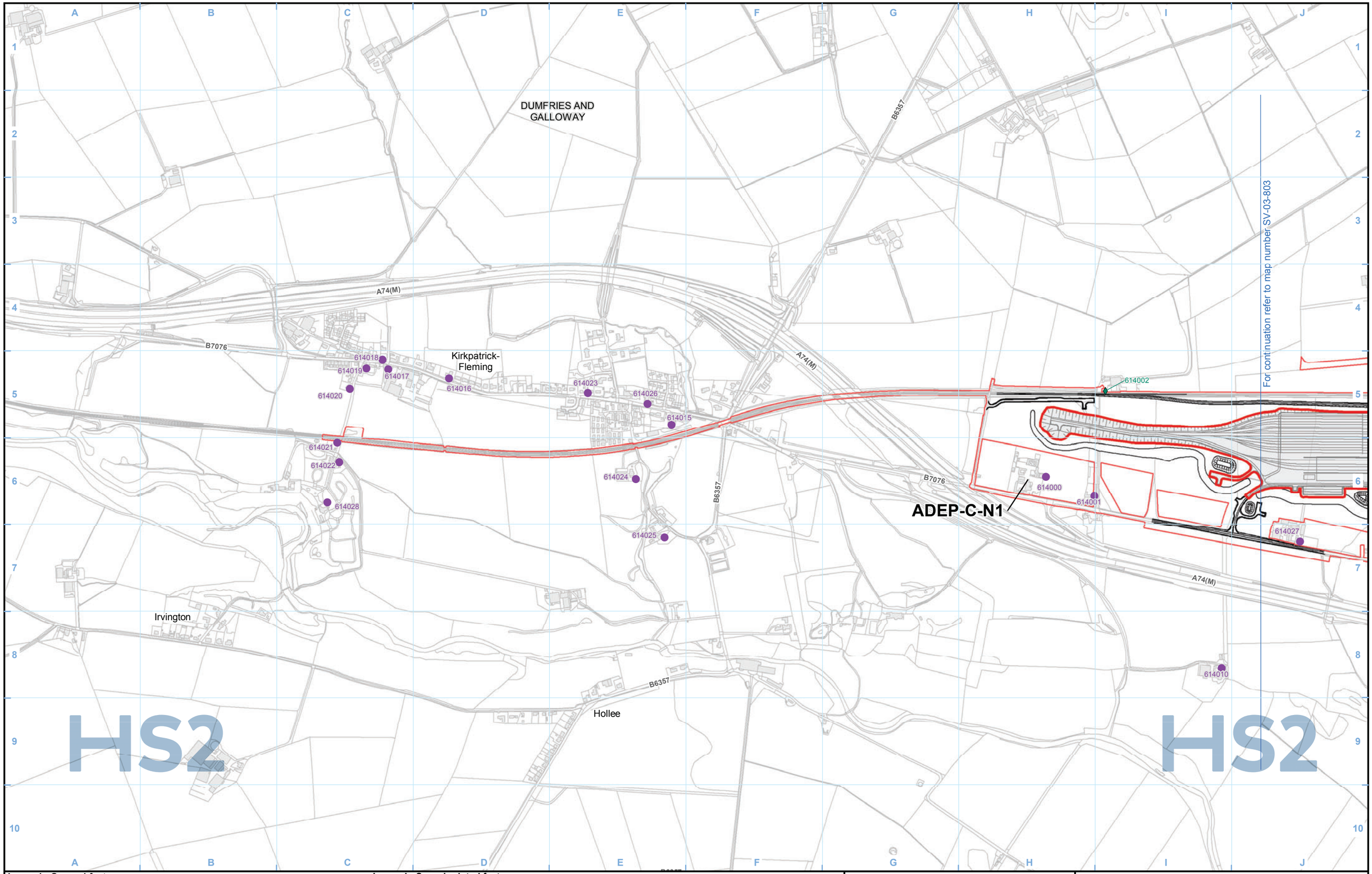
Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002082-P01

Date: 10/08/21



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community area boundary
- County/Unitary Authority boundary
- District/Borough boundary

Engineering earthworks:
- Embankment
- Cutting

Non engineering earthworks:
- Embankment
- Cutting

- Land potentially required during construction

Legend - Sound related features

- Committed developments - SV Only
- Construction airborne sound assessment location
- Construction vibration assessment locations
- Construction airborne sound and vibration assessment location
- Baseline measurement locations

labelled with Assessment Location ID reference number (for details of the assessment results see Vol 5 Appendix SV-002-0ADEP) (Labelled with Measurement Location reference code).

Likely significant effects from construction noise and /or vibration on groups of dwellings and any shared community open areas, and non-residential receptors, are indicated by ADEP-C-C# and ADEP-C-N#, respectively.

Map Number: SV-03-804

Map Name: Construction Airborne Noise and Vibration Likely Significant Effects

Off-route ADEP: Annandale Depot

HS2

Registered in England. Registration number 06791686.
Registered office: 2 Snowhill, Queensway, Birmingham B4 6GA.

Scale at A3: 1:10,000

0 100 200 300 400 Metres

Doc Number: 2DE01-MWJ-EV-MAP-M000-002682-P01

Date: 10/08/21