



Buckinghamshire  
Aylesbury Vale District

Wendover Green Tunnel  
(South) Satellite Compound

# St Mary's Church

Grove Farm  
Accommodation  
Underbridge

Small Dean Viaduct

Small Dean Viaduct  
Launch Satellite  
Compound

Rocky Lane  
Underbridge

## Small Dean Viaduct Main Compound

## Wendover Green Tunnel South Portal

## Bacombe Lane Realignment

Wendover Green Tunnel  
(South Portal)  
Satellite Compound

Wendover

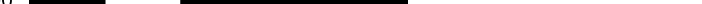
Wendover  
Green Tunnel

# Wendover Green Tunnel North Portal

Wendover Green Tunnel  
(North) Satellite Compound

MARYLEBONE TO AYLESBURY LINE

METRES  
@ 1:10000



A horizontal scale bar with alternating black and white segments. The segments are labeled with their lengths in metres: 0, 100, 200, 500, and 1000. The bar is positioned below the map area.

P00.1	FIRST DRAWN	—				<p>HS2 accepts no responsibility for any circumstances which arise from the reproduction of this document after alteration, amendment or abbreviation or if it is issued in part or issued incompletely in any way.</p> <p>© Crown Copyright and database right 2015. All rights reserved. Ordnance Survey Licence number 100049190</p> <p>© Crown Copyright material is reproduced with the permission of Land Registry under delegated authority from the Controller of HMSO.</p> <p>This material was last updated on 2015 and may not be copied, distributed, sold or published without the formal permission of Land Registry. Only an official copy of a title plan or register obtained from the Land Registry may be used for legal or other official purposes.</p>
5582	Description	Drawn	Checked	Con App	HS2 App	Scale with caution as distortion can occur.

- UT - Main utility works

 Wendover Parish Council Boundary



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Registered office:  
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London E14 5AB

Creator/Originator	
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Atkins

Zone	Country South
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Project/Contract	Country South Design
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Design Stage	DESIGN-FOR-PETITION
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Discipline/Function	Environmental
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Drawing Title
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Drawn	Checked
TB	

Wendover Society

Date	Scale
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Petition AP5:1

20/01/2016	AS SHOWN
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	Construction Phase
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Drawing No.  
C222-ATK-EV-DPL-020-050916-PETA

Rev.	
P00.1	

—AP5/00001/0003

p15582



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

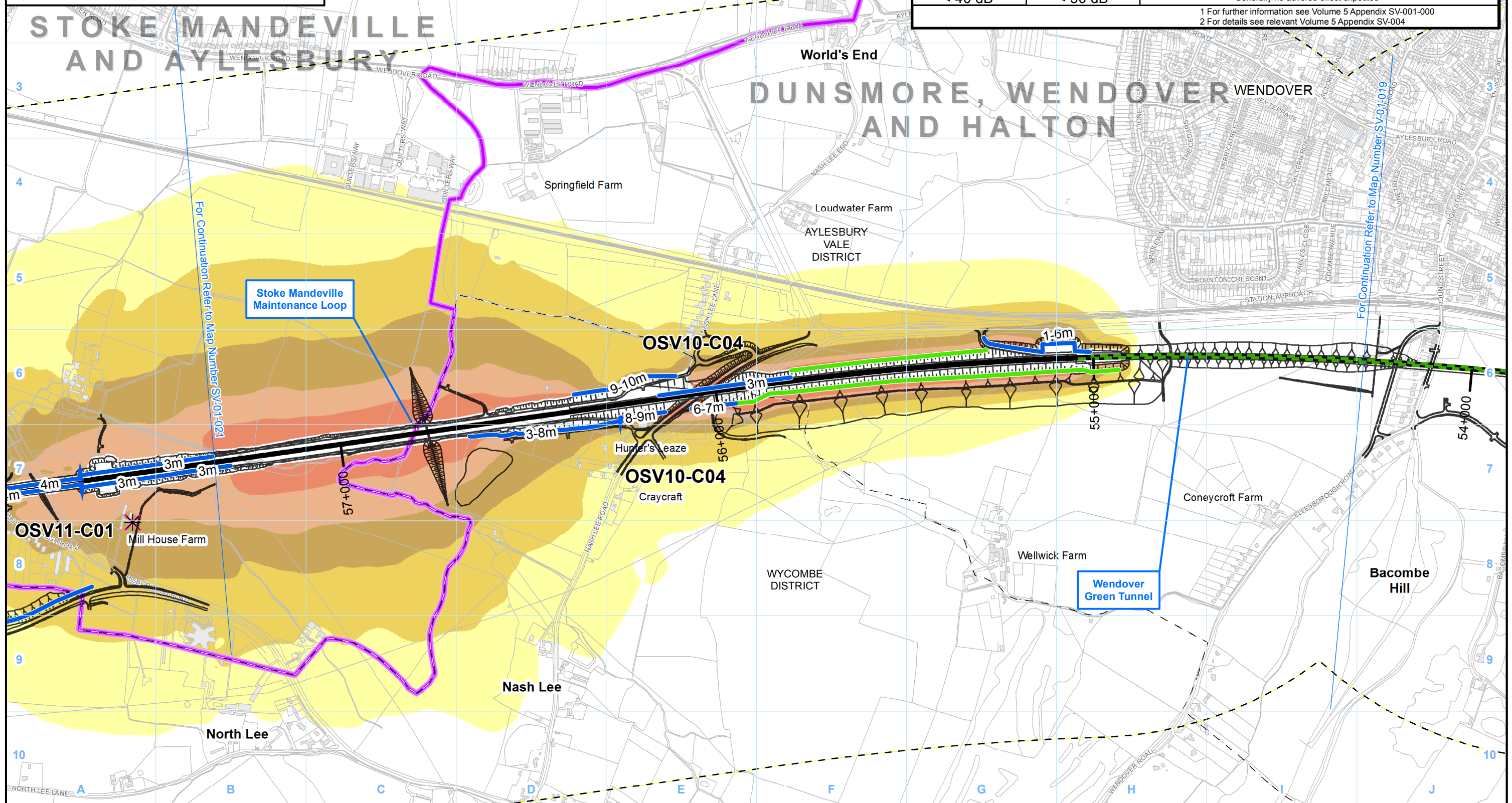
Receptor/significant effect removed/added (as a result of amendment\*: AP5-XXX-YYY).

SES/AP change ref.

Significant effect descriptor

Reduced effect Increased effect

HS2 (rail only) sound level L <sub>pAeq,T</sub>		Potential noise effect <sup>1,2</sup>	
Night-time L <sub>pAeq,T</sub> (T=23:00 to 07:00)	Daytime L <sub>pAeq,T</sub> (T=07:00 to 23:00)	Residential	Non-residential & quiet areas
> 60 dB	> 70 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# <sup>2</sup>
55 to 60 dB	65 to 70 dB		
50 to 55 dB	60 to 65 dB	Effect dependent on sound level change and significance criteria. Likely significant effects on groups of dwellings and associated facilities indicated by OSV#-C# <sup>2</sup>	
45 to 50 dB	55 to 60 dB		
40 to 45 dB	50 to 55 dB		
< 40 dB	< 50 dB	Generally no adverse effect expected <sup>1</sup>	
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)<sup>1</sup>
- Potential additional noise insulation (triggered by WHO Night Noise Guidelines Interim Target)<sup>1</sup>
- Potential noise insulation (triggered by Noise Insulation Regulations 1996)<sup>1</sup>

\* Labelled with total barrier height above rail level

Map Number SV-01-020

Map Name Operational Sound Contour Maps and Likely Significant Effects SES4 and AP5 ES

Community Forum Area CFA10: Dunsmore, Wendover & Halton



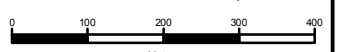
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Scale at A3: 1:10,000



AP5/00001/0011



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

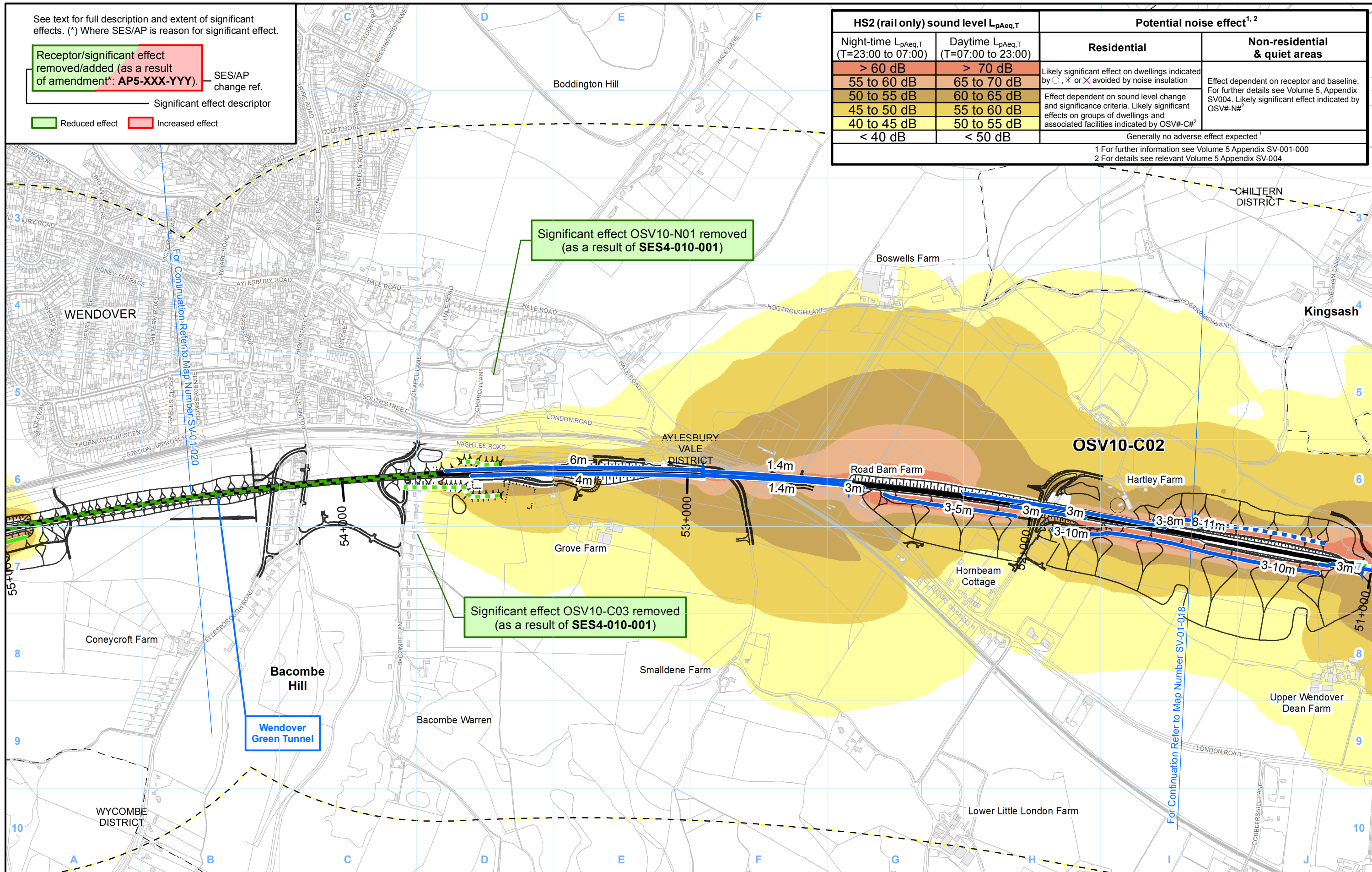
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\* Labelled with total barrier height above rail level

Map Number SV-01-019

Map Name Operational Sound Contour Maps and Likely Significant Effects SES4 and AP5 ES

Community Forum Area CFA10: Dunsmore, Wendover & Halton

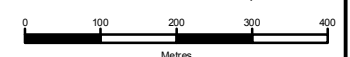
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Scale at A3: 1:10,000



AP5/00001/0013



Cost of Wendover Bored and Mined tunnel proposals vs hybrid Bill Proposed Scheme @ 08 October 2015

	Option A Proposed Scheme	Wendover Bored Tunnel	Wendover Mined Tunnel
	£m	£m	£m
<b>TUNNELS</b>	<b>66.71</b>	<b>334.41</b>	<b>379.62</b>
Bored/Mined Tunnels	0.00	281.64	331.59
Green Tunnels	66.71	0.00	0.00
Portals	0.00	38.12	28.37
Shafts	0.00	14.64	19.66
Additional disposal costs			
<b>CUTTINGS</b>	<b>30.59</b>	<b>41.71</b>	<b>46.31</b>
<b>EMBANKMENTS</b>	<b>21.43</b>	<b>6.87</b>	<b>2.29</b>
<b>EARTHWORKS</b>	<b>9.41</b>	<b>2.44</b>	<b>2.44</b>
Landfill & Contaminated Remediation Measures	0.00	0.00	0.00
Landscaping	9.41	2.44	2.44
<b>ENVIRONMENTAL MITIGATION WORKS</b>	<b>8.96</b>	<b>5.16</b>	<b>5.16</b>
Planting	4.51	3.05	3.05
School protection works	0.00	0.00	0.00
Enhanced Planting	0.00	0.00	0.00
Noise Barriers	4.45	2.11	2.11
<b>RETAINING WALLS</b>	<b>-1.46</b>	<b>0.00</b>	<b>0.00</b>
<b>BRIDGES</b>	<b>15.96</b>	<b>15.71</b>	<b>14.89</b>
Overbridge	13.37	15.71	14.89
Underbridge	2.59	0.00	0.00
<b>VIADUCTS</b>	<b>41.32</b>	<b>35.87</b>	<b>0.00</b>
<b>HIGHWAYS</b>	<b>13.77</b>	<b>13.07</b>	<b>12.46</b>
<b>OTHER</b>	<b>21.12</b>	<b>20.89</b>	<b>20.51</b>
Culverts	0.45	0.33	0.33
Utilities Diversions	20.66	20.55	20.18
Utilities Connections	0.00	0.00	0.00
<b>DEPOT AND SIDINGS</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Sidings	0.00	0.00	0.00
Other Facilities	0.00	0.00	0.00
IMD Depot	0.00	0.00	0.00
Temporary Railhead	0.00	0.00	0.00
<b>EXTENDED PRELIMINARIES</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Total difference</b>	<b>230.72</b>	<b>476.13</b>	<b>483.70</b>
Add Rail systems		13.80	13.80
<b>Sub-total construction</b>		<b>259.22</b>	<b>266.79</b>
Add Indirect costs		47.10	48.48
<b>Total construction</b>		<b>306.32</b>	<b>315.26</b>
<b>Deduct:</b>			
ECP/VE		-29.40	-30.26
Land & Property		-9.47	-9.47
<b>Net total</b>		<b>267.45</b>	<b>275.53</b>

Notes:

- 1 The mined tunnel assumes one large excavated bore with provision of a central dividing wall.
- 2 Assumed vertical profile required for a mined tunnel would remove the need for the Wendover Dean viaduct
- 3 Assumed vertical profile required for a bored tunnel assumes a twin structure required for the Wendover Dean viaduct

# Predicted Operational Noise Outcomes for Wendover

	Bill scheme	Draft enhanced scheme	AP5 scheme	Draft surface enclosure	Draft mined tunnel
Significant Effect at St. Mary's Church	Yes	No	No	No	No
Significant Community Effect at Bacombe Lane	Yes	No	No	No	No
Number of Dwellings at or above LAeq LOAEL	18	14	0	0	0
Number of Dwellings at or above LAMax LOAEL – HS2 train	392	103	122	112	91
Cost estimate relative to Bill scheme	0	+£2m	+£10m	+£40m	+£275m