

HIGH SPEED RAIL (LONDON - WEST MIDLANDS) ADDITIONAL PROVISION

Environmental Statement

Volume 5 | Map book - Environmental topics

September 2014
ES 3.5



HIGH SPEED RAIL (LONDON - WEST MIDLANDS) ADDITIONAL PROVISION

Environmental Statement

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Department
for Transport

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

A report prepared for High Speed Two (HS2) Limited:

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Mapping explanatory notes

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 London-West Midlands Additional Provision Environmental Statement (AP 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 AP ES have a chainage value shown next to the alignment. Chainage is presented on the maps in black font, in the form of XX+YYY. E.g. 77+000 or 158+500.

Chainage (known as reference chainage) is referenced from Euston Station, which is 0+000, and the value presented is in metres. E.g. 77+000 refers to the point, 77,000m, or 77km, 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 1:10,000, 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 sheet layout

Each map in volume 2 is presented twice, with the main ES map on the left hand page and the AP map on the right. For the CT-05 and CT-06 map series, the AP map is annotated with a red cloud which highlights the area of change. A red outlined text box provides a brief description of the AP, and gives the AP reference number. Only maps which have been amended as a result of the AP are included within the map books.

Each volume 5 map is annotated to describe the change to a receptor or significant effect, and to give the AP reference number. For more detailed information about the AP annotation, refer to the map series legend. Only maps which have been amended as a result of the AP are included within the map book.

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 right hand side of the page, and the West Midlands to the left.

The exception to this, are map series LV-03 and LV-04, 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 the West Midlands to the top.

Map books

In total there are seven map books which make up the AP ES, spread across volumes 2 and 5. A list of the titles is provided below for reference.

Volume number	Title
Volume 2 Map book – Part 1 of 6	CFA 07 Colne Valley CFA 09 Central Chilterns CFA 10 Dunsmore, Wendover and Halton
Volume 2 Map book – Part 2 of 6	CFA 11 Stoke Mandeville and Aylesbury
Volume 2 Map book – Part 3 of 6	CFA 12 Waddesdon and Quainton CFA 13 Calvert, Steeple Claydon, Twyford and Chetwode CFA 14 Newton Purcell to Brackley CFA 15 Greatworth to Lower Boddington
Volume 2 Map book – Part 4 of 6	CFA 16 Ladbroke and Southam CFA 17 Offchurch and Cubbington CFA 18 Stoneleigh, Kenilworth and Burton Green
Volume 2 Map book – Part 5 of 6	CFA 19 Coleshill Junction CFA 20 Curdworth to Middleton CFA 21 Drayton Bassett, Hints and Weeford CFA 22 Whittington to Handsacre
Volume 2 Map book – Part 6 of 6	CFA 23 Balsall Common and Hampton-in-Arden CFA 24 Birmingham Interchange and Chelmsley Wood CFA 25 Castle Bromwich and Bromford CFA 26 Washwood Heath to Curzon Street
Volume 5 Map Book	Environmental topics

HIGH SPEED RAIL (LONDON - WEST MIDLANDS) ADDITIONAL PROVISION

Environmental Statement

Volume 5 | Agriculture, Forestry and Soils

September 2014

Contents

Data dictionary and definitions

Map series name	AG-01 - Agricultural Land Quality and Holdings
Map series description	<i>These maps show the distribution of agricultural land quality within the construction boundary; Identifies the extent of farm holdings and the location of key farm buildings.</i>
Community Forum Area name	
CFA 07 – Colne Valley	x
CFA 08 – The Chalfonts and Amersham	x
CFA 09 – Central Chilterns	x
CFA 10 – Dunsmore, Wendover and Halton	x
CFA 11 – Stoke Mandeville and Aylesbury	x
CFA 12 – Waddesdon and Quainton	x
CFA 13 – Calvert, Steeple Claydon, Twyford and Chetwode	x
CFA 14 – Newton Purcell to Brackley	x
CFA 15 – Greatworth to Lower Boddington	x
CFA 16 – Ladbroke and Southam	x
CFA 17 – Offchurch and Cubbington	x
CFA 18 – Stoneleigh, Kenilworth and Burton Green	x
CFA 19 – Coleshill Junction	x
CFA 20 – Curdworth to Middleton	✓
CFA 21 – Drayton Bassett, Hints and Weeford	x
CFA 22 – Whittington to Handsacre	x
CFA 23 – Balsall Common and Hampton-in-Arden	x
CFA 24 – Birmingham Interchange and Chelmsley Wood	x
CFA 25 – Castle Bromwich and Bromford	x
CFA 26 – Washwood Heath to Curzon Street	x

HIGH SPEED RAIL (LONDON - WEST MIDLANDS) ADDITIONAL PROVISION

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Data dictionary and definitions

September 2014

Data dictionary and definitions

Legend features	Definition	Source	Copyright
Agricultural and forestry holdings assessed	Holdings assessed derived from the Farm Impact Surveys undertaken by the environmental consultants for HS2 Ltd, augmented where access was not available by published information from Defra.	High Speed Two (HS2) Ltd	© Crown Copyright and database rights 2014 Ordnance Survey Licence Number 100049190.
Agricultural land classification: Grade 1 - excellent Grade 2 - very good Grade 3a - good Grade 3b - moderate Grade 4 - poor Grade 5 - very poor Other land	<p>The Agricultural Land Classification (ALC) provides a method for assessing the quality of farmland. The ALC system classifies land into five grades, with Grade 3 subdivided into Subgrades 3a and 3b.</p> <p>The best and most versatile land is defined as Grades 1, 2 and 3a. This is the land which is most flexible, productive and efficient in response to inputs.</p> <p>Predictive Agricultural Land Classification (ALC) undertaken by the environmental consultants for HS2 Ltd, based on an interpretation of existing published data, existing detailed ALC surveys obtained from Natural England and soil and ALC surveys undertaken by the environmental consultants for HS2 Ltd.</p>	Natural England High Speed Two (HS2) Ltd	© Natural England copyright 2014 Contains Ordnance Survey data © Crown copyright and database right 2014. All rights reserved. Ordnance Survey Licence number 100022021. http://www.naturalengland.org.uk/Images/open-government-licence-NE-OS_tcm6-30743.pdf
Community forum boundary	The Environmental Statement has been split into 26 sections called Community Forum Areas.	High Speed Two (HS2) Ltd	© Crown Copyright and database rights 2014 Ordnance Survey Licence Number 100049190.
County boundary	County boundaries from Ordnance Survey boundary mapping.	Ordnance Survey	© Crown Copyright and database rights 2014 Ordnance Survey Licence Number 100049190.
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 boundary	Ordnance Survey local authority boundary mapping.	Ordnance Survey	© Crown Copyright and database rights 2014 Ordnance Survey Licence Number 100049190.
Known extent of agriculture and forestry holdings	Holdings beyond study area extent derived from the Farm Impact Surveys undertaken by the environmental consultants for HS2 Ltd.	High Speed Two (HS2) Ltd	© Crown Copyright and database rights 2014 Ordnance Survey Licence Number 100049190.
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	
Main operational agricultural and forestry buildings	Main operational buildings derived from the Farm Impact Surveys undertaken by the environmental consultants for HS2 Ltd.	High Speed Two (HS2) Ltd	© Crown Copyright and database rights 2014 Ordnance Survey Licence Number 100049190.
Route in tunnel Route on surface	Represents the proposed route of HS2, split into route on surface and tunnelled sections.	High Speed Two (HS2) Ltd	
Water body	Based on Ordnance Survey Vector Map District.	Ordnance Survey	© Crown Copyright and database rights 2014 Ordnance Survey Licence Number 100049190.
Watercourse	The Detailed River Network (DRN) is the only large-scale, accurate and fully attributed digital river centreline covering England and Wales.	Environment Agency	Contains Environment Agency information © Environment Agency and database right.

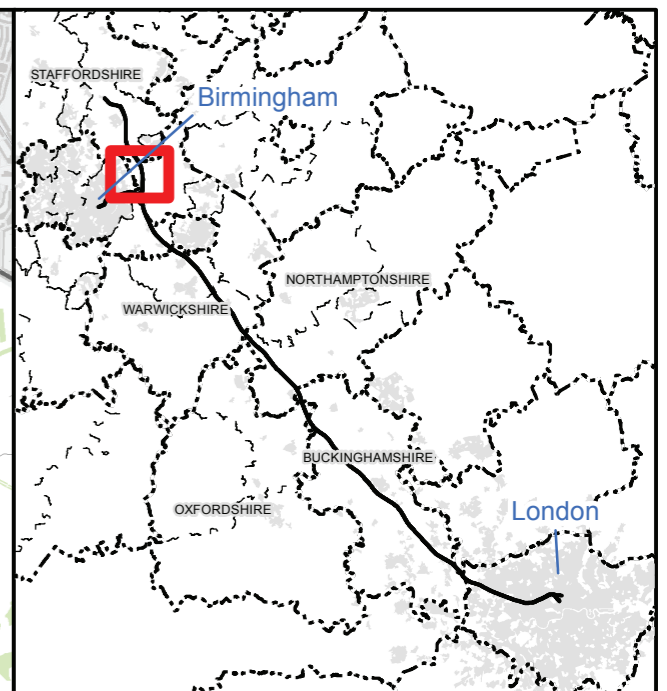
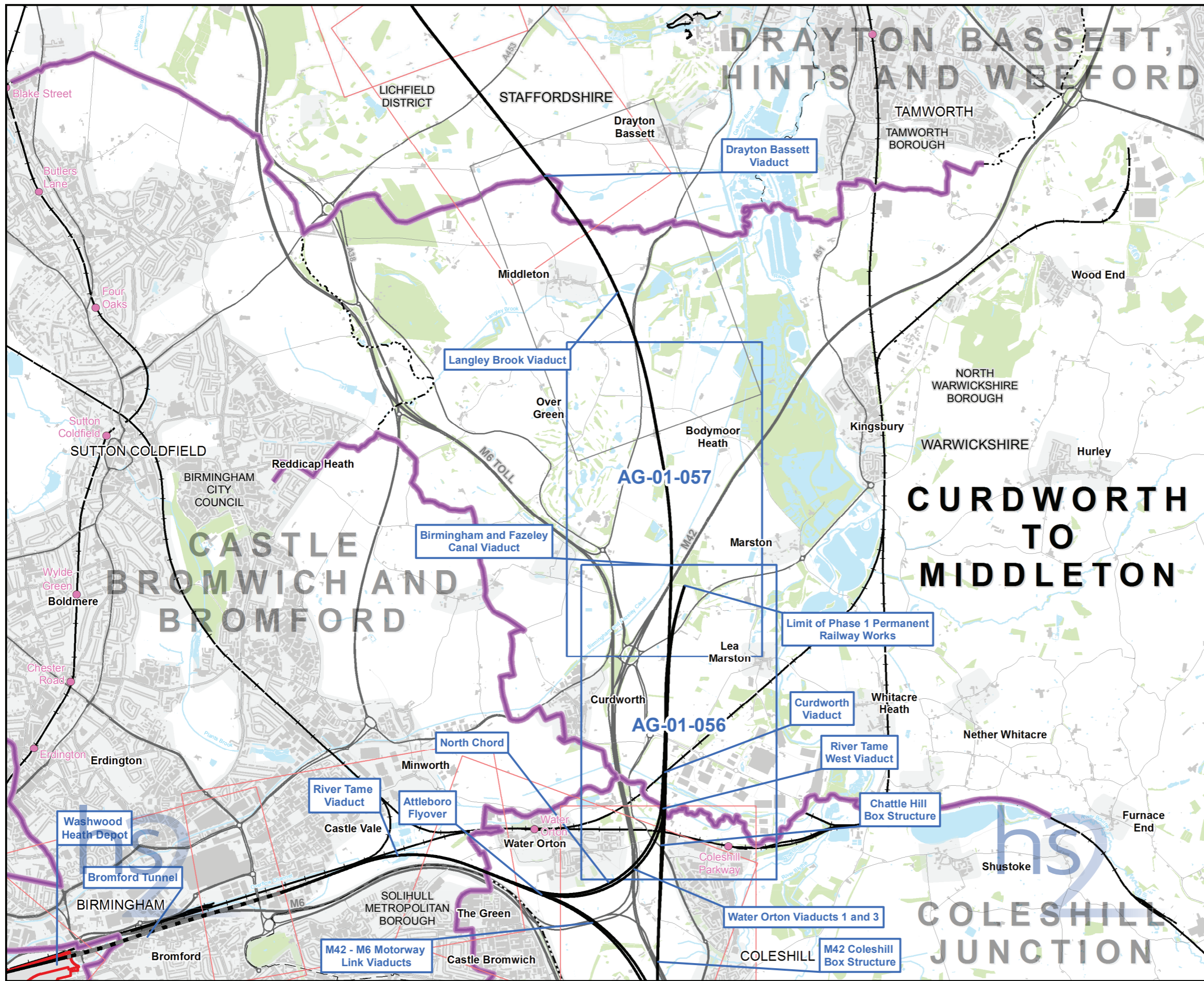
HIGH SPEED RAIL (LONDON - WEST MIDLANDS) ADDITIONAL PROVISION

Environmental Statement

CFA 20 | Curdworth to Middleton

AG-01 - Agricultural Land Quality and Holdings

September 2014



Map Series Information:

These maps show the distribution of agricultural land quality within the construction boundary; Identifies the extent of farm holdings and the location of key farm buildings.

CURDWORTH TO MIDDLETON

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community forum boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community forum with amendment
- Map sheets included in this community forum with no amendment
- Map sheets not included in this community forum

Map Number **AG-01-INDEX-CFA20**

Map Name **Index Map of:
Agricultural Land Quality and Holdings
AP1**

**Community Forum Area CFA20:
Curdworth to Middleton**

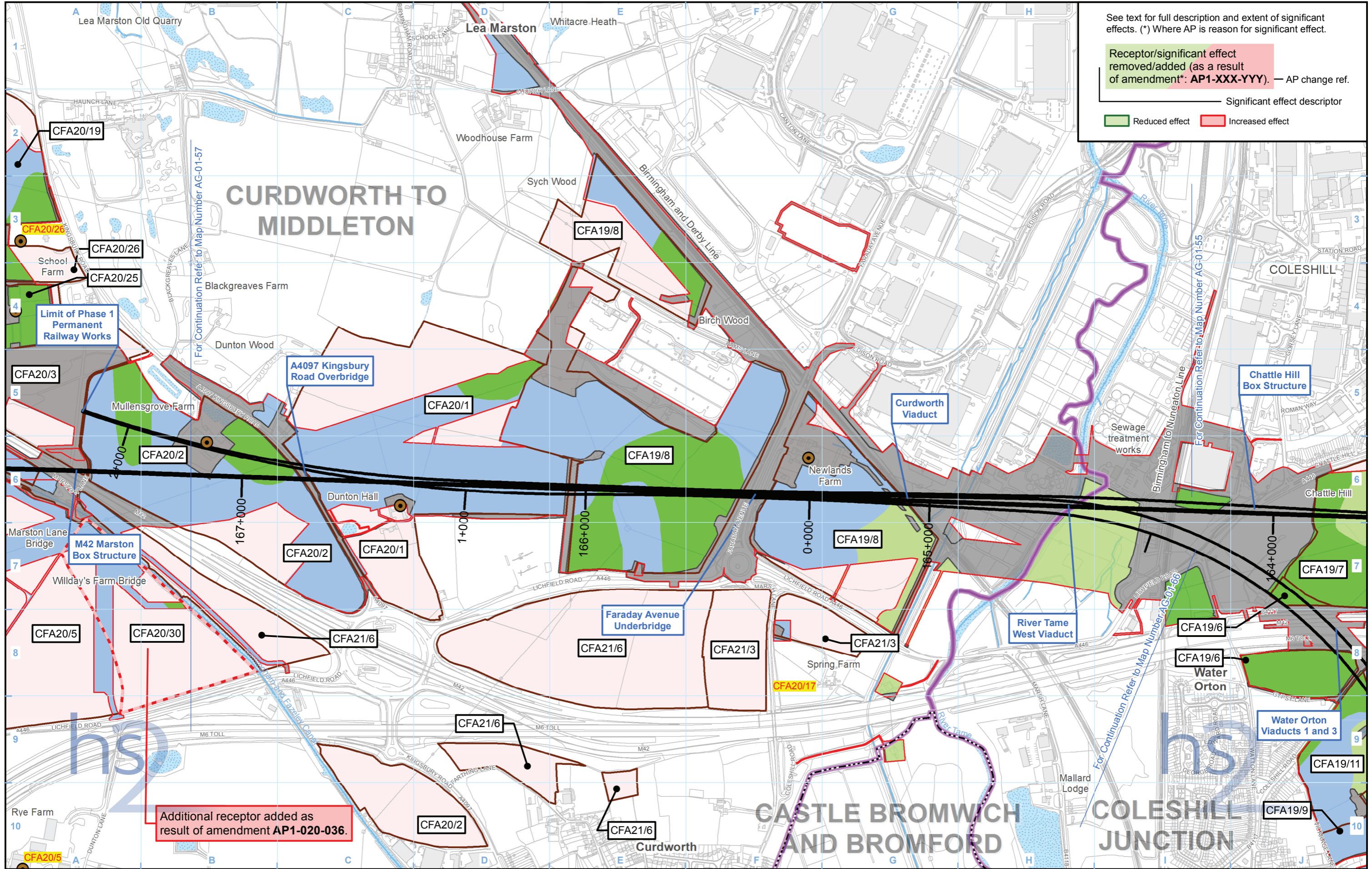
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Doc Number: C253-ATK-EV-MAP-030-001577-AP01 **Date: 13/08/14**



See text for full description and extent of significant effects. (*) Where AP is reason for significant effect.

Receptor/significant effect removed/added (as a result of amendment*: AP1-XXX-YYY). — AP change ref.

Significant effect descriptor

Reduced effect Increased effect

Legend

<ul style="list-style-type: none"> Route in tunnel Route on surface Depot, station, headhouse or portal building Land potentially required during construction Community forum boundary County boundary District/Borough boundary 	<ul style="list-style-type: none"> Watercourse Water body Holdings assessed Main operational agricultural and forestry buildings Agricultural and forestry holdings label Unique identifier CFA no. Main operational agricultural and forestry buildings label (when not within its agricultural or forestry holding) 	<p>Agricultural land classification:</p> <ul style="list-style-type: none"> Grade 1 - excellent Grade 2 - very good Grade 3a - good Grade 3b - moderate Grade 4 - poor Grade 5 - very poor Other land
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Map Number: AG-01-056

Map Name: Agricultural Land Quality and Holdings AP1

Community Forum Area CFA20: Curdworth to Middleton

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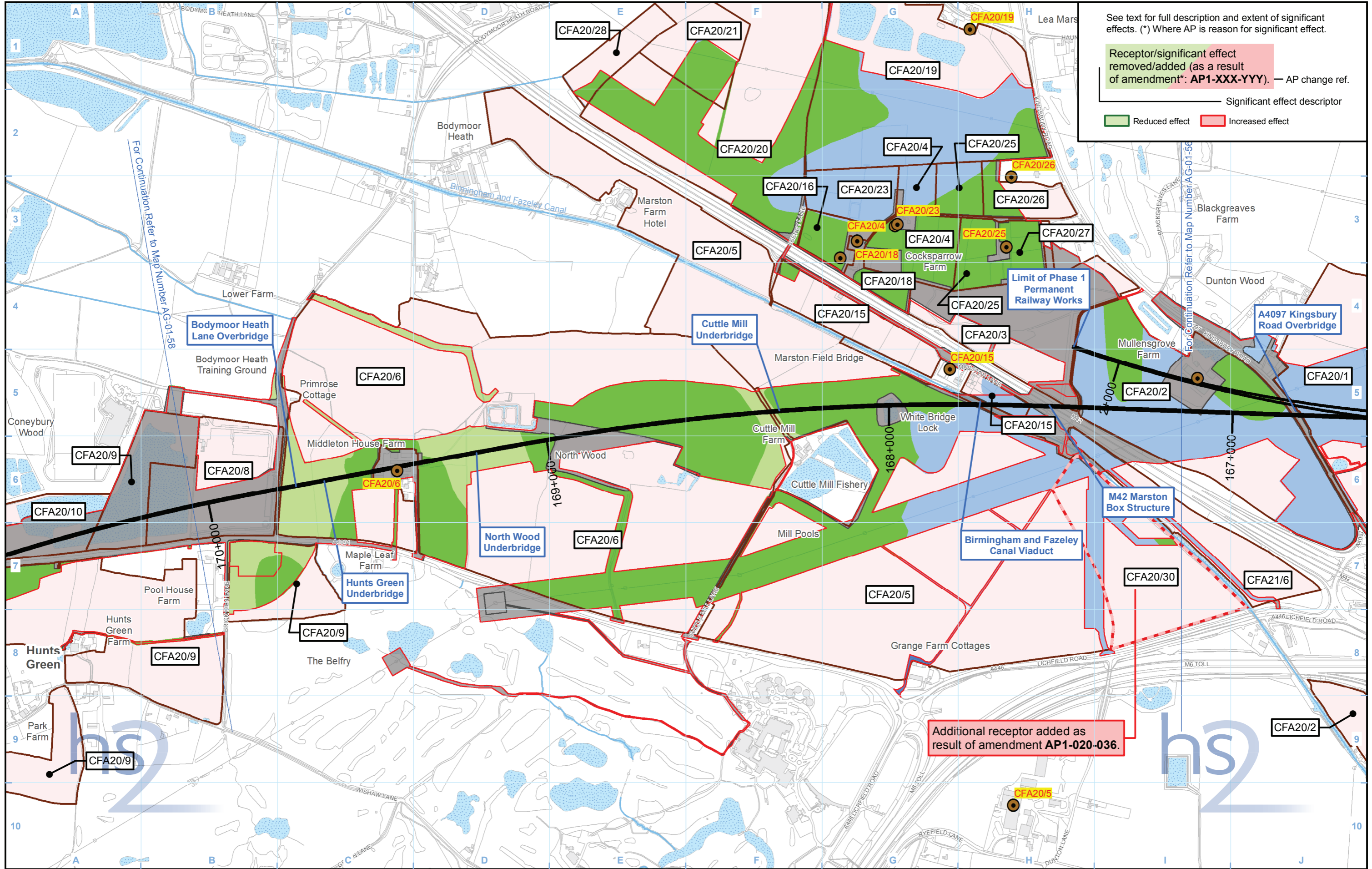
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Doc Number: C253-ATK-EV-MAP-030-001573-AP01 Date: 18/08/14



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Receptor/significant effect removed/added (as a result of amendment*: AP1-XXX-YYY). — AP change ref.

Significant effect descriptor

Reduced effect Increased effect

Legend <ul style="list-style-type: none"> Route in tunnel Route on surface Depot, station, headhouse or portal building Land potentially required during construction Community forum boundary County boundary District/Borough boundary 		<ul style="list-style-type: none"> Watercourse Water body Holdings assessed Main operational agricultural and forestry buildings Agricultural and forestry holdings label Unique identifier Main operational agricultural and forestry buildings label (when not within its agricultural or forestry holding) 		Agricultural land classification: <ul style="list-style-type: none"> Grade 1 - excellent Grade 2 - very good Grade 3a - good Grade 3b - moderate Grade 4 - poor Grade 5 - very poor Other land 		Map Number AG-01-057 Map Name Agricultural Land Quality and Holdings AP1 Community Forum Area CFA20: Curdworth to Middleton Doc Number: C253-ATK-EV-MAP-030-001574-AP01 Date: 18/08/14	
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Additional receptor added as result of amendment AP1-020-036.

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0 100 200 300 400 Metres

HIGH SPEED RAIL (LONDON - WEST MIDLANDS) ADDITIONAL PROVISION

Environmental Statement

Volume 5 | Community

September 2014

Contents

Data dictionary and definitions

Map series name	CM-01 Significantly Affected Community Resources
Map series description	<i>These maps identify all community resources which have been assessed as significantly affected during the construction and operation phases of the scheme.</i>
Community Forum Area name	
CFA 07 – Colne Valley	x
CFA 08 – The Chalfonts and Amersham	x
CFA 09 – Central Chilterns	x
CFA 10 – Dunsmore, Wendover and Halton	x
CFA 11 – Stoke Mandeville and Aylesbury	✓
CFA 12 – Waddesdon and Quainton	x
CFA 13 – Calvert, Steeple Claydon, Twyford and Chetwode	x
CFA 14 – Newton Purcell to Brackley	x
CFA 15 – Greatworth to Lower Boddington	x
CFA 16 – Ladbroke and Southam	x
CFA 17 – Offchurch and Cubbington	x
CFA 18 – Stoneleigh, Kenilworth and Burton Green	x
CFA 19 – Coleshill Junction	x
CFA 20 – Curdworth to Middleton	x
CFA 21 – Drayton Bassett, Hints and Weeford	x
CFA 22 – Whittington to Handsacre	x
CFA 23 – Balsall Common and Hampton-in-Arden	x
CFA 24 – Birmingham Interchange and Chelmsley Wood	x
CFA 25 – Castle Bromwich and Bromford	x
CFA 26 – Washwood Heath to Curzon Street	x

HIGH SPEED RAIL (LONDON - WEST MIDLANDS) ADDITIONAL PROVISION

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Legend features	Definition	Source	Copyright
Community forum boundary	The Environmental Statement has been split into 26 sections called Community Forum Areas.	High Speed Two (HS2) Ltd	© Crown Copyright and database rights 2014 Ordnance Survey Licence Number 100049190.
Construction traffic route	Public highways which may be used for HGV construction traffic.	High Speed Two (HS2) Ltd	© Crown Copyright and database rights 2014 Ordnance Survey Licence Number 100049190.
County boundary	County boundaries from Ordnance Survey boundary mapping.	Ordnance Survey	© Crown Copyright and database rights 2014 Ordnance Survey Licence Number 100049190.
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 boundary	Ordnance Survey local authority boundary mapping.	Ordnance Survey	© Crown Copyright and database rights 2014 Ordnance Survey Licence Number 100049190.
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	
Route in tunnel Route on surface	Represents the proposed route of HS2, split into route on surface and tunnelled sections.	High Speed Two (HS2) Ltd	
Significantly affected public rights of way	Public Rights of Way identified as significantly affected by either construction or operation of the scheme.	Buckinghamshire County Council Warwickshire County Council Northamptonshire County Council Oxfordshire County Council Hertfordshire County Council Staffordshire County Council	© Crown Copyright and database rights [2014]. Ordnance Survey Licence number 100049190.
Significantly affected resources	Community resources and residential properties identified as significantly affected by either construction or operation of the scheme. Derived from Ordnance Survey Mastermap data.	High Speed Two (HS2) Ltd	© Crown Copyright and database rights 2014 Ordnance Survey Licence Number 100049190.
Water body	Based on Ordnance Survey Vector Map District.	Ordnance Survey	© Crown Copyright and database rights 2014 Ordnance Survey Licence Number 100049190.
Watercourse	The Detailed River Network (DRN) is the only large-scale, accurate and fully attributed digital river centreline covering England and Wales.	Environment Agency	Contains Environment Agency information © Environment Agency and database right.
Woodland	Woodland areas derived from Ordnance Survey mastermap data.	Ordnance Survey	© Crown Copyright and database rights 2014 Ordnance Survey Licence Number 100049190.

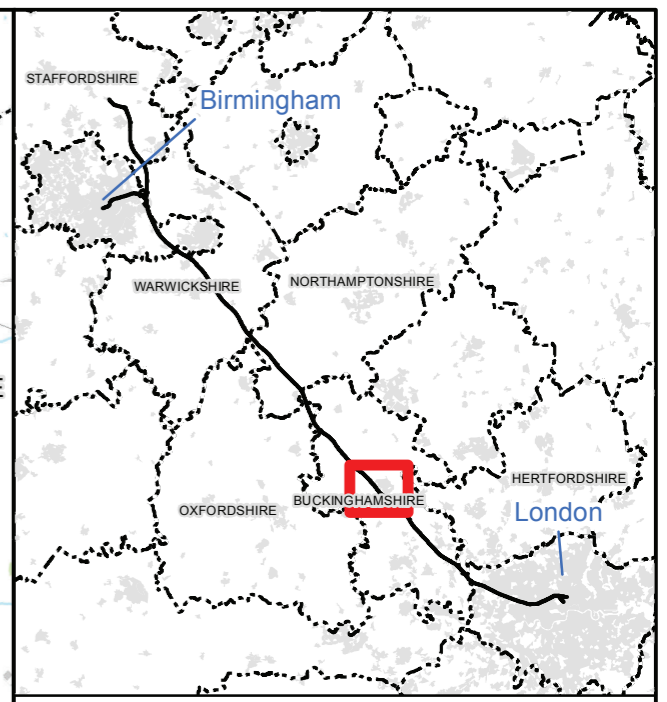
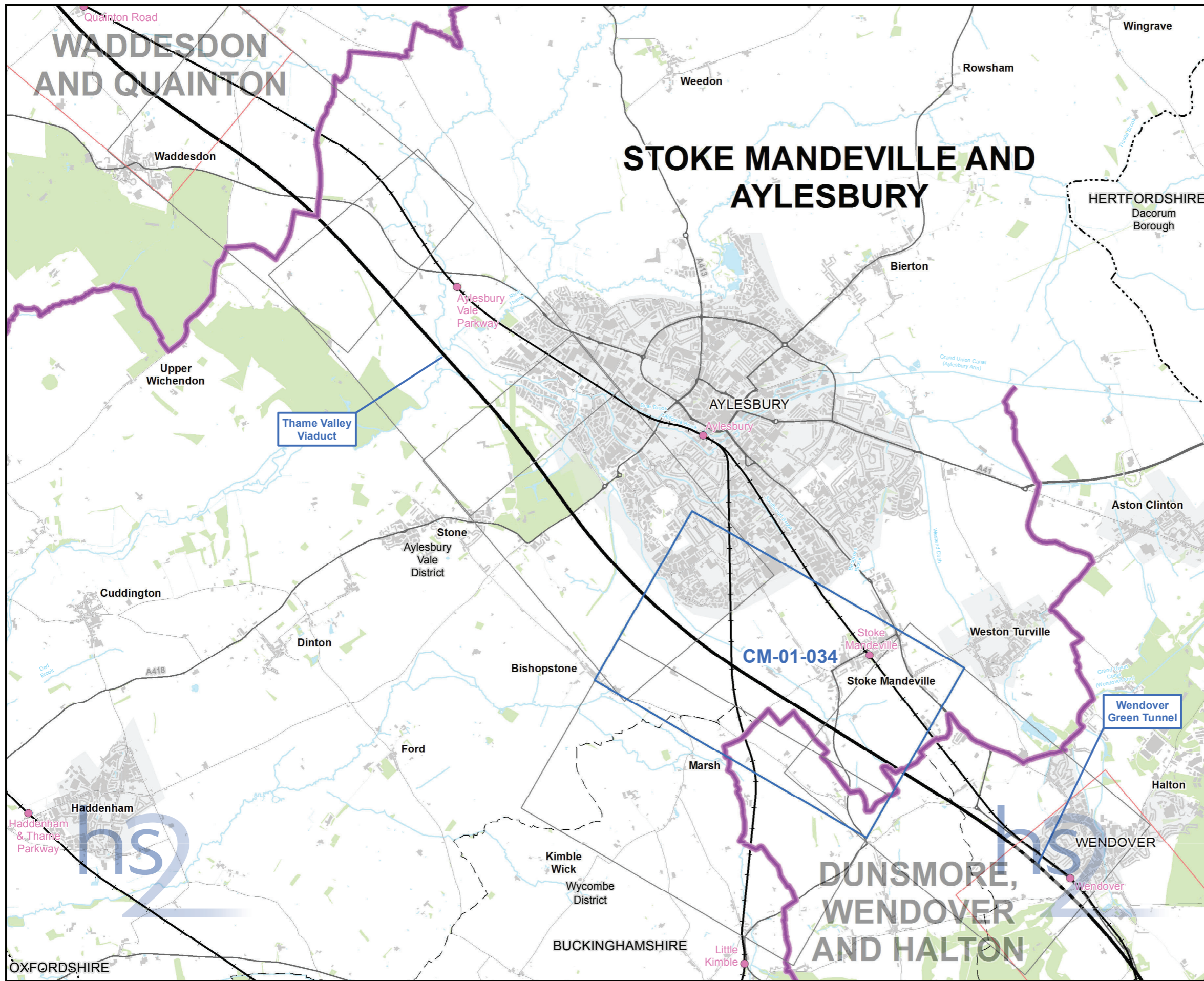
HIGH SPEED RAIL (LONDON - WEST MIDLANDS) ADDITIONAL PROVISION

Environmental Statement

CFA 11 | Stoke Mandeville and Aylesbury

CM-01 - Significantly Affected Community Resources

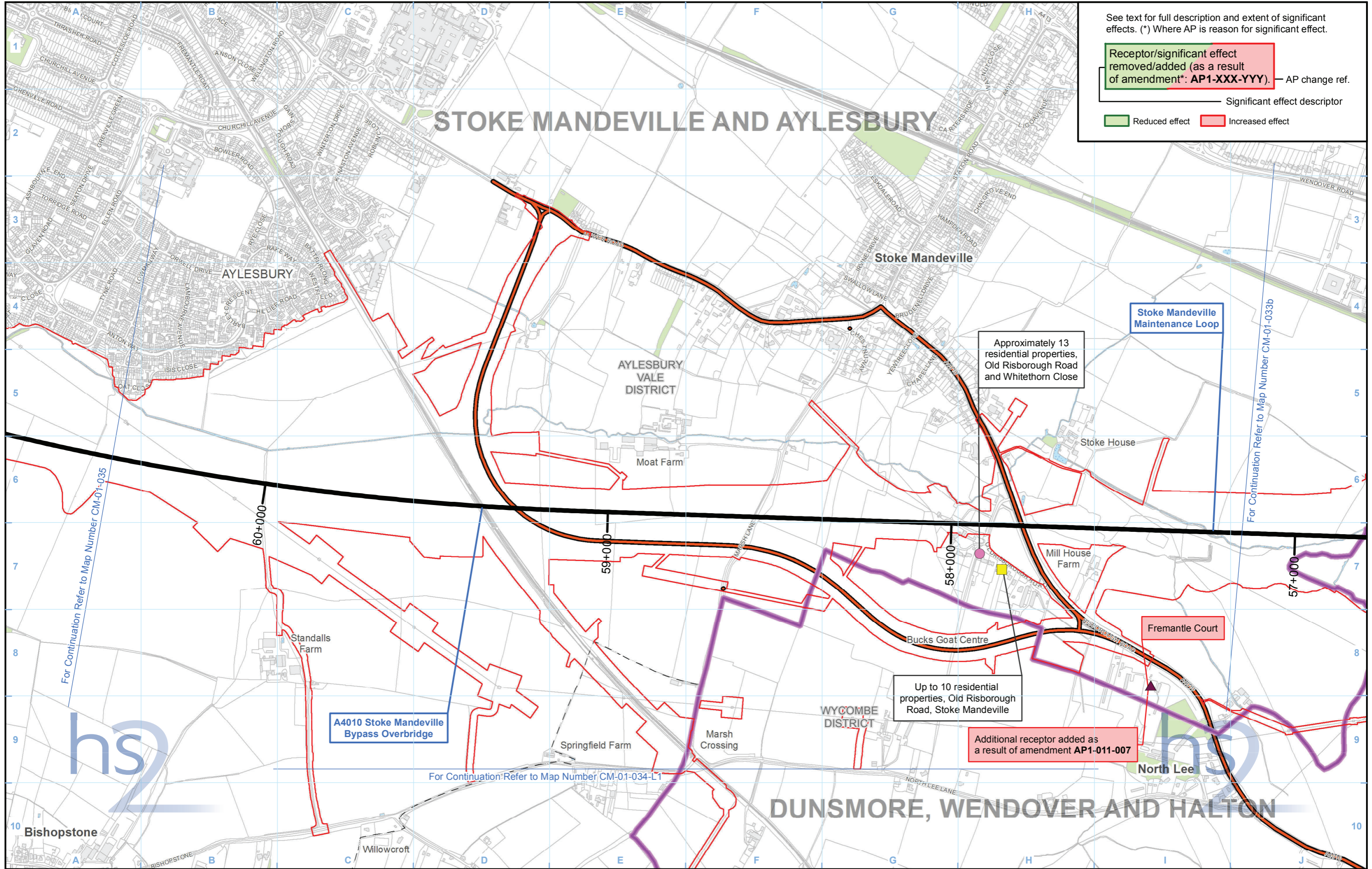
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Map Series Information:

These maps identify all community resources which have been assessed as significantly affected during the construction and operation phases of the scheme.

<p>Main Map Legend</p> <ul style="list-style-type: none"> Route in tunnel Route on surface Depot, station, headhouse or portal building Community forum boundary Existing railway station County boundary District/Borough boundary Map sheets included in this community forum with amendment Map sheets included in this community forum with no amendment Map sheets not included in this community forum 		<p>Map Number CM-01-INDEX-CFA11</p> <p>Map Name Index Map of: Significantly Affected Community Resources AP1</p> <p>Community Forum Area CFA11: Stoke Mandeville and Aylesbury</p>	<p></p> <p>HS2 Ltd accept no responsibility for any circumstances, which arise from the reproduction of this map after alteration, amendment or abbreviation or if it is issued in part or issued incomplete in any way.</p> <p>Registered in England. Registration number 06791686. Registered office: One Canada Square, London, E14 5AB.</p> <p>© Crown copyright and database rights 2014 Ordnance Survey Licence Number 100049190.</p> <p>Scale at A3: 1:50,000</p> <p></p> <p>Doc Number: C252-ETM-EV-MAP-020-003844-AP01-P03 Date: 13/08/14</p>
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See text for full description and extent of significant effects. (*) Where AP is reason for significant effect.

Receptor/significant effect removed/added (as a result of amendment*: AP1-XXX-YYY). — AP change ref.

— Significant effect descriptor

Reduced effect Increased effect

Legend	
Route in tunnel	Construction traffic route
Route on surface	Watercourse
Depot, station, headhouse or portal building	Water body
Land potentially required during construction	Woodland
Community forum boundary	Resources significantly affected during construction:
County boundary	Land required
District/Borough boundary	Isolation
	Amenity
	Multiple
	Resources significantly affected during operation:
	Amenity
	Resources significantly affected during both construction and operation:
	Amenity
	Public rights of way significantly affected during construction:
	Land required
	Amenity
	Public rights of way significantly affected during operation:
	Amenity
	Public rights of way significantly affected during both construction and operation:
	Amenity

Map Number	CM-01-034
Map Name	Significantly Affected Community Resources AP1
	Community Forum Area CFA11: Stoke Mandeville and Aylesbury

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Date: 12/08/14

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HIGH SPEED RAIL (LONDON - WEST MIDLANDS) ADDITIONAL PROVISION

Environmental Statement

Volume 5 | Sound, noise and vibration

September 2014

Contents

Data dictionary and definitions

Map series name	SV-01 Operational Sound Contour Maps and Likely Significant Effects	SV-02 Operational Noise and Vibration Impacts and Likely Significant Effects (with Assessment Locations)	SV-03 Assessment and Monitoring Locations for Construction Sound, Noise & Vibration Assessments	SV-04 Assessment and Monitoring Locations for Operational Sound, Noise & Vibration Assessments
Map series description	<p><i>SV-01 presents the predicted operational sound from the new railway.</i></p> <p><i>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; the left-hand section of this panel contains a key communicating the night-time and daytime sound levels represented by the various colours. The right-hand part of the same panel contains text explaining how the sound levels presented on the figure inform the assessment of direct noise impacts and likely significant effects. A corresponding and similar panel is found on SV-02, along with the key sound contours that were used within the environmental assessment.</i></p>	<p><i>SV-02 presents the direct operational noise impacts and likely significant effects of the Proposed Scheme.</i></p> <p><i>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 Volume 2 and Volume 5.</i></p>	<p><i>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-003 and Volume 5: Appendix SV-002.</i></p> <p><i>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.</i></p>	<p><i>The SV-04 figure series shows the locations at which a quantitative assessment of the direct effects of operational sound and/or vibration has been carried out. These are labelled as assessment locations with a reference number to enable cross-reference to the operational sound and vibration reports contained in Volume 5: Appendix SV-004 and Volume 5: Appendix SV-002.</i></p> <p><i>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.</i></p>
Community Forum Area name				
CFA 07 – Colne Valley	✘	✘	✘	✘
CFA 08 – The Chalfonts and Amersham	✘	✘	✘	✘
CFA 09 – Central Chilterns	✘	✘	✘	✘
CFA 10 – Dunsmore, Wendover and Halton	✘	✘	✘	✘
CFA 11 – Stoke Mandeville and Aylesbury	✓	✓	✓	✓
CFA 12 – Waddesdon and Quainton	✘	✘	✘	✘
CFA 13 – Calvert, Steeple Claydon, Twyford and Chetwode	✘	✘	✘	✘
CFA 14 – Newton Purcell to Brackley	✘	✘	✘	✘
CFA 15 – Greatworth to Lower Boddington	✘	✘	✘	✘
CFA 16 – Ladbroke and Southam	✘	✘	✘	✘
CFA 17 – Offchurch and Cubbington	✘	✘	✘	✘
CFA 18 – Stoneleigh, Kenilworth and Burton Green	✘	✘	✘	✘
CFA 19 – Coleshill Junction	✘	✘	✘	✘
CFA 20 – Curdworth to Middleton	✘	✘	✘	✘
CFA 21 – Drayton Bassett, Hints and Weeford	✘	✘	✘	✘
CFA 22 – Whittington to Handsacre	✘	✘	✘	✘
CFA 23 – Balsall Common and Hampton-in-Arden	✘	✘	✘	✘

CFA 24 – Birmingham Interchange and Chelmsley Wood	x	x	x	x
CFA 25 – Castle Bromwich and Bromford	x	x	x	x
CFA 26 – Washwood Heath to Curzon Street	x	x	x	x

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Legend features	Definition	Source	Copyright
Airborne sound 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 contained in Volume 5: Appendix SV-004.	High Speed Two (HS2) Ltd	
Airborne sound 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 contained in Volume 5: Appendix SV-004.	High Speed Two (HS2) Ltd	
Airborne sound, 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 & vibration reports contained in Volume 5: Appendix SV-004.	High Speed Two (HS2) Ltd	
Airborne sound 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	
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, which also describes how these are linked to baseline levels at assessment locations.	High Speed Two (HS2) Ltd	
Committed developments	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	© Crown Copyright and database rights 2014 Ordnance Survey Licence Number 100049190.
Community forum boundary	The Environmental Statement has been split into 26 sections called Community Forum Areas.	High Speed Two (HS2) Ltd	© Crown Copyright and database rights 2014 Ordnance Survey Licence Number 100049190.
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-003.	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-003.	High Speed Two (HS2) Ltd	

Legend features	Definition	Source	Copyright
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-003.	High Speed Two (HS2) Ltd	
County boundary	County boundaries from Ordnance Survey boundary mapping.	Ordnance Survey	© Crown Copyright and database rights 2014 Ordnance Survey Licence Number 100049190.
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 boundary	Ordnance Survey local authority boundary mapping.	Ordnance Survey	© Crown Copyright and database rights 2014 Ordnance Survey Licence Number 100049190.
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	
Envisaged measures further reducing noise effects	<p>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).</p> <p>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.</p>	High Speed Two (HS2) Ltd	
Envisaged mitigation to avoid / reduce significant noise effects	<p>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.</p> <p>Engineering e.g. cuttings (green tunnels separately marked): 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.</p>	High Speed Two (HS2) Ltd	
Ground-borne sound & 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 sound & 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	

Legend features	Definition	Source	Copyright
Ground-borne sound 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-004.	High Speed Two (HS2) Ltd	
Minor ground-borne noise or vibration impact	Buildings at which a minor operational ground-borne sound or vibration impact is predicted from the Proposed Scheme.	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 sound impacts at buildings	The buildings shown on SV-02 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 SV001-000). Panel B on SV-02 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).	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).	High Speed Two (HS2) Ltd	
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).	High Speed Two (HS2) Ltd	
Route in tunnel Route on surface	Represents the proposed route of HS2, split into route on surface and tunnelled sections.	High Speed Two (HS2) Ltd	
Sound Contours (SV-01)	The sound levels from the Proposed Scheme (expressed as $L_{pAeq,T}$ and representing sound from the new railway only) are presented in 5 dB steps. The levels are shown in the panel in the top-right hand corner of SV-01.	High Speed Two (HS2) Ltd	
Sound contours (SV-02)	The sound levels from the Proposed Scheme (expressed as $L_{pAeq,T}$ and representing sound from the new railway only) are presented at two sound levels: 40 dB $L_{Aeq,T 23:00 to 07:00}$ and 55 dB $L_{Aeq,T 23:00 to 07:00}$. The corresponding daytime levels ($L_{Aeq,T 07:00 to 23:00}$) are shown in Panel A of SV-02.	High Speed Two (HS2) Ltd	

HIGH SPEED RAIL (LONDON - WEST MIDLANDS) ADDITIONAL PROVISION

Environmental Statement

CFA 11 | Stoke Mandeville and Aylesbury

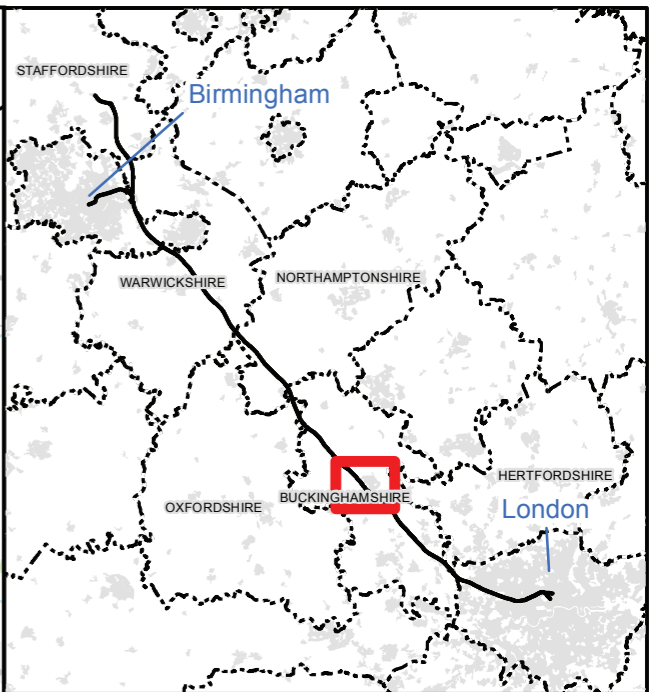
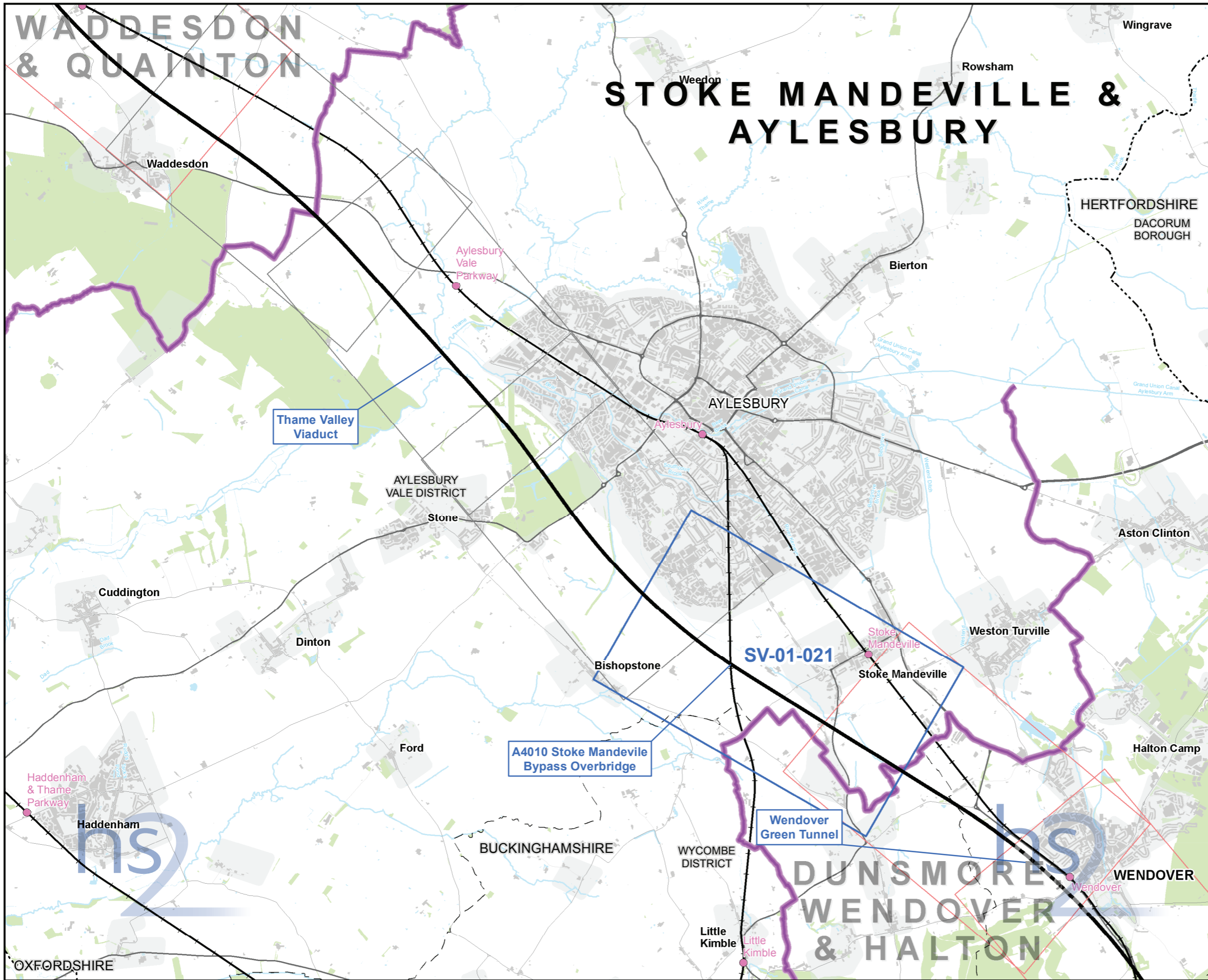
SV-01 - Operational Sound Contour Maps and Likely Significant Effects

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

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

SV-04 - Assessment and Monitoring Locations for Operational Sound, Noise & Vibration Assessments

September 2014



Map Series Information:

SV-01 presents the predicted operational sound from the new railway.

The sound levels from the new railway (expressed as $L_{pAeq,T}$) are presented in typical noise mapping colours in 5 dB steps. There is a panel at the top right of the figure; the left-hand section of this panel contains a key communicating the night-time and daytime sound levels represented by the various colours. The right-hand part of the same panel contains text explaining how the sound levels presented on the figure inform the assessment of direct noise impacts and likely significant effects. A corresponding and similar panel is found on SV-02, along with the key sound contours that were used within the environmental assessment.

Also presented on SV-01 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;
- symbols representing buildings that would potentially qualify for noise insulation;
- labels identifying the residual likely significant noise effects of the Proposed Scheme, and
- 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.

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

Main Map Legend	
Route in tunnel	Map sheets included in this community forum with amendment
Route on surface	Map sheets included in this community forum with no amendment
Depot, station, headhouse or portal building	Map sheets not included in this community forum
Community forum boundary	
Existing railway station	
County boundary	
District/Borough boundary	

Map Number	SV-01-INDEX-CFA11
Map Name	Index Map of: Operational Sound Contour Maps and Likely Significant Effects AP1 Community Forum Area CFA11: Stoke Mandeville & Aylesbury

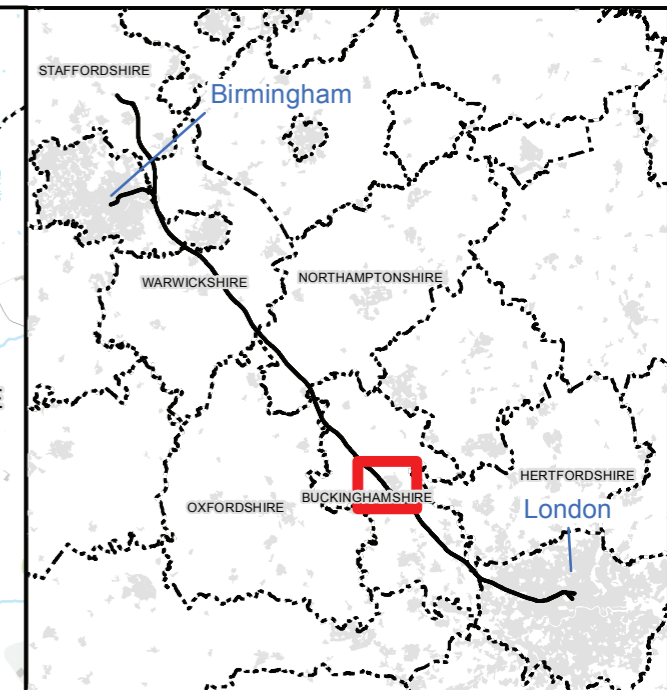
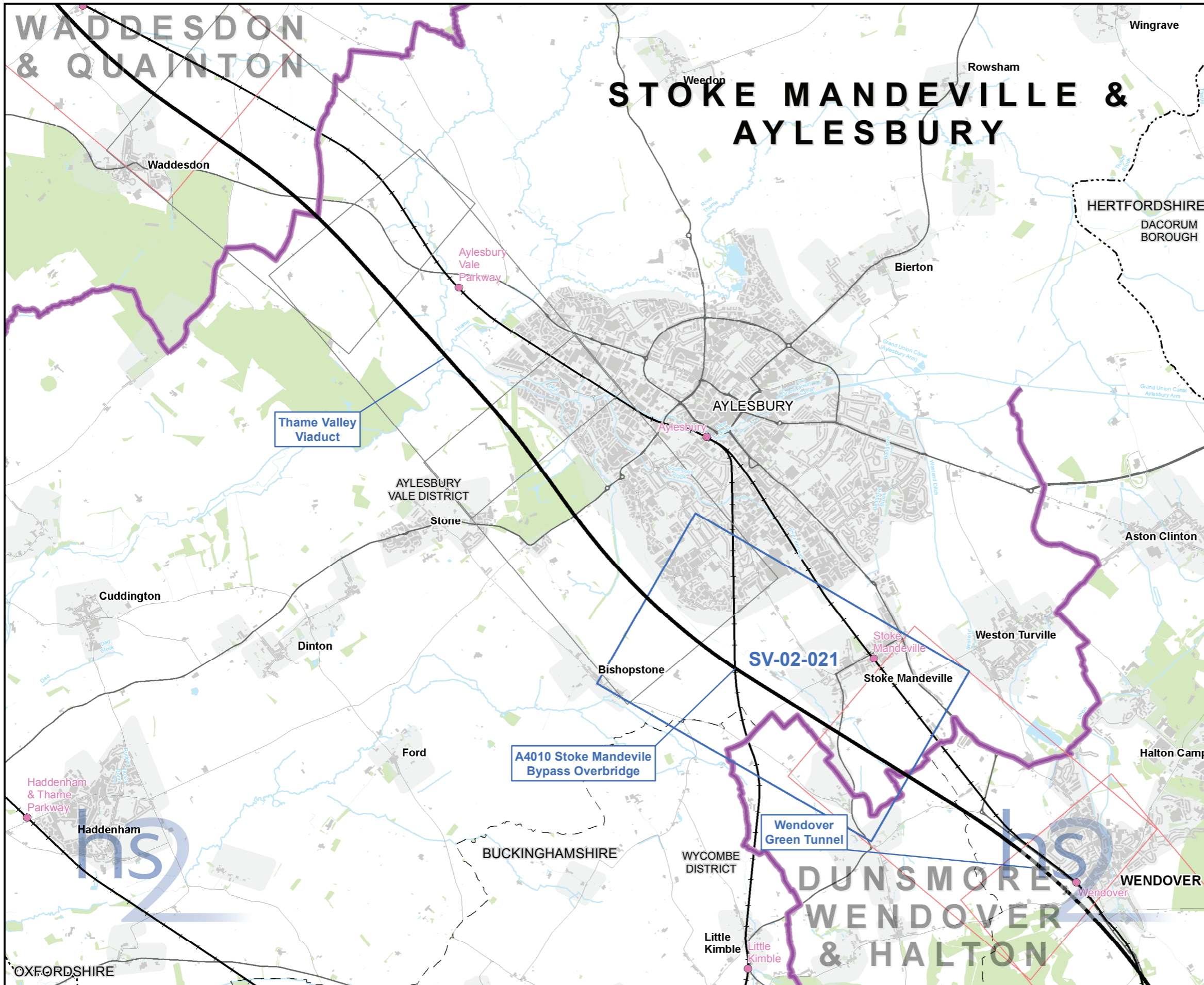
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Doc Number: C250-ARP-EV-MAP-000-005030-AP01 P01.00 Date: 19/08/14



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-01 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-004; 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-004.

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	Map sheets included in this community forum with amendment
Route on surface	Map sheets included in this community forum with no amendment
Depot, station, headhouse or portal building	Map sheets not included in this community forum
Community forum boundary	
Existing railway station	
County boundary	
District/Borough boundary	

Map Number	SV-02-INDEX-CFA11
Map Name	Index Map of: Operational Noise and Vibration Impacts and Likely Significant Effects (with Assessment Locations) AP1
	Community Forum Area CFA11: Stoke Mandeville & Aylesbury

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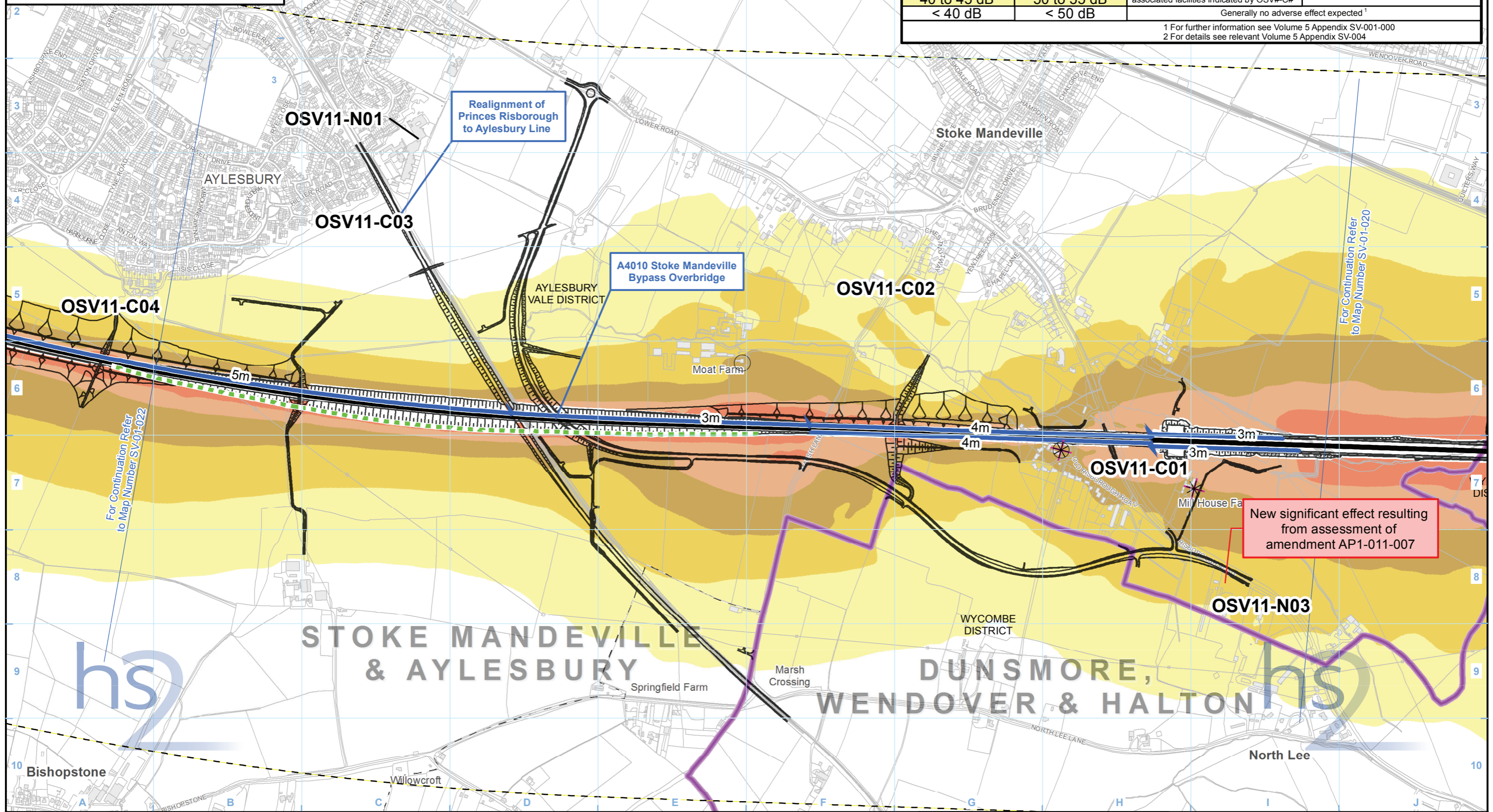
Doc Number: C250-ARP-EV-MAP-000-005031-AP01 P01.00 Date: 19/08/14

See text for full description and extent of significant effects. (*) Where AP is reason for significant effect.

Receptor/significant effect removed/added (as a result of amendment*: AP1-OSV11-N03). — AP change ref.
 Significant effect descriptor
 Reduced effect Increased effect

HS2 (rail only) sound 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
> 60 dB	> 70 dB	Likely significant effect on dwellings indicated by ○, * or X avoided by noise insulation	Effect dependent on receptor and baseline. For further details see Volume 5, Appendix SV004. Likely significant effect indicated by OSV#-N# ²
55 to 60 dB	65 to 70 dB	Effect dependent on sound level change and significance criteria. Likely significant effects on groups of dwellings and associated facilities indicated by OSV#-C# ²	Generally no adverse effect expected ¹
50 to 55 dB	60 to 65 dB		
45 to 50 dB	55 to 60 dB		
40 to 45 dB	50 to 55 dB		
< 40 dB	< 50 dB		

1 For further information see Volume 5 Appendix SV-001-000
 2 For details see relevant Volume 5 Appendix SV-004



Legend - General features

- Route in bored tunnel
- Route in green tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community forum boundary
- District/Borough boundary
- County 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 measures further reducing noise effects:

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

Airborne sound study area

- Potential additional noise insulation (triggered by maximum sound 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

* Labelled with total barrier height above rail level

Map Number: SV-01-021
 Map Name: AP-1
Operational Sound Contour Maps and Likely Significant Effects
 Community Forum Area CFA11:
 Stoke Mandeville & Aylesbury

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 Date: 20/08/14

Scale at A3: 1:10,000

0 100 200 300 400 Metres

See text for full description and extent of significant effects. (*) Where AP is reason for significant effect.

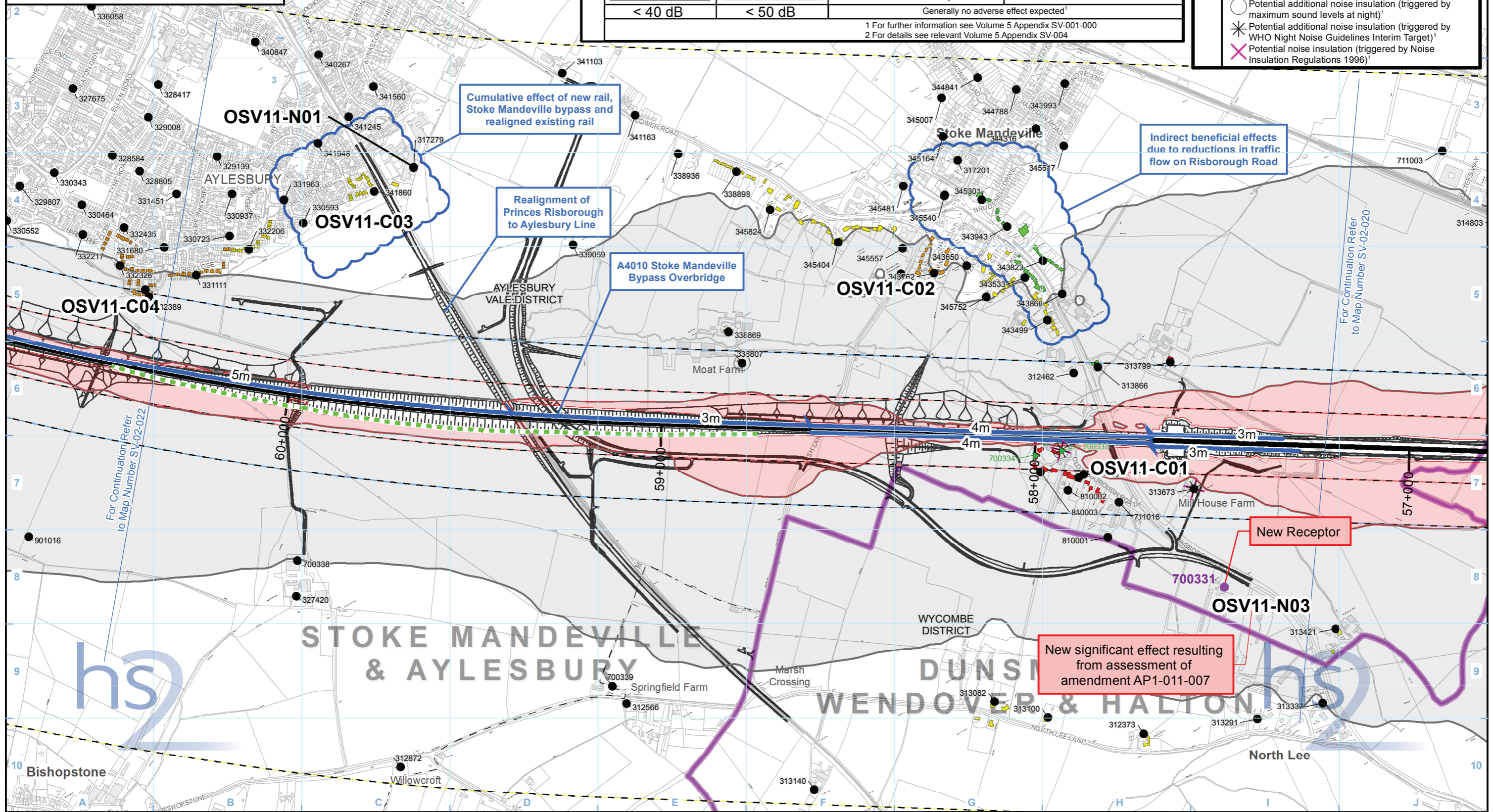
Receptor/significant effect removed/added (as a result of amendment*: AP1-OSV11-N03). — AP change ref.
 Significant effect descriptor
 Reduced effect Increased effect

Panel A	HS2 (rail only) sound 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 SV004. Likely significant effect indicated by OSV#-N# ²
	40 to 55 dB	50 to 65 dB	Effect dependent on sound level change (see Panel B) and significance criteria. Likely significant effects on groups of dwellings and associated facilities indicated by OSV#-C# ²	Generally no adverse effect expected ¹
< 40 dB	< 50 dB	Generally no adverse effect expected ¹		

1 For further information see Volume 5 Appendix SV-001-000
 2 For details see relevant Volume 5 Appendix SV-004

Panel B	Operational airborne sound impacts at buildings ¹ Change in sound level ($L_{pAeq,T}$ day / night)	
	Major adverse (>10dB)	Moderate adverse (5dB to 10dB)
Minor adverse (3dB to 5dB)	Negligible (-3dB to 3dB)	
Beneficial (<-3dB)		

○ Potential additional noise insulation (triggered by maximum sound 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



Legend - General features

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

Engineering earthworks: Non engineering earthworks:

- Embankment
- Cutting
- Embankment
- Cutting

* Residential buildings only
 * Labelled with total barrier height above rail level

Legend - Sound related features

- Committed developments (label as CFA##)
- Envisaged mitigation to avoid / reduce significant noise effects:
 - Landscaping and/or fence barriers*
 - Engineering e.g. cuttings (green tunnels separately marked)
 - Envisaged measures further reducing noise effects:
 - Other environmental features e.g. landscaping
 - Engineering e.g. cuttings
- Airborne sound study area

- Ground-borne sound & vibration study area (residential and non-residential)
- Ground-borne sound & vibration study area (highly sensitive non-residential)
- Airborne sound assessment location
- Airborne sound and vibration assessment location
- Ground-borne sound and/or vibration assessment location
- Airborne sound, ground-borne sound and vibration assessment location
- Minor ground-borne noise or vibration impact*

Map Number: SV-02-021

Map Name: AP-1
 Operational Noise and Vibration Impacts and Likely Significant Effects (with Assessment Locations)

Community Forum Area CFA11:
 Stoke Mandeville & Aylesbury

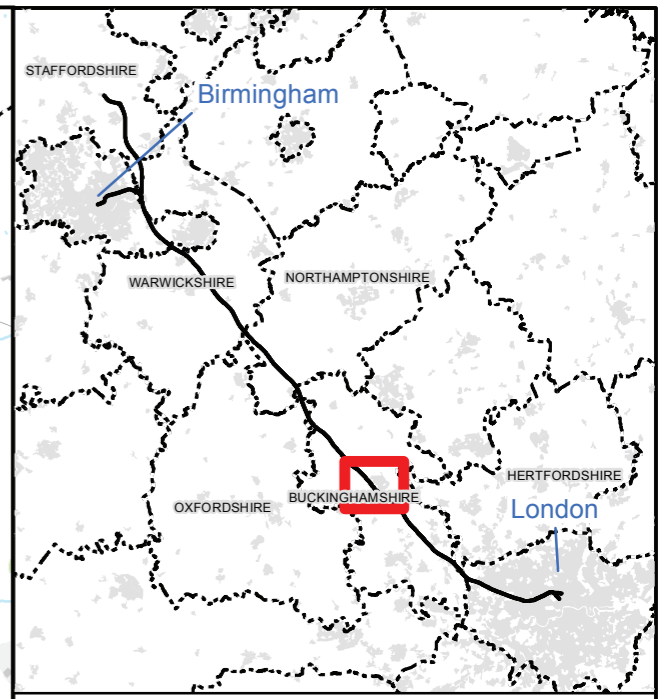
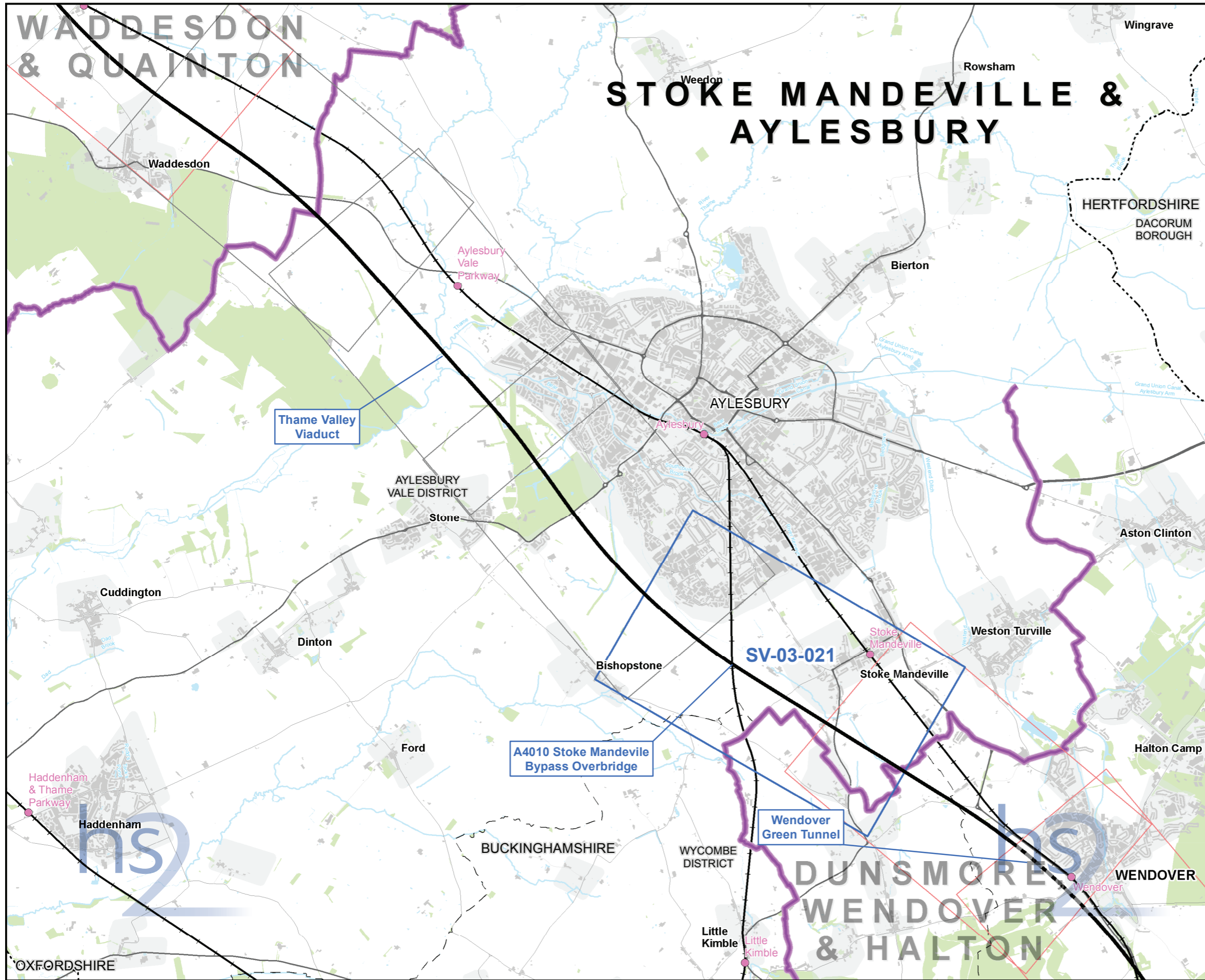
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Map Series Information:

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-003 and Volume 5: Appendix SV-002.

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.

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

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community forum boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community forum with amendment
- Map sheets included in this community forum with no amendment
- Map sheets not included in this community forum

Map Number **SV-03-INDEX-CFA11**

Map Name
 Index Map of:
 Assessment and Monitoring Locations for
 Construction Sound, Noise & Vibration Assessments
 AP1
 Community Forum Area CFA11:
 Stoke Mandeville & Aylesbury

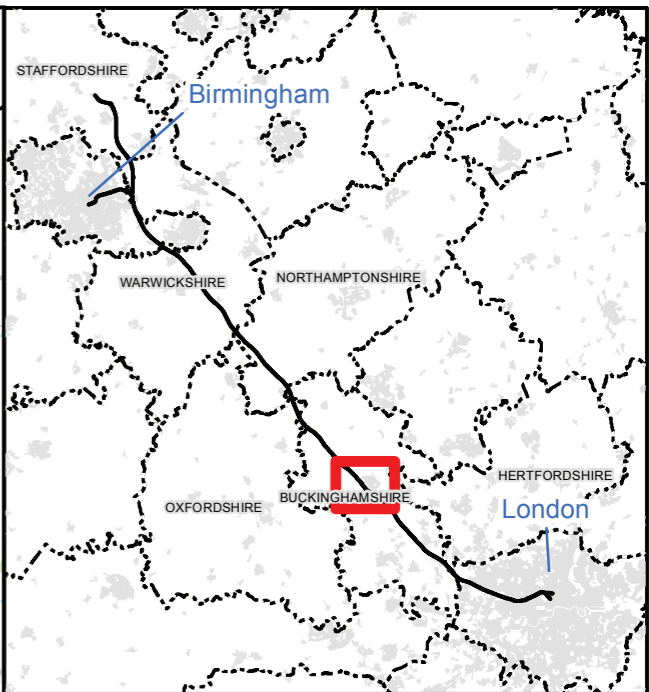
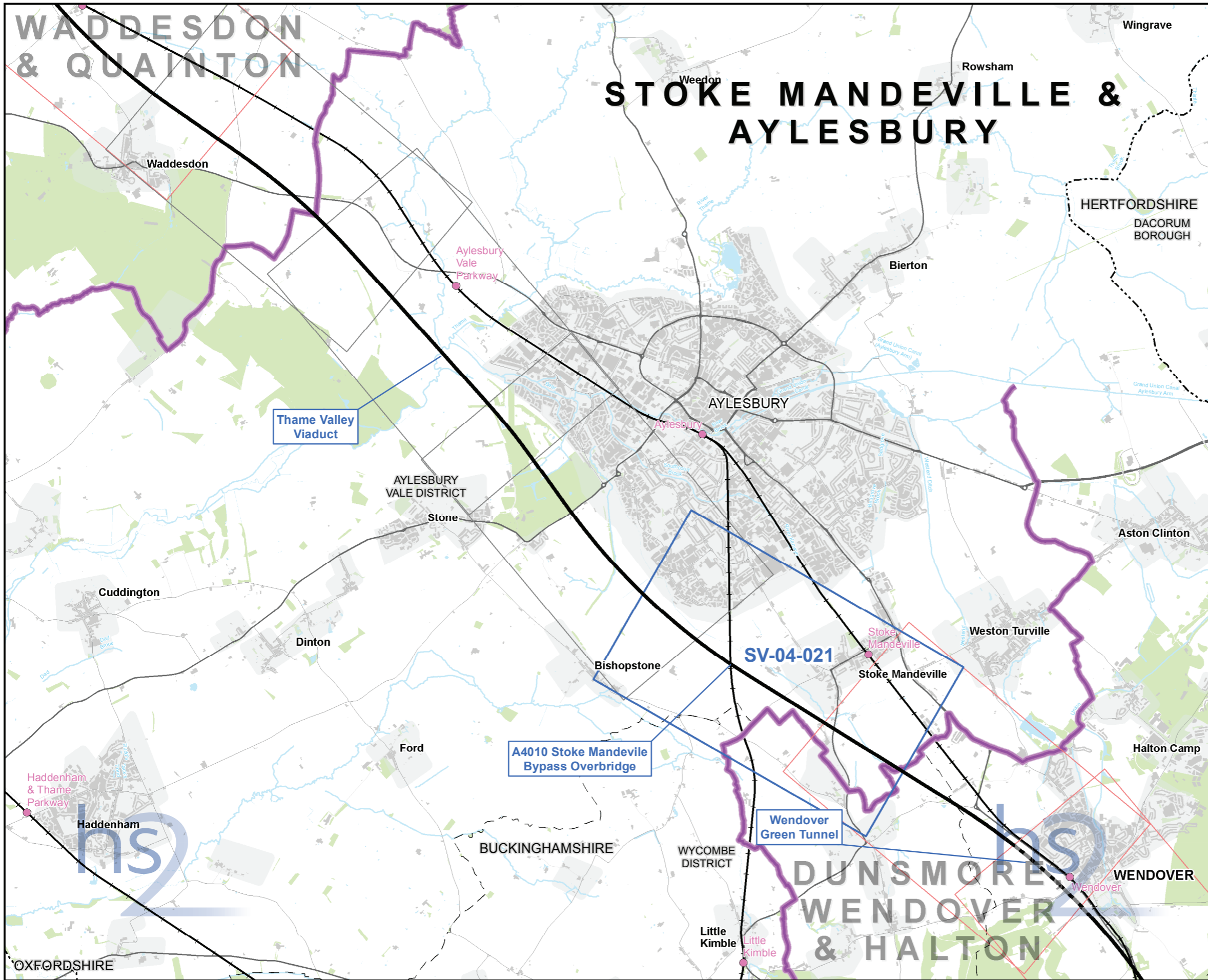
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Doc Number: C250-ARP-EV-MAP-000-005032-AP01 P01.00 **Date: 19/08/14**



Map Series Information:

The SV-04 figure series shows the locations at which a quantitative assessment of the direct effects of operational sound and/or vibration has been carried out. These are labelled as assessment locations with a reference number to enable cross-reference to the operational sound and vibration reports contained in Volume 5: Appendix SV-004 and Volume 5: Appendix SV-002.

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.

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

Main Map Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community forum boundary
- Existing railway station
- County boundary
- District/Borough boundary
- Map sheets included in this community forum with amendment
- Map sheets included in this community forum with no amendment
- Map sheets not included in this community forum

Map Number **SV-04-INDEX-CFA11**

Map Name
**Index Map of:
 Assessment and Monitoring Locations for
 Construction Sound, Noise & Vibration Assessments
 AP1**

**Community Forum Area CFA11:
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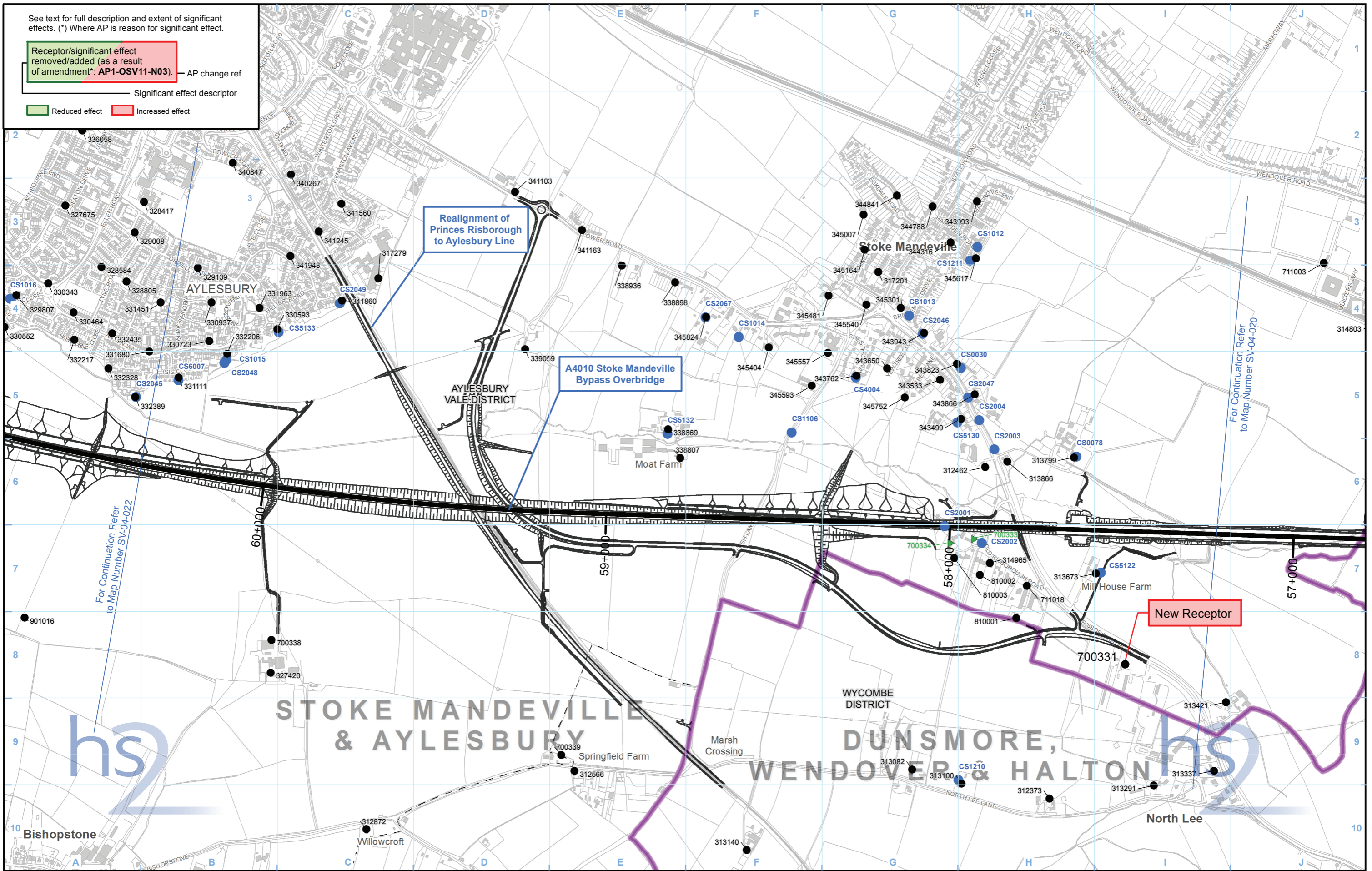
Doc Number: C250-ARP-EV-MAP-000-005033-AP01 P01.00 **Date:** 19/08/14

See text for full description and extent of significant effects. (*) Where AP is reason for significant effect.

Receptor/significant effect removed/added (as a result of amendment*: AP1-OSV11-N03). — AP change ref.

Significant effect descriptor

Reduced effect Increased effect



For Continuation Refer to Map Number SV-04-020

For Continuation Refer to Map Number SV-04-022

Legend - General features

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

Engineering earthworks:

- Embankment
- Cutting

Non engineering earthworks:

- Embankment
- Cutting

Legend - Sound related features

- Airborne sound assessment location
- Airborne sound and vibration assessment location
- Ground-borne sound and/or vibration assessment location
- Airborne sound, ground-borne 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 SV004)

(labelled with Measurement Location reference code)

Map Number: SV-04-021

Map Name: AP-1
Assessment and Monitoring Locations for Operational Sound, Noise & Vibration Assessments

Community Forum Area CFA11:
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HIGH SPEED RAIL (LONDON - WEST MIDLANDS) ADDITIONAL PROVISION

Environmental Statement

Volume 5 | Traffic and transport

September 2014

Contents

Data dictionary and definitions

Map series name	TR-03 - Significant Residual Transport Effects Arising during Construction and Construction Lorry Routes	TR-04 - Significant Residual Transport Effects Arising from Operation
Map series description	<i>This map series identifies the significant residual transport effects arising from construction of the Proposed Scheme and the construction lorry routes. Lorry routes are the identified routes which Heavy Goods Vehicles (HGVs) will use between compounds and the main A-road/strategic road network within each CFA. The effects include those that are temporary (adverse/beneficial) from transport-related impacts as a result of the Proposed Scheme on the transport network and the level of significance of those effects (minor, moderate or major).</i>	<i>This map series identifies the significant residual transport effects arising from operation of the Proposed Scheme. The effects include those that are permanent (adverse/beneficial) transport related impacts as a result of the Proposed Scheme on the transport network. The level of significance of the effects is minor, moderate or major. This is for the two forecast years 2026 (Opening Year) and 2041 (Design Year).</i>
Community Forum Area name		
CFA 07 – Colne Valley	x	x
CFA 08 – The Chalfonts and Amersham	x	x
CFA 09 – Central Chilterns	x	x
CFA 10 – Dunsmore, Wendover and Halton	x	x
CFA 11 – Stoke Mandeville and Aylesbury	x	x
CFA 12 – Waddesdon and Quainton	x	x
CFA 13 – Calvert, Steeple Claydon, Twyford and Chetwode	x	✓
CFA 14 – Newton Purcell to Brackley	x	x
CFA 15 – Greatworth to Lower Boddington	x	x
CFA 16 – Ladbroke and Southam	x	x
CFA 17 – Offchurch and Cubbington	x	x
CFA 18 – Stoneleigh, Kenilworth and Burton Green	✓	x
CFA 19 – Coleshill Junction	x	x
CFA 20 – Curdworth to Middleton	x	x
CFA 21 – Drayton Bassett, Hints and Weeford	x	x
CFA 22 – Whittington to Handsacre	x	x
CFA 23 – Balsall Common and Hampton-in-Arden	x	x
CFA 24 – Birmingham Interchange and Chelmsley Wood	✓	x
CFA 25 – Castle Bromwich and Bromford	x	x
CFA 26 – Washwood Heath to Curzon Street	x	x

HIGH SPEED RAIL (LONDON - WEST MIDLANDS) ADDITIONAL PROVISION

Environmental Statement

Data dictionary and definitions

September 2014

Data dictionary and definitions

Legend features	Definition	Source	Copyright
Community forum boundary	The Environmental Statement has been split into 26 sections called Community Forum Areas.	High Speed Two (HS2) Ltd	© Crown Copyright and database rights 2014 Ordnance Survey Licence Number 100049190.
Construction Significant Effects: Adverse-permanent Adverse-temporary Beneficial-temporary Beneficial-permanent	Adverse – deterioration in existing conditions as a result of the Proposed Scheme Beneficial – improvement of existing conditions as a result of the Proposed Scheme Permanent – permanent change as a result of the Proposed Scheme Temporary – temporary change as a result of the Proposed Scheme (likely within construction phase of scheme).	High Speed Two (HS2) Ltd	
Construction lorry routes	Public highways which may be used for HGV construction traffic.	High Speed Two (HS2) Ltd	© Crown Copyright and database rights 2014 Ordnance Survey Licence Number 100049190.
County boundary	County boundaries from Ordnance Survey boundary mapping.	Ordnance Survey	© Crown Copyright and database rights 2014 Ordnance Survey Licence Number 100049190.
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 boundary	Ordnance Survey local authority boundary mapping.	Ordnance Survey	© Crown Copyright and database rights 2014 Ordnance Survey Licence Number 100049190.
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	
Operational Significant Effects: Adverse-permanent Adverse-temporary Beneficial-temporary Beneficial-permanent	Adverse- deterioration in existing conditions as a result of the Proposed Scheme Beneficial – improvement of existing conditions as a result of the Proposed Scheme Permanent – permanent change as a result of the Proposed Scheme, effects can be for 2026, 2041 or both operational assessment years. Temporary – temporary change as a result of the Proposed Scheme.	High Speed Two (HS2) Ltd	
Route in tunnel Route on surface	Represents the proposed route of HS2, split into route on surface and tunnelled sections.	High Speed Two (HS2) Ltd	
Significant effect reference	Identifier code for transport-related residual significant effects, including - SMR category of effect, CFA the effect is located within, individual identification number, whether the significant effect is major, moderate or minor (Significance Criteria Technical Note) and which operational year the effect is predicted.	High Speed Two (HS2) Ltd	
Water body	Based on Ordnance Survey Vector Map District.	Ordnance Survey	© Crown Copyright and database rights 2014 Ordnance Survey Licence Number 100049190.
Watercourse	The Detailed River Network (DRN) is the only large-scale, accurate and fully attributed digital river centreline covering England and Wales.	Environment Agency	Contains Environment Agency information © Environment Agency and database right.
Woodland	Woodland areas derived from Ordnance Survey mastermap data.	Ordnance Survey	© Crown Copyright and database rights 2014 Ordnance Survey Licence Number 100049190.

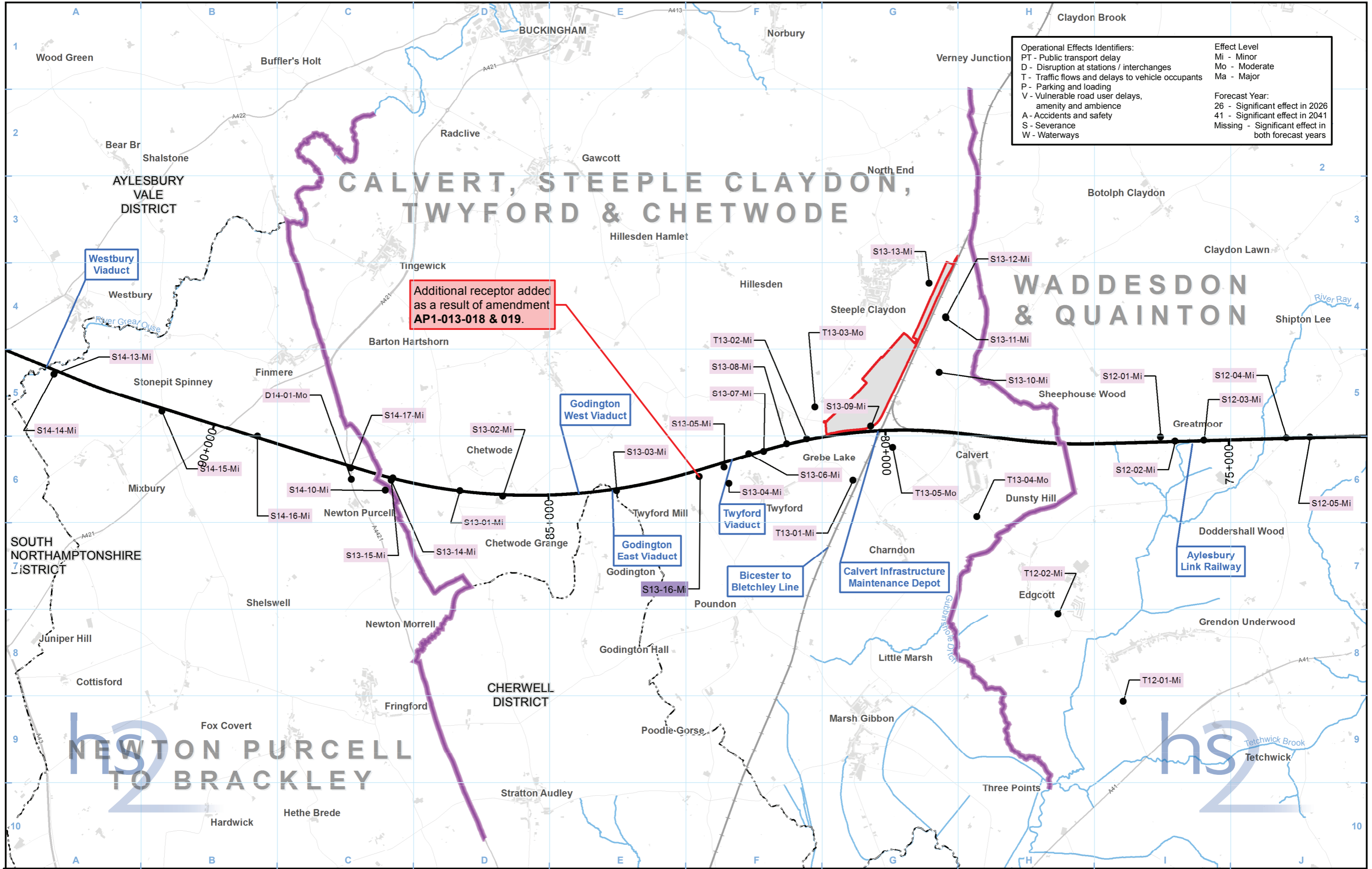
HIGH SPEED RAIL (LONDON - WEST MIDLANDS) ADDITIONAL PROVISION

Environmental Statement

CFA 13 | Calvert, Steeple Claydon, Twyford and Chetwode

TR-04 - Significant Residual Transport Effects arising from Operation

September 2014



Operational Effects Identifiers:
 PT - Public transport delay
 D - Disruption at stations / interchanges
 T - Traffic flows and delays to vehicle occupants
 P - Parking and loading
 V - Vulnerable road user delays, amenity and ambience
 A - Accidents and safety
 S - Severance
 W - Waterways

Effect Level
 Mi - Minor
 Mo - Moderate
 Ma - Major

Forecast Year:
 26 - Significant effect in 2026
 41 - Significant effect in 2041
 Missing - Significant effect in both forecast years

Additional receptor added as a result of amendment AP1-013-018 & 019.

<p>Legend</p> <ul style="list-style-type: none"> Route in tunnel Route on surface Depot, station, headhouse or portal building Community forum boundary County boundary District/Borough boundary 	<p>Operational significant effects arising from the AP</p> <ul style="list-style-type: none"> Adverse, permanent Adverse, temporary Beneficial, permanent Beneficial, temporary 	<p>Operational significant effects unchanged from the AP</p> <ul style="list-style-type: none"> Adverse-permanent Adverse-temporary Beneficial-temporary Beneficial-permanent 	<p>Significant effects reference</p> <p>PT24-01-Mi-26</p> <p>Forecast Year Effect Level Feature Number CFA Number Identifier - see across</p>	<p>Map Number: TR-04-068</p> <p>Map Name: Significant Residual Transport Effects Arising from Operation AP1</p> <p>Community Forum Area CFA13: Calvert, Steeple Claydon, Twyford & Chetwode</p>	<p>hs2 logo</p> <p>HS2 Ltd accept no responsibility for any circumstances, which arise from the reproduction of this map after alteration, amendment or abbreviation or if it is issued in part or issued incomplete in any way.</p> <p>Scale at A3: 1:50,000</p> <p>Registered in England. Registration number 06791686. Registered office: One Canada Square, London, E14 5AB</p> <p>© Crown copyright and database rights 2014. Ordnance Survey Licence Number 100049190.</p> <p>Doc Number: C222-ATK-EV-MAP-020-000420-AP01</p> <p>Date: 27/08/14</p>
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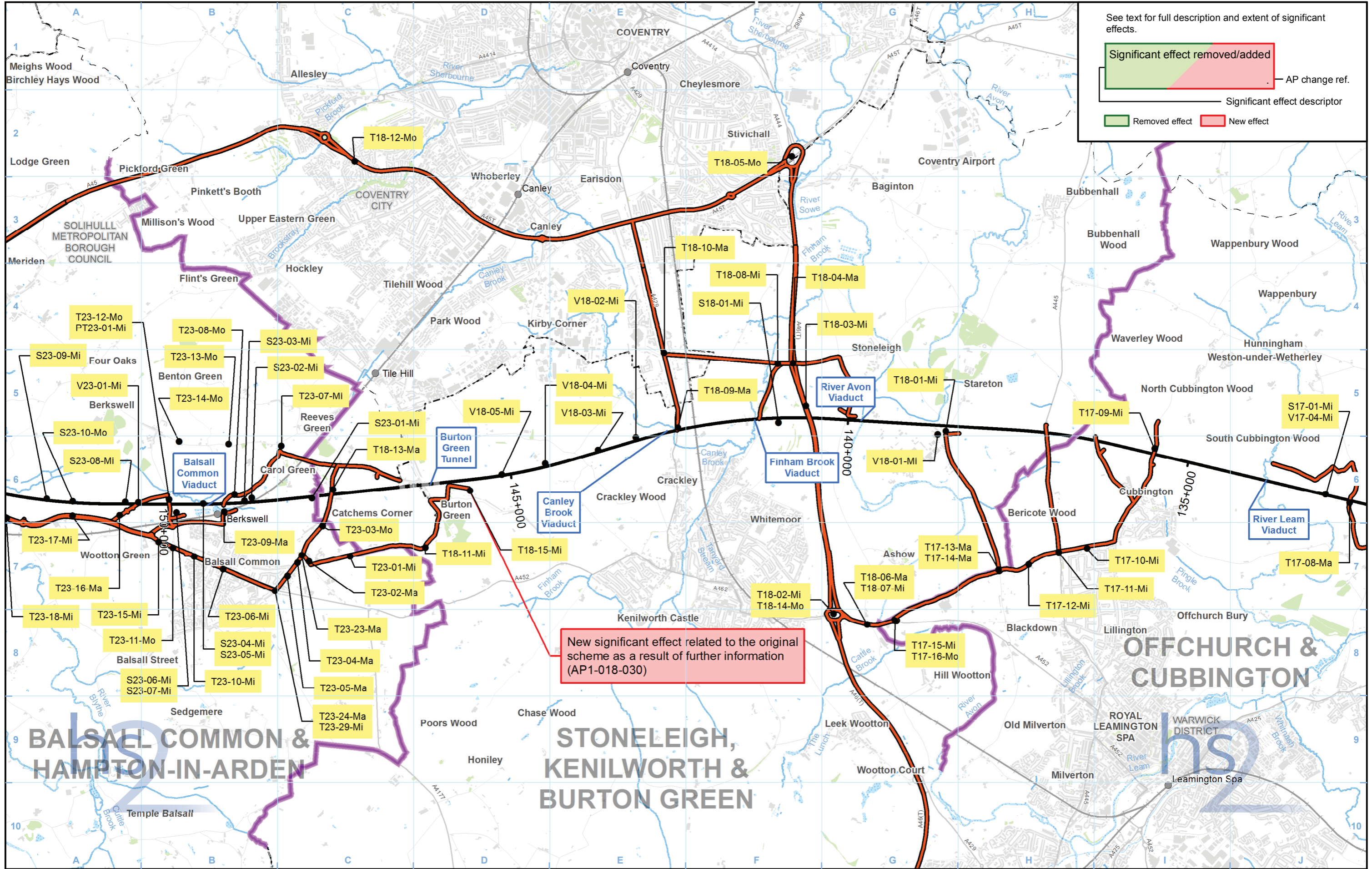
HIGH SPEED RAIL (LONDON - WEST MIDLANDS) ADDITIONAL PROVISION

Environmental Statement

CFA 18 | Stoneleigh, Kenilworth and Burton Green

TR-03 - Significant Residual Transport Effects during Construction
and Construction Lorry Routes

September 2014



See text for full description and extent of significant effects.

Significant effect removed/added — AP change ref.

Significant effect descriptor

Removed effect New effect

Legend

- Route in tunnel
- Route on surface
- Depot, station, headhouse or portal building
- Community forum boundary
- County boundary
- District/Borough boundary
- Watercourse
- Water body
- Woodland
- Construction significant effects
 - Adverse-permanent
 - Adverse-temporary
 - Beneficial-temporary
 - Beneficial-permanent
 - Construction lorry routes

Significant effects reference
PT24-01-Ma

Effect Level
Feature Number
CFA Number
Identifier - see across

Construction effects identifiers:
PT - Public transport delay
D - Disruption at stations / interchanges
T - Traffic flows and delays to vehicle occupants
P - Parking and loading
V - Vulnerable road user delays, amenity and ambience
A - Accidents and safety
S - Severance
W - Waterways

Effect level:
Mi - Minor
Mo - Moderate
Ma - Major

Map Number: TR-03-103

Map Name: Significant Residual Transport Effects Arising during Construction and Construction Lorry Routes AP1

Community Forum Area CFA18: Stoneleigh, Kenilworth & Burton Green

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Doc Number: C223-CSI-EV-MAP-030-000145-AP01

Date: 08/08/14

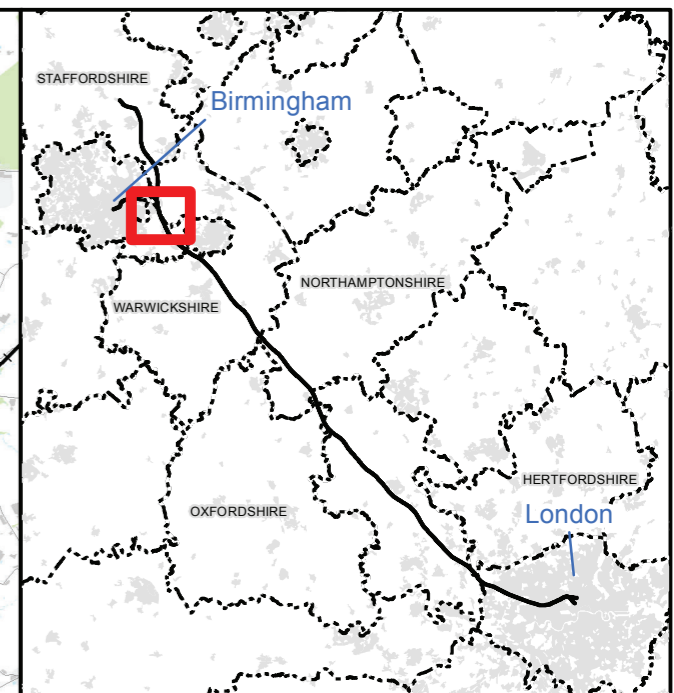
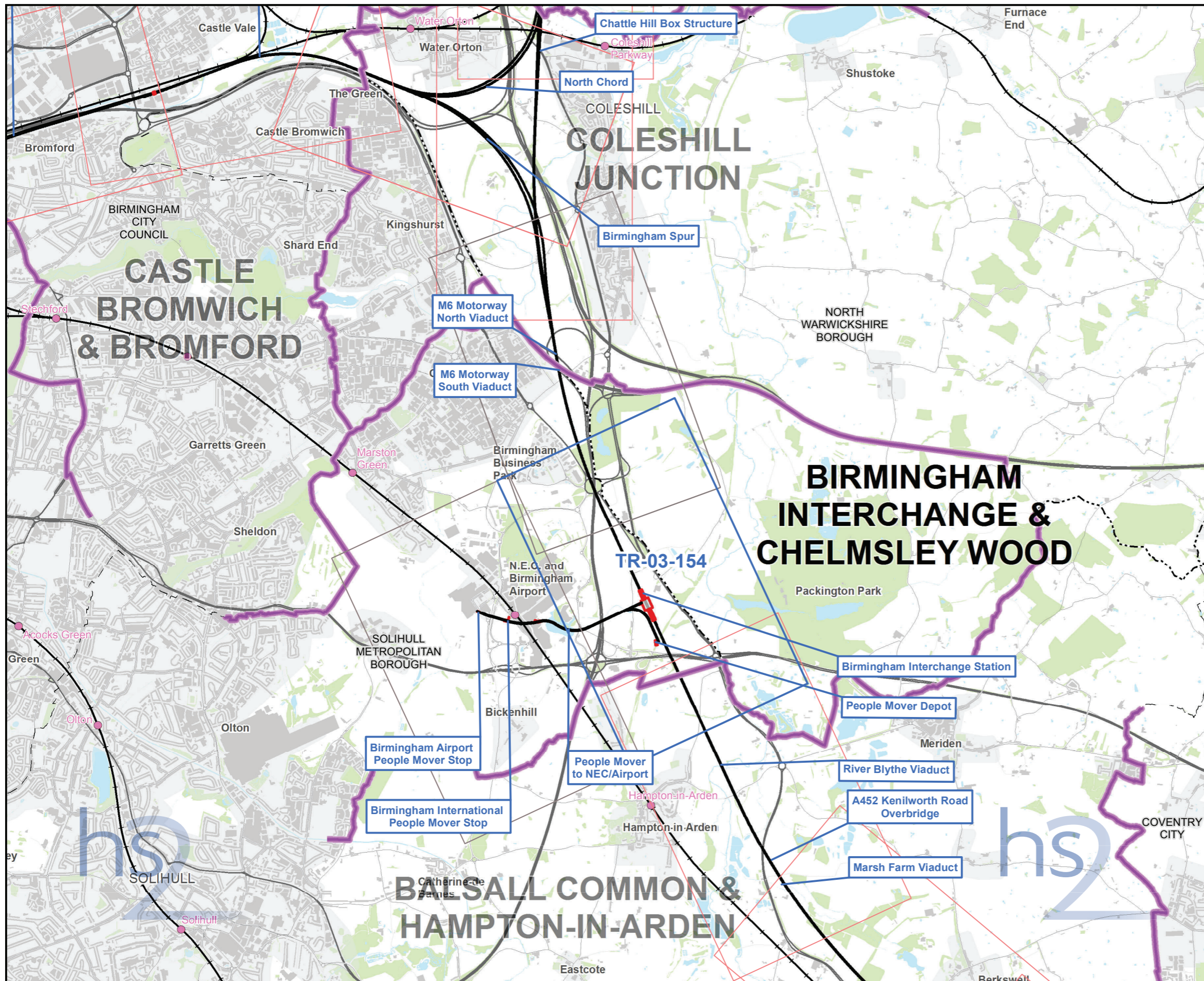
HIGH SPEED RAIL (LONDON - WEST MIDLANDS) ADDITIONAL PROVISION

Environmental Statement

CFA 24 | Birmingham Interchange and Chelmsley Wood

TR-03 - Significant Residual Transport Effects during Construction
and Construction Lorry Routes

September 2014



Map Series Information:

This map series identifies the significant residual transport effects arising from construction of the Proposed Scheme and the construction lorry routes. Lorry routes are the identified routes which Heavy Goods Vehicles (HGVs) will use between compounds and the main A-road/strategic road network within each CFA. The effects include those that are temporary (adverse/beneficial) from transport-related impacts as a result result of the Proposed Scheme on the transport network and the level of significance of those effects (minor, moderate or major).

Main Map Legend

Route in tunnel	Map sheets included in this community forum with amendment
Route on surface	Map sheets included in this community forum with no amendment
Depot, station, headhouse or portal building	Map sheets not included in this community forum
Community forum boundary	
Existing railway station	
County boundary	
District/Borough boundary	

Map Number	TR-03-INDEX-CFA24
Map Name	Index Map of: Significant Residual Transport Effects Arising during Construction and Construction Lorry Routes AP1
Community Forum Area CFA24:	Birmingham Interchange & Chelmsley Wood

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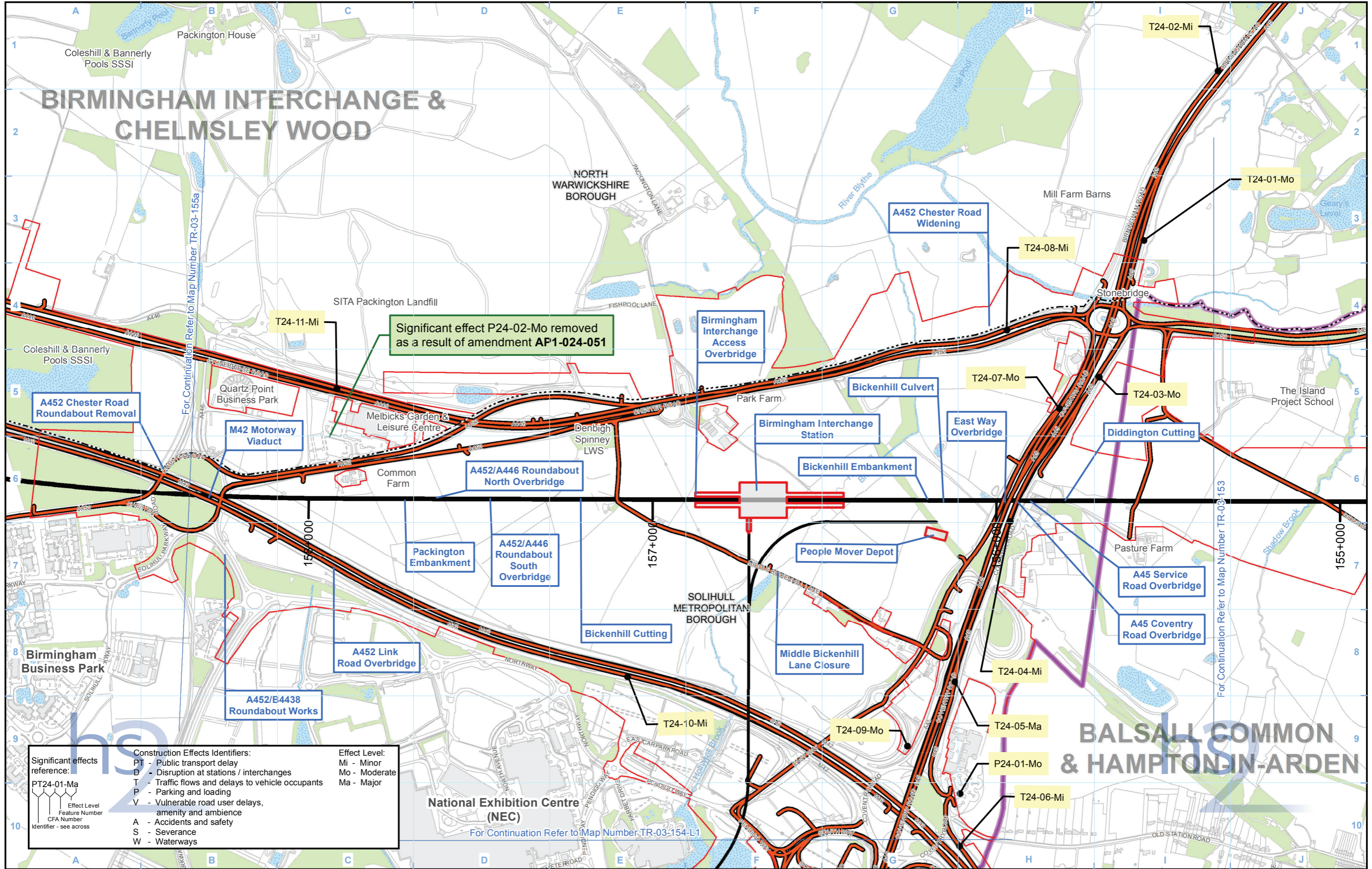
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Doc Number: C224-ARP-GI-MAP-040-000102-AP01 Date: 05/08/14

BIRMINGHAM INTERCHANGE & CHELMSLEY WOOD



Significant effects reference:	Construction Effects Identifiers:	Effect Level:
PT24-01-Ma	PT - Public transport delay	Mi - Minor
	D - Disruption at stations / interchanges	Mo - Moderate
	T - Traffic flows and delays to vehicle occupants	Ma - Major
	P - Parking and loading	
	V - Vulnerable road user delays, amenity and ambience	
	A - Accidents and safety	
	S - Severance	
	W - Waterways	

Legend	
	Route in tunnel
	Route on surface
	Depot, station, headhouse or portal building
	Land potentially required during construction
	Community forum boundary
	County boundary
	District/Borough boundary
	Water body
	Watercourse
	Woodland
	Adverse, permanent
	Beneficial, permanent
	Beneficial, temporary
	Adverse, temporary
	Construction lorry routes

See text for full description and extent of significant effects. (*) Where AP is reason for significant effect.

Receptor/significant effect removed/added (as a result of amendment*: AP1-XXX-YYY). — AP change ref.

Reduced effect Increased effect

Significant effect descriptor

Map Number	TR-03-154
Map Name	Significant Residual Transport Effects Arising during Construction and Construction Lorry Routes AP1
Community Forum Area CFA24: Birmingham Interchange & Chelmsley Wood	

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Date: 24/07/14



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HIGH SPEED RAIL (LONDON - WEST MIDLANDS) ADDITIONAL PROVISION

Environmental Statement

Volume 5 | Technical appendices

CFA 11 Stoke Mandeville and Aylesbury

LV-001-011 - Landscape report

Landscape and visual assessment

September 2014

Viewpoint AP1 114.2.003: View south-west from Elmfield, 30 Lower Road, south of Aylesbury

AP1-011-008

This viewpoint is representative of the typical view available from residential property at Elmfield, 30 Lower Road.

Figure 1: Viewpoint AP1 114.2.002. – summer view date taken: 10 July 2014. Nikon D60 35mm lens (stitched panorama).



Winter (based on a review of summer photography and professional judgement)

The existing view is essentially rural and comprises the B4443 Lower Road in front of a number of flat agricultural fields. Roadside vegetation in the foreground filters lower level views. Traffic travelling along the B4443 Lower Road results in a dynamic, busy visual characteristic within the foreground. The middle ground and background feature a number of fields defined by hedgerows and containing occasional mature trees which combine to give the view a relatively well-wooded appearance. Two lines of overhead power cables are visible running from the foreground to the background in the centre of the view. To the right of the view some built development is visible along Lower Road. Similar views are also available from residential properties on Lower Road to the south-east.

Summer

In summer, the roadside vegetation within the foreground largely screens views of the arable land in the middle ground and background of the view (illustrated in Figure 1).

Night

At night, light spill associated with Aylesbury town is perceptible in the right background of the view. Light from passing vehicles in the foreground is perceptible.

Viewpoint AP1 120.2.002: View west from residential properties on Parrot Close, Dormer Close and Roberts Way

AP1-011-011

This viewpoint is representative of the view from the residential properties on Parrot Close, Dormer Close and Roberts Way.

Figure 2: Viewpoint AP1 120.2.002 – summer view date taken: 12 July 2014. Nikon D60 32mm lens (stitched panorama).



Winter (based on a review of summer photography and professional judgement)

Existing views from these receptors look across amenity green space associated with the adjacent housing estate. The foreground of the view comprises Parrot Close and associated parking spaces. Amenity planting associated with the car parking space intermittently filters views to the middle ground. The right foreground is dominated by an existing pylon and overhead power lines. Vegetation lining Bear Brook across the middle ground provides the horizon to the view, beyond which only glimpses of arable farmland are available.

Summer

During summer, the vegetation in the foreground and middle ground largely screens views to the arable farmland in the background (illustrated in Figure 2).

Night-time

At night, there is some noticeable light spill from the nearby street lighting within the housing estate, as well as from street lighting along A418 Oxford Road and the associated roundabout.

Viewpoint AP1 128.2.001: View west from dwellings on Putlowes Drive, Fleet Marston

AP1-011-013

This viewpoint is representative of the view available from the residential properties on Putlowes Drive, Fleet Marston.

Figure 3: Viewpoint AP1 128.2.001 – summer view date taken: 11 September 2012. Nikon D60 32mm lens (stitched panorama).



Figure 4: Viewpoint AP1 128.2.001 – Winter view date taken: 8 February 2013. Nikon D60 32mm lens (stitched panorama).



Winter

Views from these receptors are essentially rural with Putlowes Drive extending from the right of the foreground to the left of the middle ground. The middle ground comprises rising pastoral land with a hedgerow extending across the extent of the view. This largely blocks views to the background, although distant hills are visible to the right of the view (illustrated in Figure 3).

Summer

In summer, the hedgerow vegetation lining the roads provides further visual screening and restricts views to the background on the left and centre of the view. Hedgerow vegetation in the farmland to the south of the A41 road gives a more well-wooded appearance and screens some of the scattered farm buildings (illustrated in Figure 4).

Night

At night the view is across a predominantly unlit rural landscape with very limited lighting in the view.

1 Visual assessment matrix

Table 1: Visual assessment matrix

Viewpoints		Construction		Operation year 1 (2026)			Operation year 15 (2041)	Operation year 60 (2086)
		Winter	Night-time	Winter	Summer	Night-time	summer	summer
AP1 114.2.003	View south-west from Elmfield, 30 Lower Road, south of Aylesbury	Major adverse	Negligible	Moderate adverse	Moderate adverse	No further assessment required	Minor adverse	Minor adverse
AP1 120.2.002	View west from residential property on Parrot Close, Dormer Close and Roberts Way	Moderate adverse	Minor adverse	Moderate adverse	Moderate adverse	Negligible	Minor adverse	Negligible
AP1 128.2.001	View west from dwellings on Putlowes Drive, Fleet Marston	Moderate adverse	Negligible	Negligible	Negligible	No further assessment required	Negligible	Negligible

2 Permanent effects arising during operation

2.1 Visual assessment

Table 2: Schedule of not significant visual effects during operation

Viewpoint	Description of effect – operation year 1 (2026)		Description of effect – operation year 15 (2041)	Description of effect – operation year 60 (2086)
	Winter	Summer	summer	summer
AP1 114.2.003 : View south-west from Elmfield, 30 Lower Road, south of Aylesbury	Significantly affected: refer to Volume 2 of the AP1 ES.	Significantly affected: refer to Volume 2 of the AP1 ES.	Reinstatement of hedgerow vegetation along the B4443 Lower Road and the introduction of planting along the eastern side of the A4010 Stoke Mandeville Bypass and associated roundabout will have established sufficiently to begin to screen views of the Proposed Scheme. Taken in the context of a view containing an existing busy road, the magnitude of change will be low, resulting in minor adverse effects.	Reinstated planting lost during construction will have fully matured and will largely screen views of the A4010 Stoke Mandeville Bypass and associated roundabout. The magnitude of change will be low and will result in minor adverse effects.
	Additional lighting associated with the operation of the Proposed Scheme is not anticipated at this location therefore the magnitude of change to this receptor at night is considered to be negligible, resulting in negligible effects.	No further assessment required.	No further assessment required.	No further assessment required.
AP1 120.2.002: View west from residential property on Parrot Close, Dormer Close and Roberts Way	Significantly affected: refer to Volume 2 of the AP1 ES.	Significantly affected: refer to Volume 2 of the AP1 ES.	Reinstated planting lost during construction will have established sufficiently to partially screen views of the Proposed Scheme in the background. The magnitude of change will be low and will result in minor adverse effects.	Reinstated planting lost during construction will have fully matured and will screen views of the Proposed Scheme in the background. The magnitude of change will be negligible and will result in negligible effects.
	Additional lighting associated with the operation of the Proposed Scheme is not anticipated at this location therefore the magnitude of change to this receptor at night is considered to be negligible, resulting in negligible effects.	No further assessment required.	No further assessment required.	No further assessment required.
AP1 128.2.001: View west from dwellings on Putlowes Drive, Fleet Marston	Significantly affected: refer to Volume 2 of the AP1 ES.	The widened Putlowes Drive will be visible in the foreground of views. This, however, this will be seen within the context of a view containing an existing road. The magnitude of change will be negligible and will result in minor adverse effects.	No further assessment required.	No further assessment required.
	Additional lighting associated with the operation of the Proposed Scheme is not anticipated at this location therefore the magnitude of change to this receptor at night is considered to be negligible, resulting in negligible effects.	No further assessment required.	No further assessment required.	No further assessment required.

HIGH SPEED RAIL (LONDON - WEST MIDLANDS) ADDITIONAL PROVISION

Environmental Statement

Volume 5 | Technical appendices

CFA 12 Waddesdon and Quainton

LV-001-012 - Landscape report

Landscape and visual assessment

September 2014

Viewpoint AP1 145.2.002: View east from Grendon Underwood

AP1-012-015

This viewpoint is representative of the typical view available from residential properties on the east of Grendon Underwood.

Figure 1: Viewpoint AP1 145.2.002– summer view date taken: 10 July 2014. Nikon D60 35mm lens (stitched panorama)



Winter (based on a review of summer photography and professional judgement)

Views from these receptors are across well-wooded agricultural land. The foreground and middle ground of the view is made up of a relatively flat arable fields bounded by well-clipped hedgerows with occasional mature trees. A hedgerow in the right foreground restricts views to lower elements within the middle ground and background. The background of the view is well-wooded, with Doddershall Wood on the left of view. A series of pylons and overhead power lines are visible across the view from the centre background to the right middle ground. This includes pylons 4YH 022, 4YH 023, 4YH 024 and 4YH 025 in the left and centre background and 4YH 026 and 4YH 027 in the right middle ground.

Summer

In summer, the hedgerow in the foreground largely screens views to the arable land in the middle ground (illustrated in Figure 1).

Night

At night the view is across a predominantly unlit rural landscape with limited lighting in the view.

1 Visual assessment matrix

Table 1: Visual assessment matrix

Viewpoints		Construction		Operation year 1 (2026)			Operation year 15 (2041)	Operation year 60 (2086)
		Winter	Night-time	Winter	Summer	Night-time	summer	summer
AP1 145.2.002:	View east from Grendon Underwood	Moderate adverse	Negligible	Negligible	Negligible	No further assessment required	Negligible	Negligible

2 Permanent effects arising during operation

2.1 Visual assessment

Table 2: Schedule of not significant visual effects during operation

Viewpoint	Description of effect – operation year 1 (2026)		Description of effect – operation year 15 (2041)	Description of effect – operation year 60 (2086)
	Winter	Summer	summer	summer
AP1 145.2.002: View east from Grendon Underwood	Pylons 4YH 027, 4YH 026, 4YH 025 and 4YH 024 will appear similar to those visible in the existing views. The magnitude of change is considered to be negligible and will result in negligible effects.	No further assessment required.	No further assessment required.	No further assessment required.
	Additional lighting associated with the operation of the Proposed Scheme is not anticipated at this location, the magnitude of change to this receptor at night is considered to be negligible, resulting in negligible effects.	No further assessment required.	No further assessment required.	No further assessment required.

