

THE LANDSCAPE CASE FOR A LONG TUNNEL THROUGH THE CHILTERNS AREA OF OUTSTANDING NATURAL BEAUTY

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WHAT IS THE PURPOSE OF MY EVIDENCE TO THE SELECT COMMITTEE?



To show how the **surface route** proposed by HS2
from Hyde Heath to Wendover will result in
irreparable harm to the special landscape and
visual qualities of the **AONB**



How can this be avoided?

What do we suggest?

We need an Additional Provision for an edge-to-edge tunnel through the Chilterns AONB



THE LANDSCAPE CASE FOR THE CHILTERN LONG TUNNEL

The **whole of the Chiltern AONB** landscape is of the **highest value** for its outstanding natural beauty recognised by Parliament and European Union

Not just the eastern half



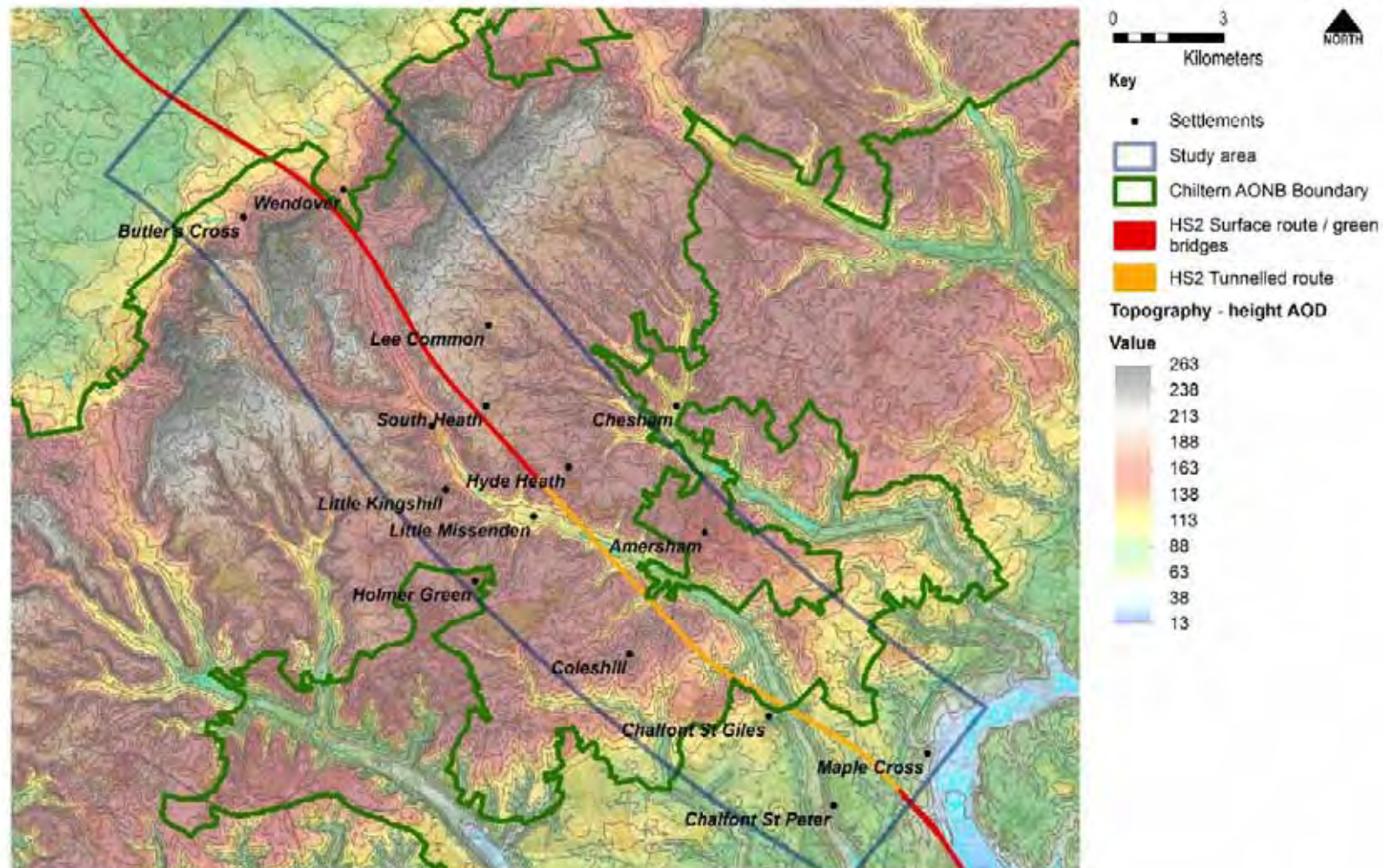
THE LANDSCAPE CASE FOR THE CHILTERN LONG TUNNEL

So why has HS2 and the government only put 46% of the route through the AONB in tunnel?

I cannot answer this question. HS2 Ltd have never answered it.



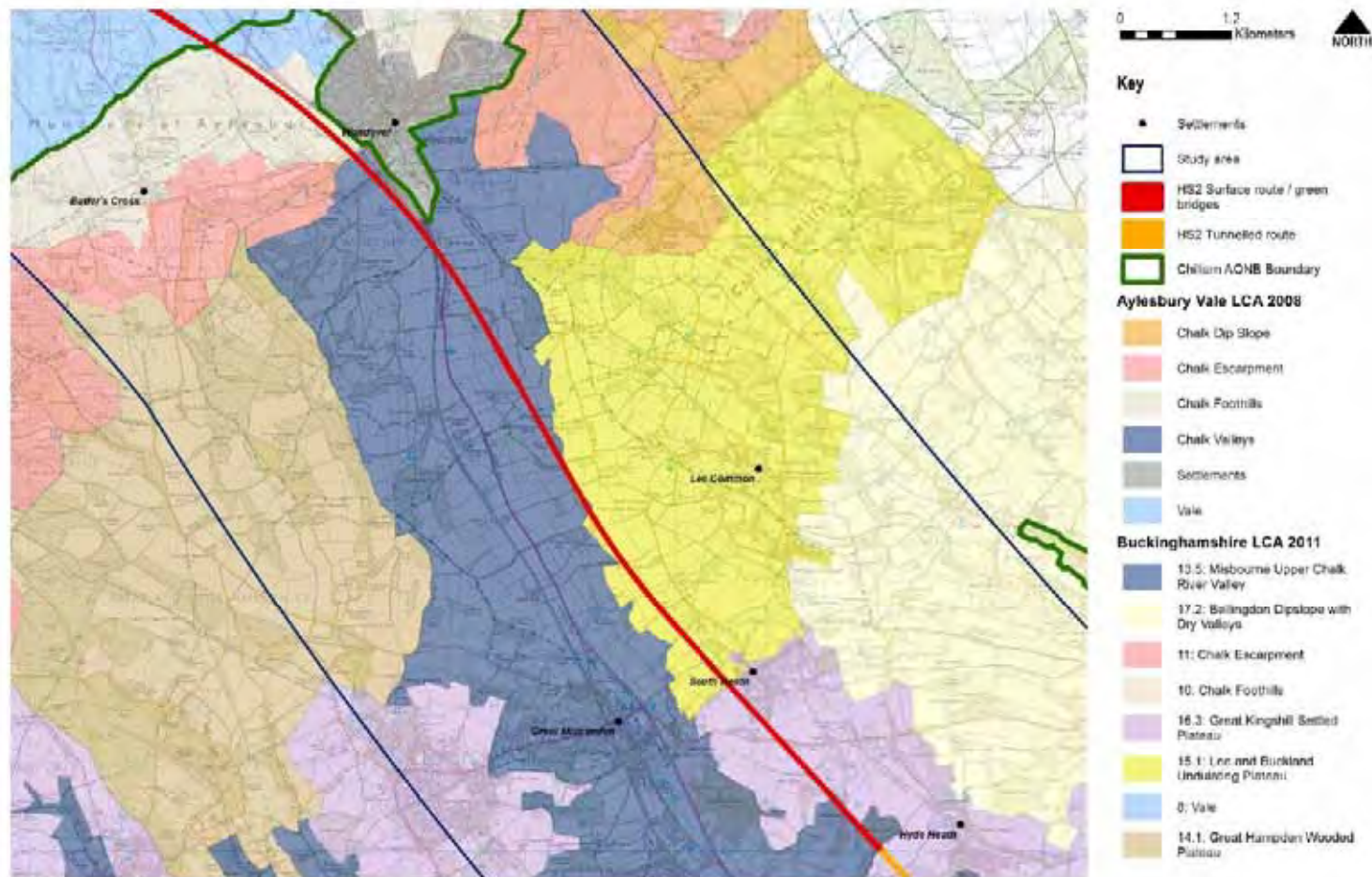
This plan shows how the surface route and the tunnel section both cross through the Chiltern Hills topography in the same way. **Why put HS2 in a tunnel and then come out of it at the top of the hill?**



What are the **special qualities** of the **Chiltern Hills** that will be adversely affected by the surface route?



The special qualities are set out in the Chilterns AONB Management Plan 2014 – 2019, the Buckinghamshire Landscape Character Assessment 2011 and Aylesbury Vale Landscape Character Assessment 2008 . This plan shows the landscape character areas crossed by the surface route



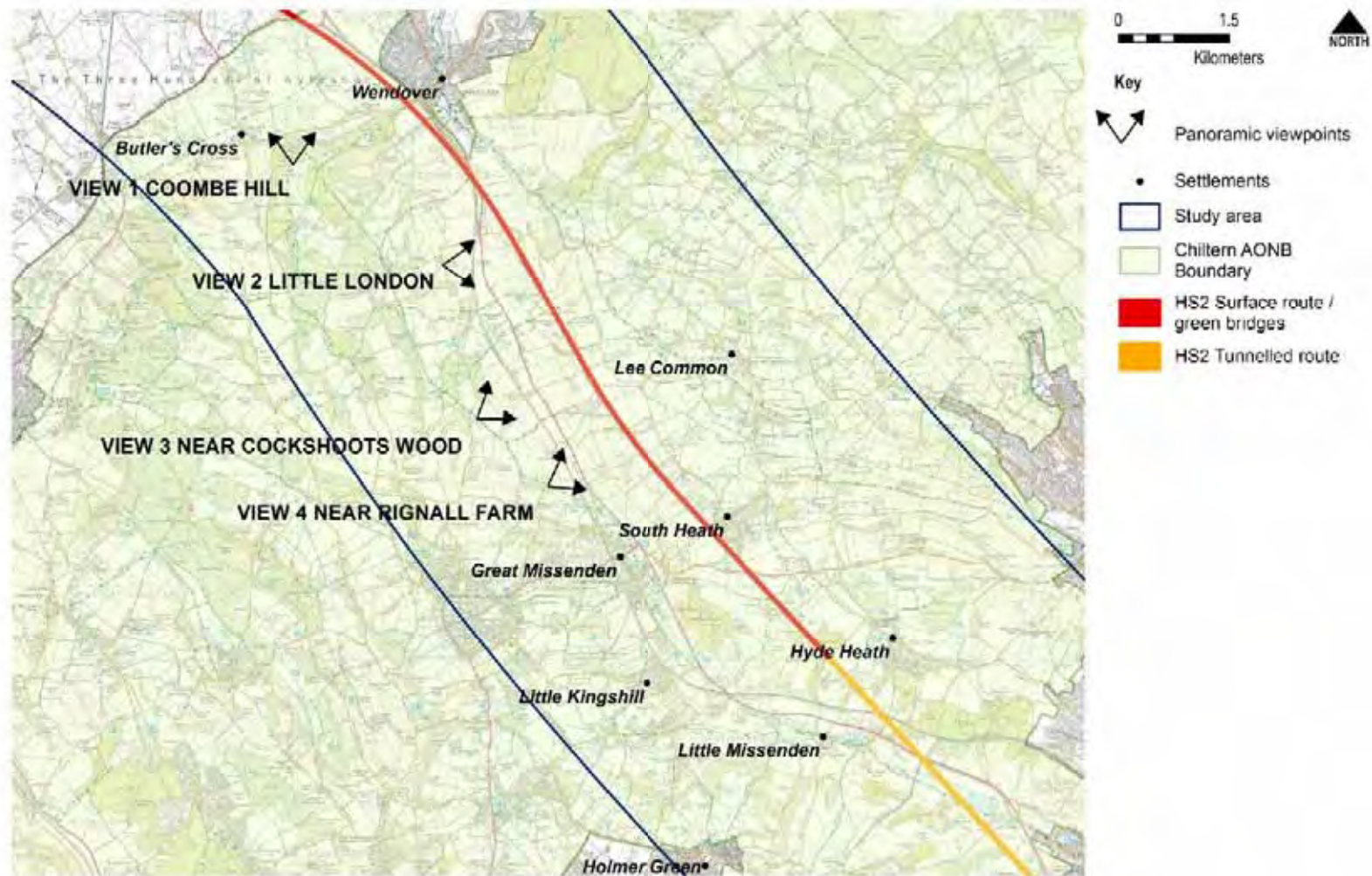
The landscape through the Chiltern Hills is of
outstanding scenic beauty



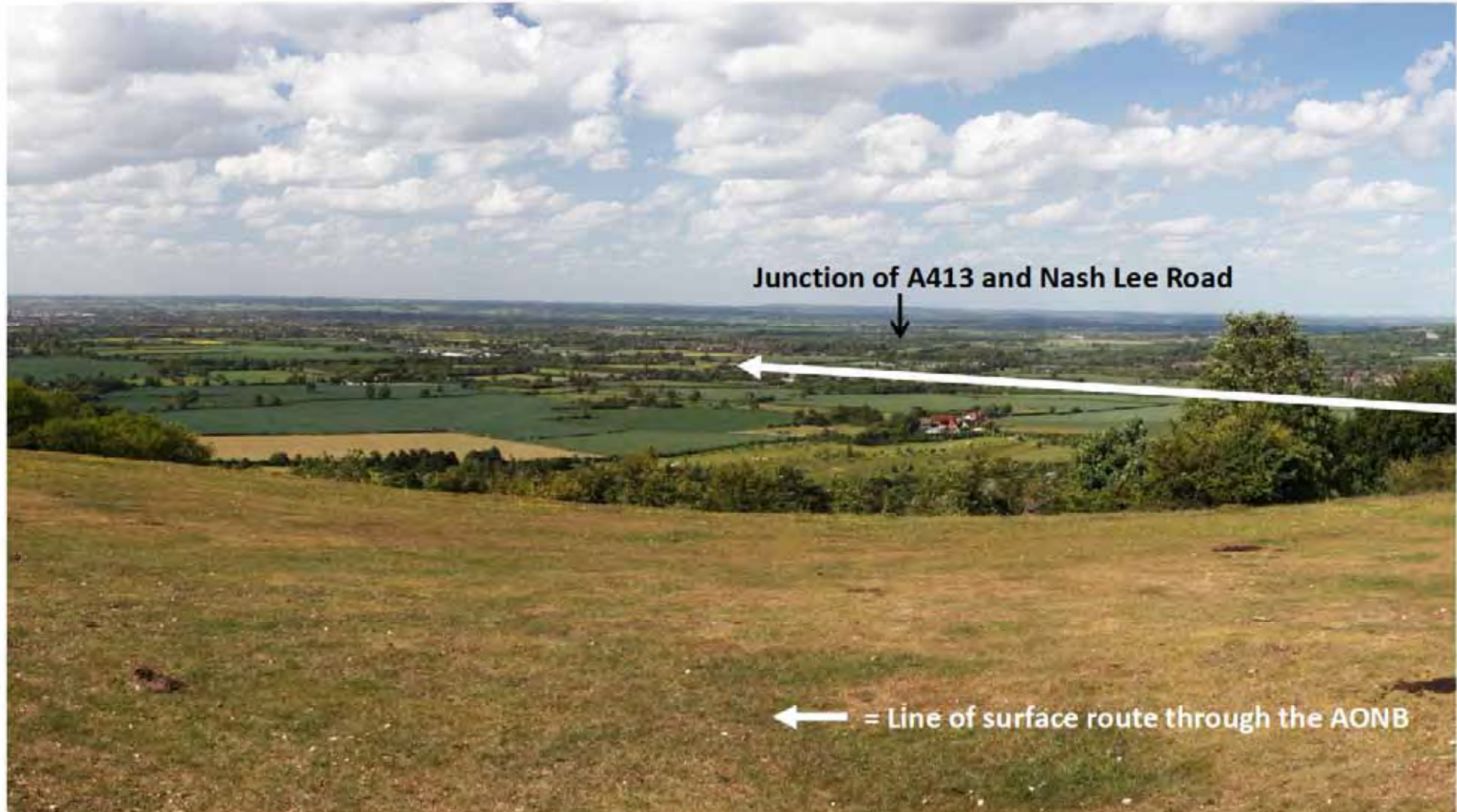
There are very many examples I could show but the following are a sample of the **panoramic views** of the surface route from the opposite side of the valley to the surface route



The locations of some of the affected panoramic views are shown on this plan



View 1: Panoramic view from Coombe Hill/The Ridgeway over Wendover vale to the surface route through the AONB



View 2: Panoramic view from footpath at Little London over the Chiltern Hills to the surface route through the AONB



View 3: Panoramic view from South Bucks Way near Cockshoots Wood to the surface route



View 4: Panoramic view from South Bucks Way from near Rignall Farm to the surface route

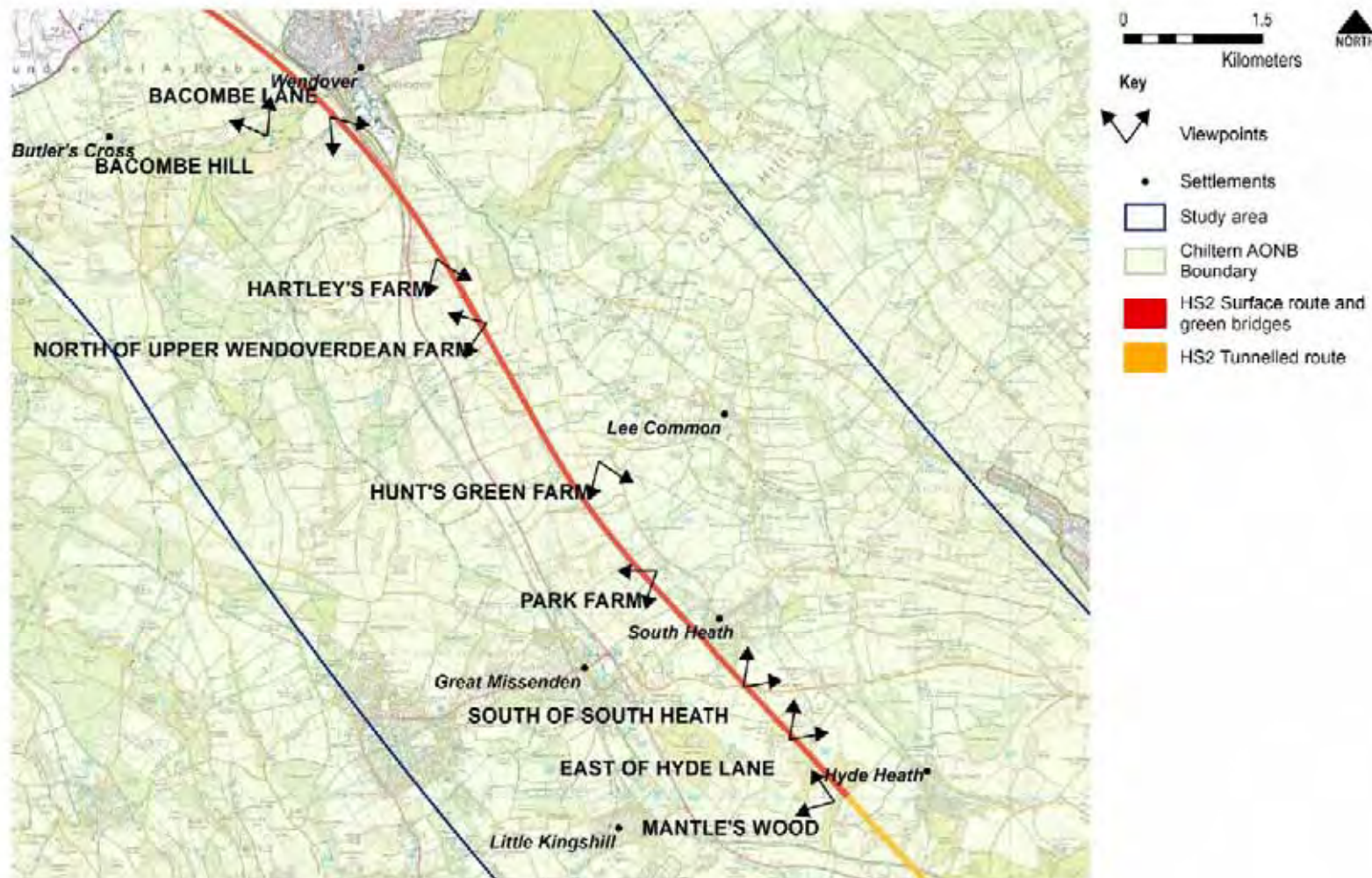


THE LANDSCAPE CASE FOR THE CHILTERN LONG TUNNEL

Here are a selection of photographs of the
some of the **landscapes** along the surface route
that will be **lost or irrevocably damaged**



The location of views of some of the affected landscapes is shown on this plan



This is Mantle's Wood and its adjacent open dry valley – site of the tunnel portal



**This landscape is immediately east of Hyde Lane
– site of a high footpath overbridge and deep cutting**



**This shows the dry valley further east of Hyde Lane
– the site of deep cutting and large raised landform (soil dumping)**



**This is the open plateau east of South Heath
– site of major new highway infrastructure for King's Lane**



This is looking from Leather Lane to Grim's Ditch Scheduled Monument – site of deep cuttings and overbridges and the loss of part of Grim's Ditch



**This is looking down to Durham Farm
– site of the viaduct**



**We are looking here from Rocky Lane to south of Hartley Farm
– site of raised landform, soil ‘dumping’ and auto-transformer station**



This a view to Bacombe Lane – site of one of the Wendover green tunnel portals and road diversion



Finally this is from Wendover vale from Bacombe Hill (Chiltern escarpment) – site of the Wendover green tunnel



THE LANDSCAPE CASE FOR THE CHILTERN LONG TUNNEL

What are the **special qualities** which led to the Chiltern Hills being designated as an AONB? They are (in no particular order):

- The natural chalkland **topography**
- The distinctive historic **landscape pattern** and the integrity of the landscape pattern of woodlands, hedgerows, agricultural fields
- The undisturbed **chalkland geology**
- The distinctive, Ancient Semi-natural Woodlands, **hanging and plateau woodlands**
- The distinctive **sunken lanes**
- Several **conservation assets** and their inter-relationship with the natural landscape
- **Recreation network**
- **Tranquillity** of the valley slopes and plateau
- **Beautiful views**

These will be directly, indirectly and permanently adversely affected by the surface route



THE LANDSCAPE CASE FOR THE CHILTERN LONG TUNNEL

The natural chalkland **topography** of Chilterns Hills is distinguished by the relationship between the main Misbourne valley, its smooth undulating valley sides and dry valleys, its plateau tops and the escarpment



How will HS2 impact on the **natural topography**?

The surface route will create an **unnatural engineered landform** completely at odds with the natural **chalkland topography** to the detriment of the natural beauty of the AONB

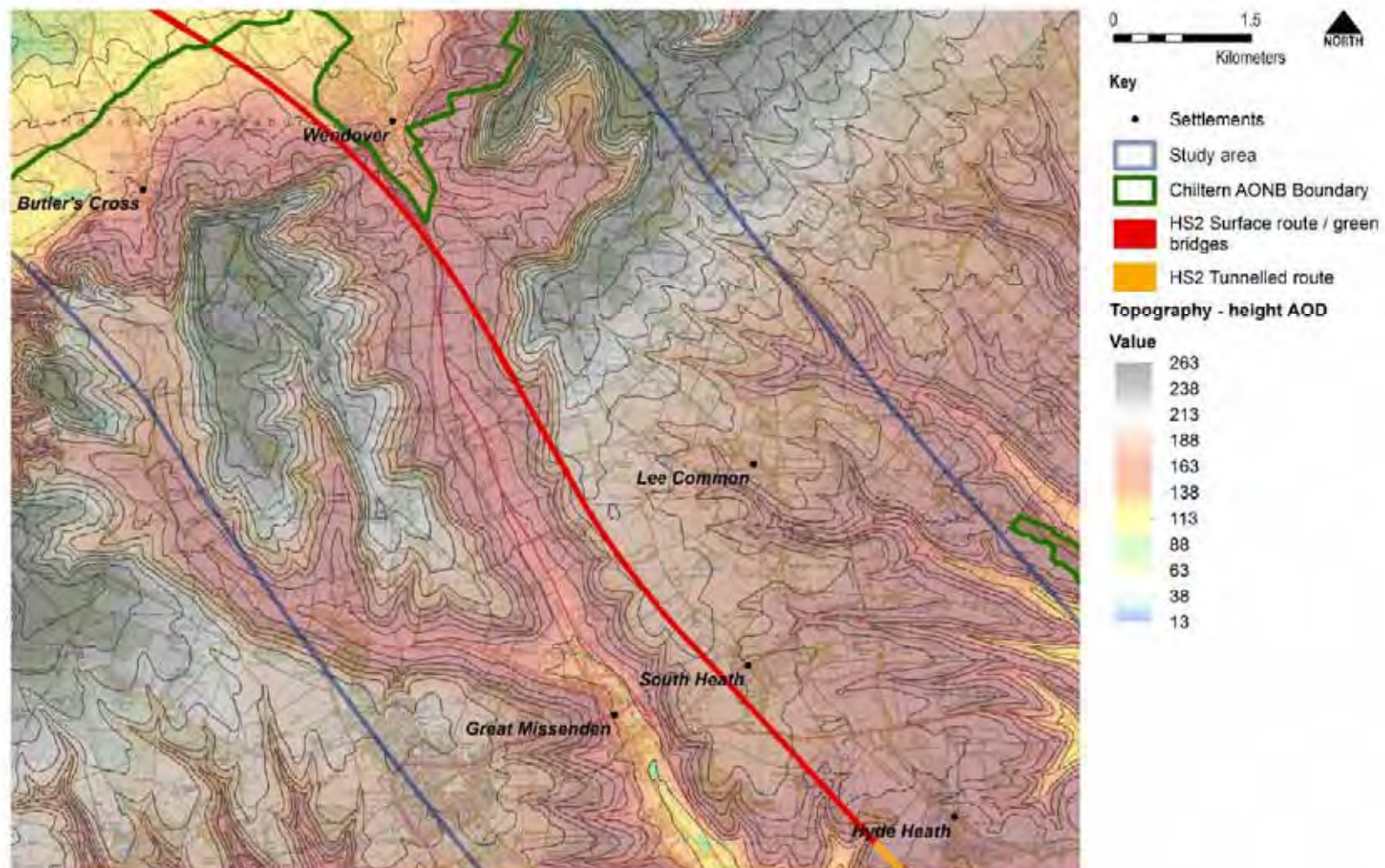


Why does this affect the **natural topography** ?
Because the HS2 surface route is **not** in a valley and will
involve:

- Substantial infrastructure to cross, enter and exit the undulating landform
- Massive cuttings, embankments and landraising works to navigate the Chiltern Hills
- Extensive and high screen mounding and false cuttings to attenuate high visual and noise impacts



This slide of the **natural topography** illustrates how the surface route cuts through the plateau, sloping sides and undulating valleys of the Chiltern Hills

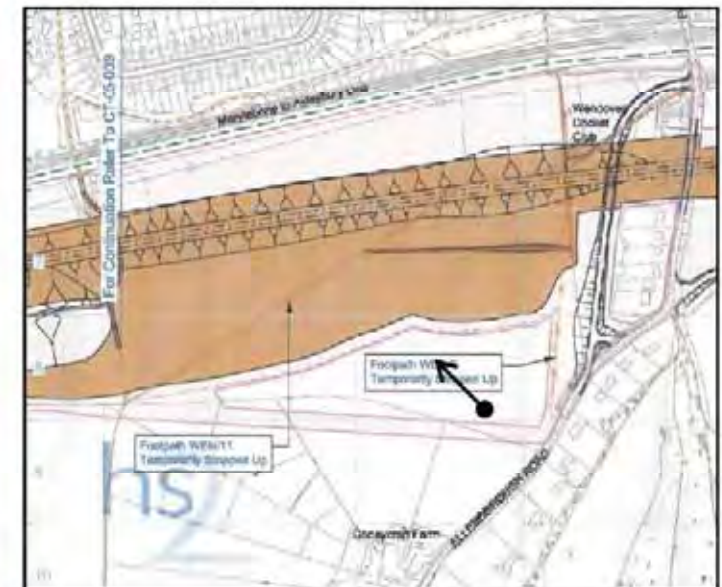


This is one example of the impact on the **natural topography**

Wendover Vale: A view of the long linear mound created over the track within this completely flat landscape



Plan of surface route design from HS2 Map books



This is another example showing where a cutting destroys the **natural topography**

Slopes at Jones' Hill Wood : A deep cutting and a raised embankment for the Wendover Dean viaduct are created into this gentle slope



Plan of surface route design



THE LANDSCAPE CASE FOR THE CHILTERN LONG TUNNEL

The Chiltern Hills are noted for their **distinctive and historic landscape pattern** of:

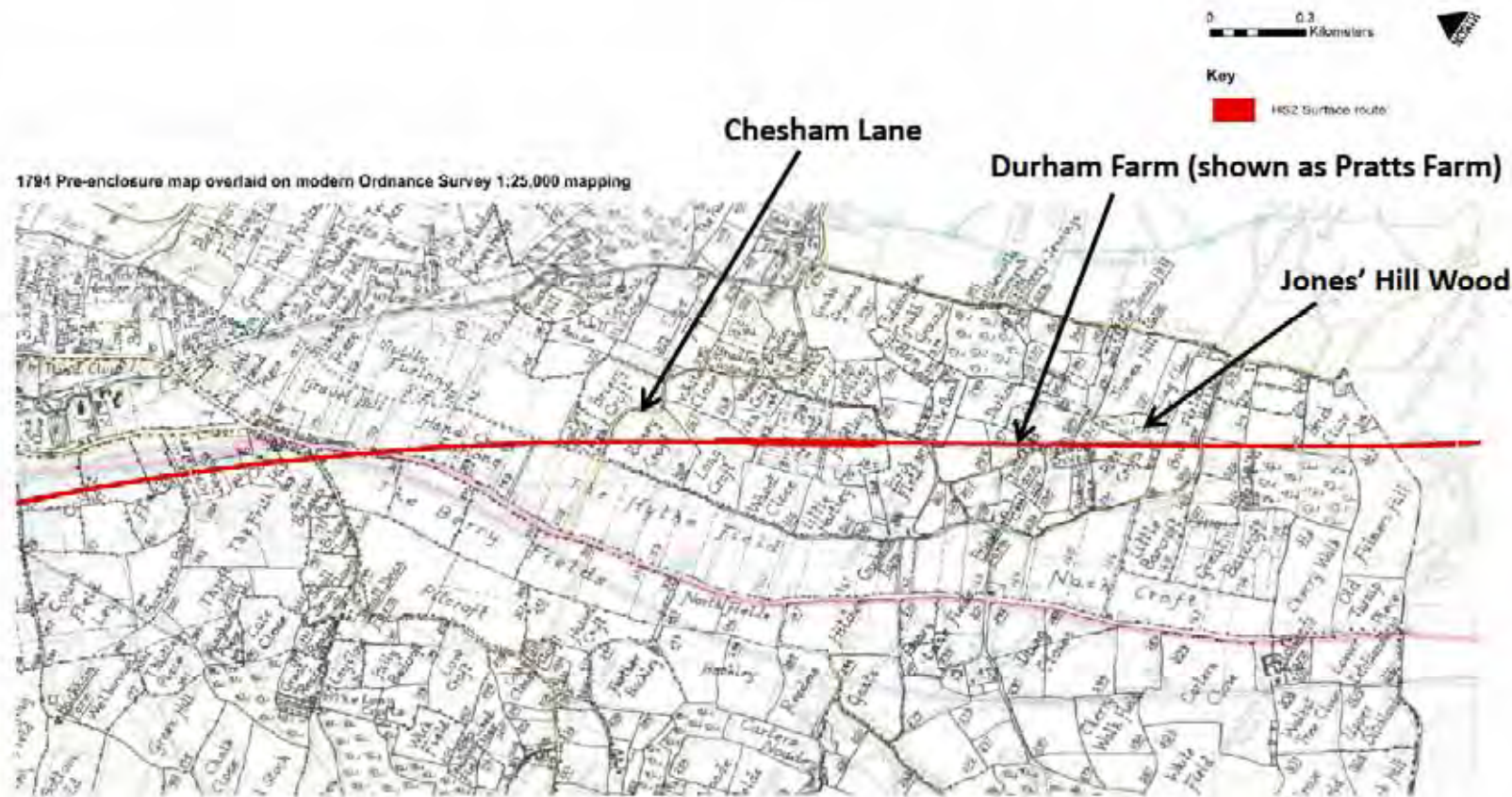
- Field sizes and shapes
- Field boundaries
- Woodland patterns
- Settlement patterns
- Ancient routeways



The surface route will sever the surviving
landscape pattern



This is an example of the surviving 18C field **landscape pattern** that would be severed



This is a photograph of a view of the **landscape pattern** from footpath GM1/2 to a typical valuable hedgerow with hedgerow trees which would be lost or severed by the surface works



This is a photograph of a view of the **landscape pattern** up the ancient sunken lane at Bowood Lane which would be remodelled into an overbridge



This table shows the scale of losses of features of this **landscape pattern** along the surface route

	Hedgerows	Open agricultural land	Woodland	Ancient Semi-natural Woodland	Individual mature and veteran trees
Removed for construction	490 km	400 ha	15 ha	10.2	Over 200
Reinstated or replaced after construction	Land within temporary construction area	220 ha	50ha	0	0
	Total unknown				
Balance permanently lost	- Total unknown	- 200 ha	+ 35ha	- 10.2	- 200 or more

[Sources: ES Vol 3 Route-wide effects: The Chilterns AONB and Draft Chilterns Conservation Board PRD April 2015]



The impact on the **landscape pattern** along the surface route is particularly high because:

- So much land is needed because of the scale of the works needed within the hilly landform
- The Chilterns Hills are very well vegetated with ancient landscape features
- Ancient Semi-natural Woodland is 400 years old and irreplaceable
- Native beech, oak and ash trees take upwards of years to reach maturity



The impact on the **landscape pattern** along the surface route is particularly high also because:

- Veteran trees are unique and irreplaceable
- New hedgerows take considerable time to acquire the maturity, diversity and character of well established hedges
- Although an additional 35ha of new woodland is under offer, this will **not** to conserve and enhance the special characteristics of the AONB



THE LANDSCAPE CASE FOR THE CHILTERN LONG TUNNEL

The Chiltern Hills are a key part of a rare global **geological resource:**

‘On a global scale chalk is a rare form of geology, laid down during the Cretaceous Era (65 - 100 million years ago), and is most commonly found in the south and east of England and northwest France, but almost nowhere else’.

[Source: Chilterns Management Plan 2014 – 2019]



How will the surface route harm the perception and enjoyment of the **chalkland geology**?

The surface route will create an **engineered scar** exposing the underlying **chalkland geology** to the detriment of the natural beauty of the AONB:

- The underlying chalkland geology is not naturally exposed nor by quarrying
- Exposed chalkland is highly visible and slow to weather or vegetate



This is an example of an exposed **chalkland geology** cutting through the Chiltern Hills

This photograph of the M40 taken in 2002 shows how raw and exposed the chalk cuttings are even after 28 years and how slowly they 'green over'



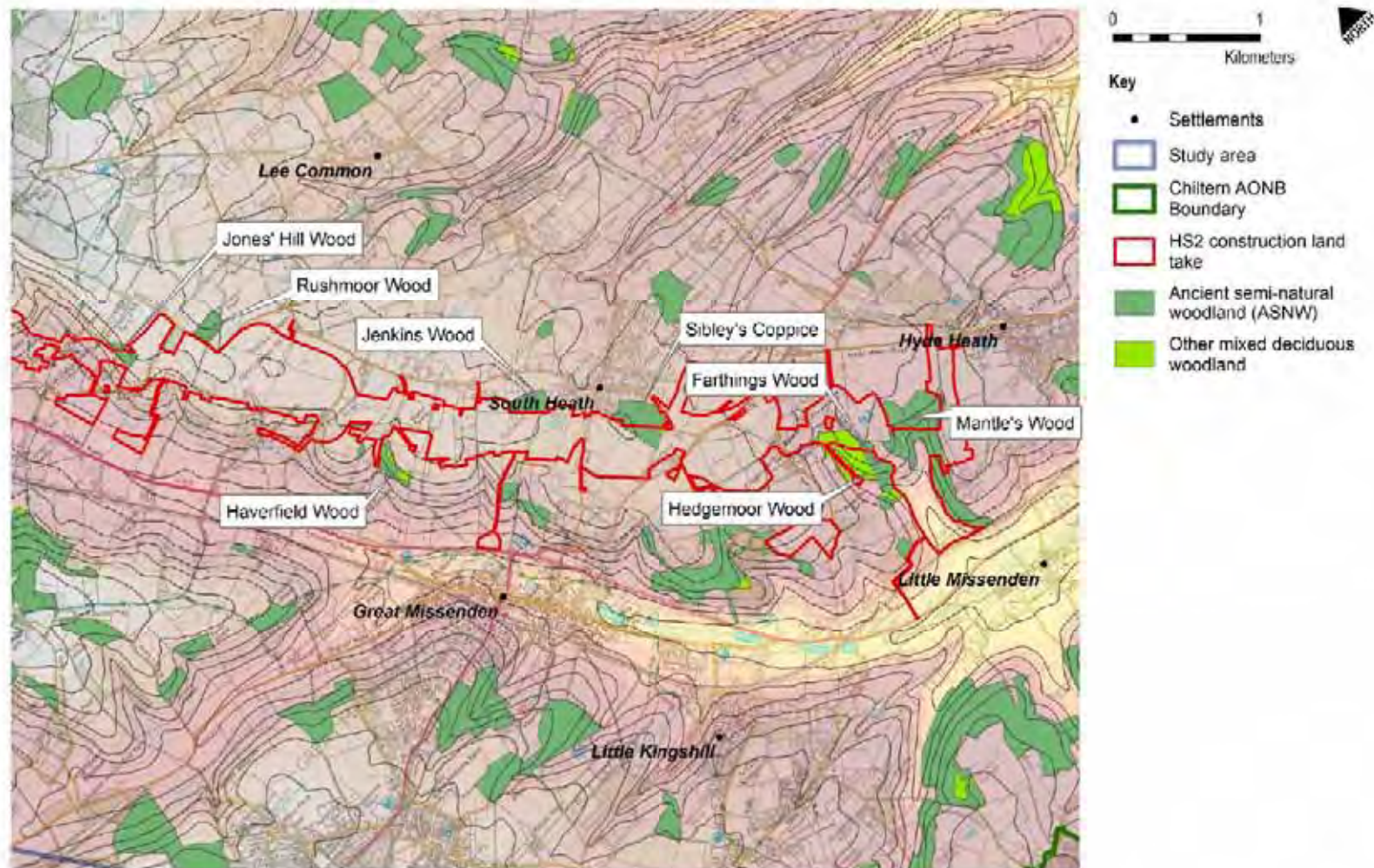
THE LANDSCAPE CASE FOR THE CHILTERN LONG TUNNEL

The Chiltern Hills are celebrated for the **extensive hanging and plateau woodlands** of important historic, landscape and ecological value, including:

- **Woodlands** and others are found situated just above and below the break of slope above the open dry valleys and middle and lower valley fields and are therefore **very prominent**
- A series of **Ancient Semi-natural Woodlands**



This plan shows the important but fragile hanging and plateau **ancient semi-natural woodlands (ASNW)** and other **woodlands** which will be **lost or severed** by the surface route



The surface route will do **irreparable harm** to the **historic woodland** which defines the character of the Chiltern Hills as a result of:

- A direct and indirect impact on **seven** prominent woodlands
- Removal of **18 hectares** of woodland (10.2ha. of Ancient Semi-natural Woodland)
- **Sequential damage** along the whole surface route
- **Exposure of woodland edges** which render them vulnerable to further losses through wind blow



These are some examples of valuable woodlands that would be lost or badly severed

MANTLE'S WOOD



JONES' HILL WOOD



SIBLEY'S COPPICE



FARTHINGS WOOD



THE LANDSCAPE CASE FOR THE CHILTERN LONG TUNNEL

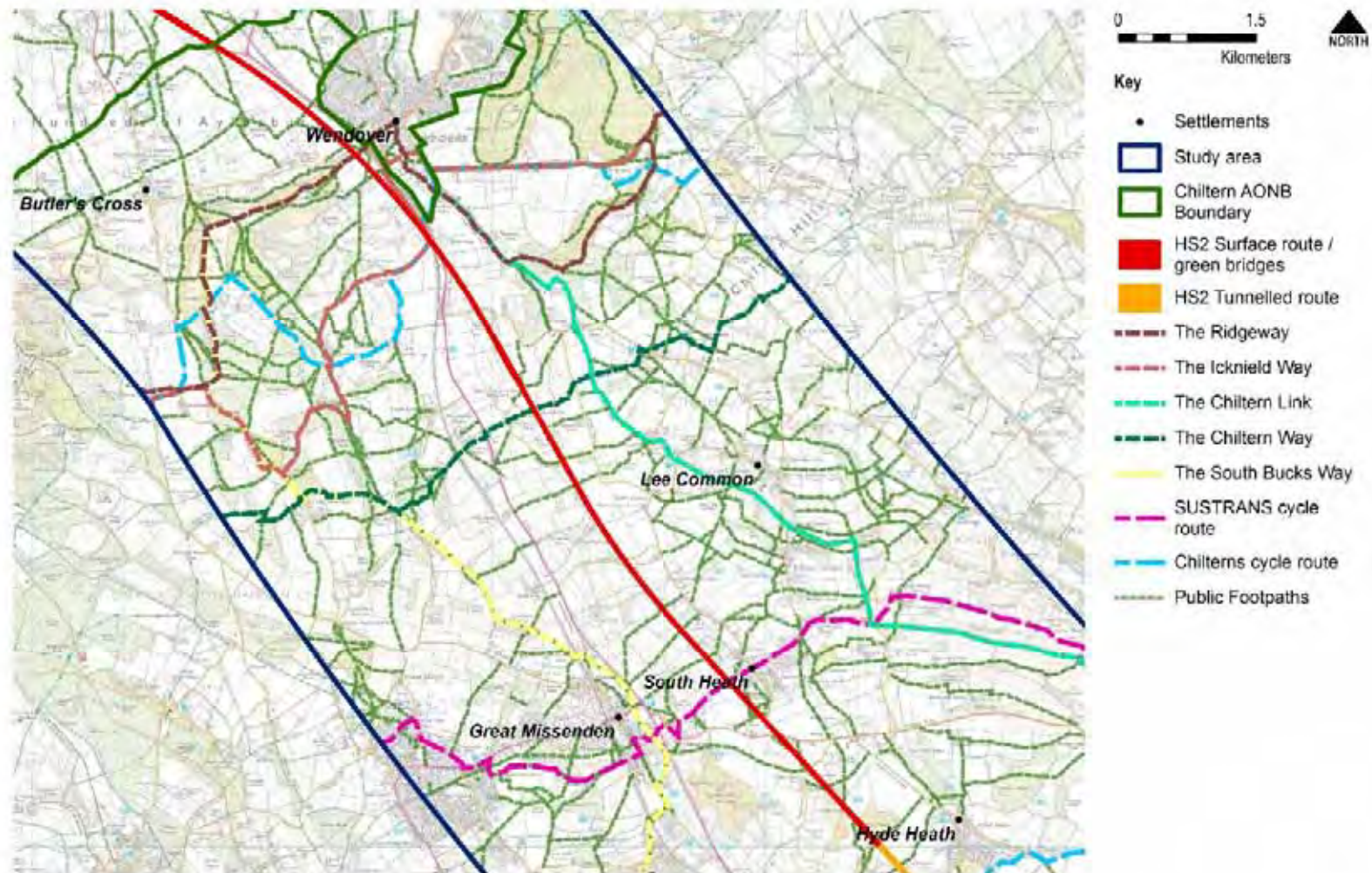
The **recreational value** of the landscape is **very high**

‘Visitors come to enjoy over 2000 km of public rights of way, the Ridgeway and the Thames Path National Trails, the Chiltern Way and the recently opened Chilterns Cycleway and many more special routes.’

(Chilterns AONB Management Plan 2014 – 2019)



Many of the routes below are of **national and regional importance** and **all** are of **high recreational value**



How will the **recreational routes** be affected by the surface route?

- There will be **extensive visual intrusion** along the whole network within the valley
- Many existing valued **views** from footpaths will be **lost**
- Several routes will be **severed** or diverted and will be **less enjoyable** as they go over the high speed line



THE LANDSCAPE CASE FOR THE CHILTERN LONG TUNNEL

The scenic beauty is enjoyed by a **high number of people (locals and visitors) on the recreational routes** across the Chiltern Hills

Views are wonderfully varied and sequential :

- Panoramas
- Long vistas
- Intimate enclosed spaces



These are some photographs selected from the many viewpoints to illustrate the effect on **recreational routes**

One example of the views from the Icknield Way trail



Another example of one of the views from the Chiltern Way trail



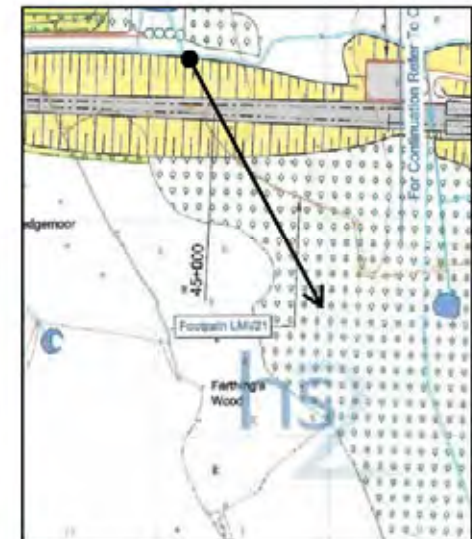
Location of the Wendover Dean viaduct

This is an example of a vista from a **recreational route** that will be lost forever at Mantle's Wood

MANTLE'S WOOD DRY VALLEY: Footpath stopped up and valley planted with trees



**Extract from HS2
map book**



This is example of the effect on enjoyment of the enclosed dry valley landscape west of Hyde Lane from the **footpath**

WEST OF HYDE FARM: This intimate landscape is completely destroyed by the surface route design



**Extract from HS2
map book**



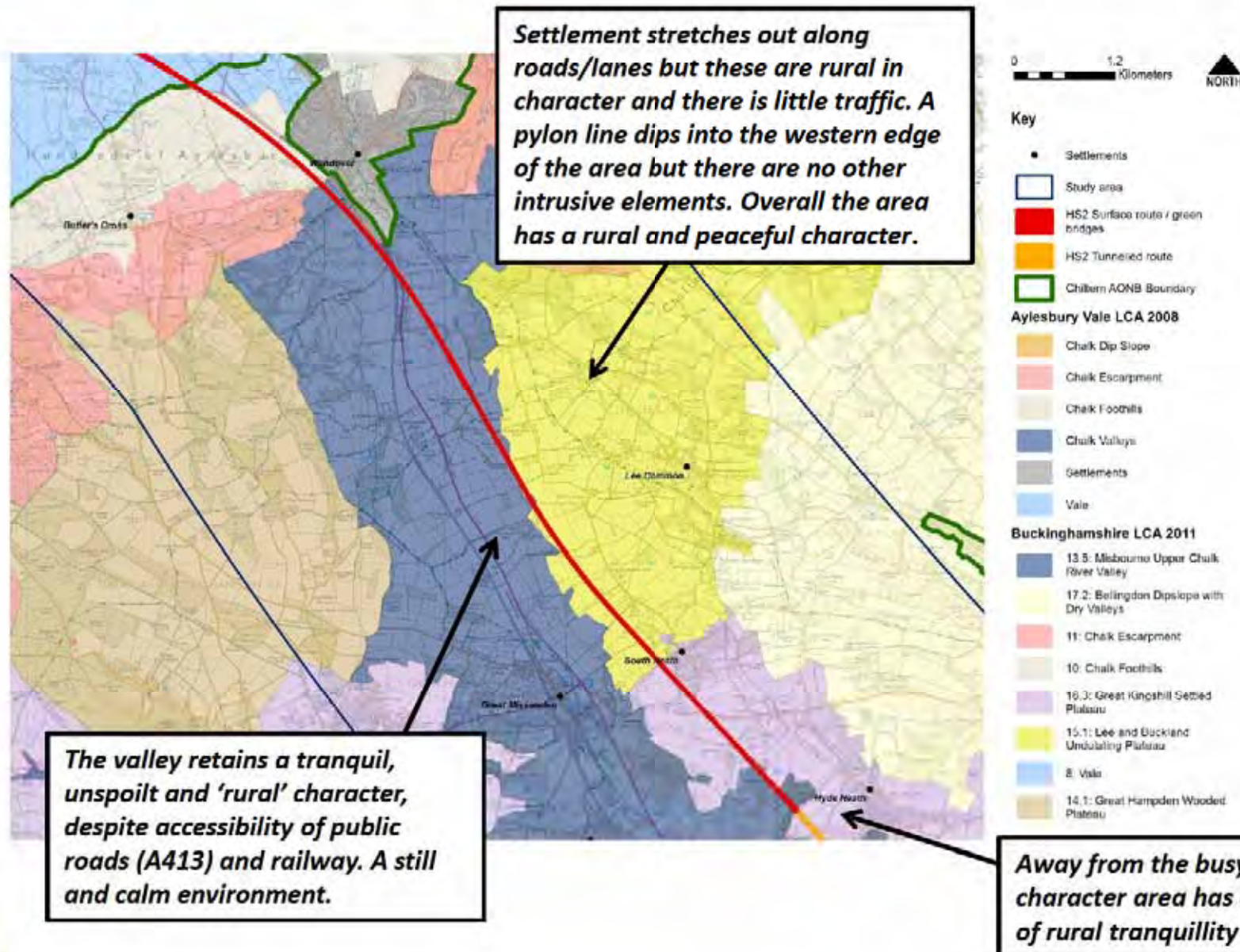
The Chilterns AONB is highly valued for its tranquillity

‘The **tranquillity** of the Chilterns AONB is one of the **special qualities** of the area that attracts many of the tens of thousands of visitors that come each year.’

(Chilterns AONB Management Plan 2014 – 2019)

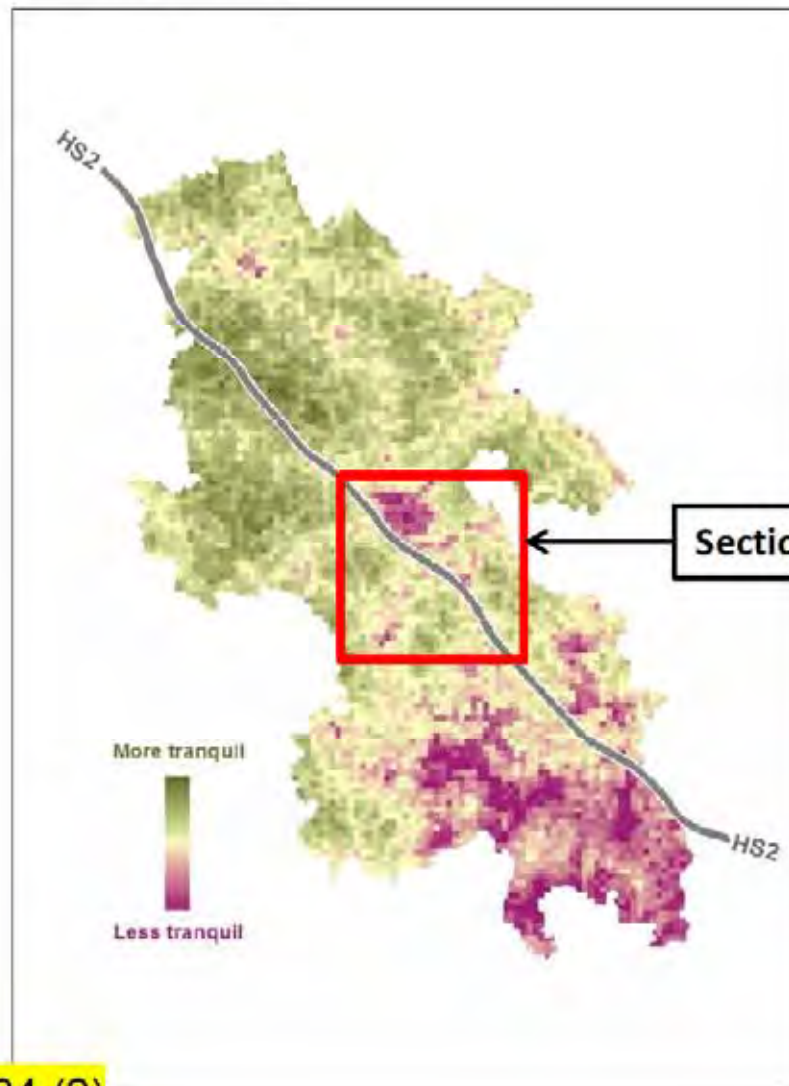


This is supported in extracts from the Buckinghamshire Landscape Character Assessment 2011

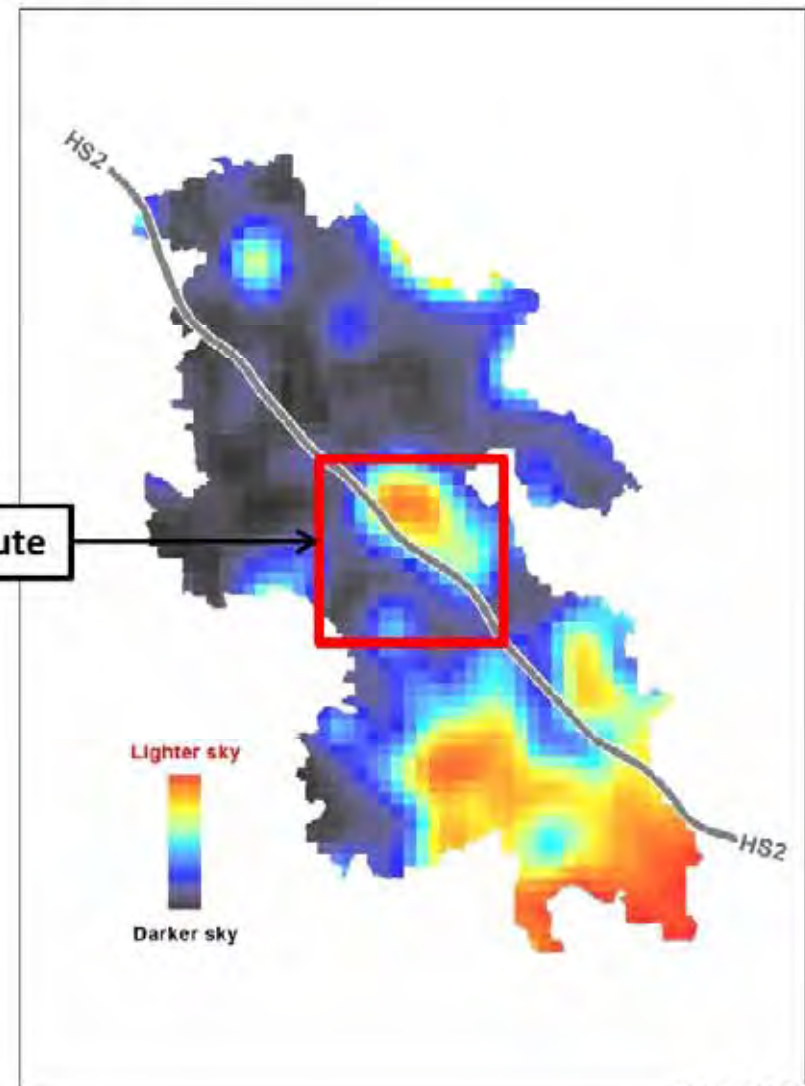


The plans below from CPRE show the greater levels of tranquillity and darker skies along the HS2 surface route compared to the tunnel section

Tranquillity



Dark skies



Section of surface route

Tranquillity is important in the AONB:

1. HS2 recognise the importance of tranquillity as a special quality of the valley sides and plateau of the Chiltern Hills
2. National policy seeks to 'identify and protect areas of tranquillity which ...are prized for their recreational and amenity value' (NPPF 123)



How will the surface route affect the tranquillity of the AONB?

- The construction and operational infrastructure will be highly intrusive visually
- The route cuts through a typically tranquil section of the Chiltern Hills away from the valley floor
- Only a short section at Wendover is already affected by major infrastructure where any surviving sense of tranquillity, as at Small Dean Lane or Bacombe Lane, will be lost



**MY NEXT SLIDES LOOK AT THE PHYSICAL
ELEMENTS OF THE PROPOSED SURFACE ROUTE
AND THEIR EFFECTS ON THE AONB**



What are the most harmful aspects of the surface route?

1. A very extensive landtake over a valued landscape
2. Tunnel portals
3. Viaducts
4. Bridges
5. Highways
6. Cuttings and green bridges
7. Embankments and false cuttings
8. Track infrastructure



Even the proposed mitigation measures are harmful because:

- in trying to screen the surface route, extensive land raising and unsympathetic linear planting is needed
- in trying to attenuate the noise, extensive bunding and obtrusive noise barriers are needed
- in trying to accommodate the run off, extensive ill placed balancing ponds are needed



A consequence of trying to put a surface route through a complicated landscape is that a very large area of land is needed for the scheme

This can be shown numerically:

1. HS2 land take for the surface route – **400 + ha.**
2. Compare with the **Chiltern tunnel** land take which is approx. **50 ha.**
3. The surface route affects **8 times** more land in the AONB



This can also be shown graphically in the following slides which show aerial photographs of the landscape along the surface route marked up with the **extensive surface route landtake**



Slide 1: The A413/Nash Lee Road junction on the western AONB boundary showing surface route works



Slide 2: Area south of Wendover showing surface route works



Slide 3: Either side of Rocky Lane showing surface route works



Slide 4: Plateau at Hunts Green Farm showing surface route works



Slide 5: South and east of South Heath showing surface route works



Slide 6: At Mantle's Wood showing surface route works



In order to show the effect of the Chiltern long tunnel we only need one slide. Compare with this single slide of the much reduced landtake for the Chiltern long tunnel



The following slides show the effect of tunnel portals along the surface route



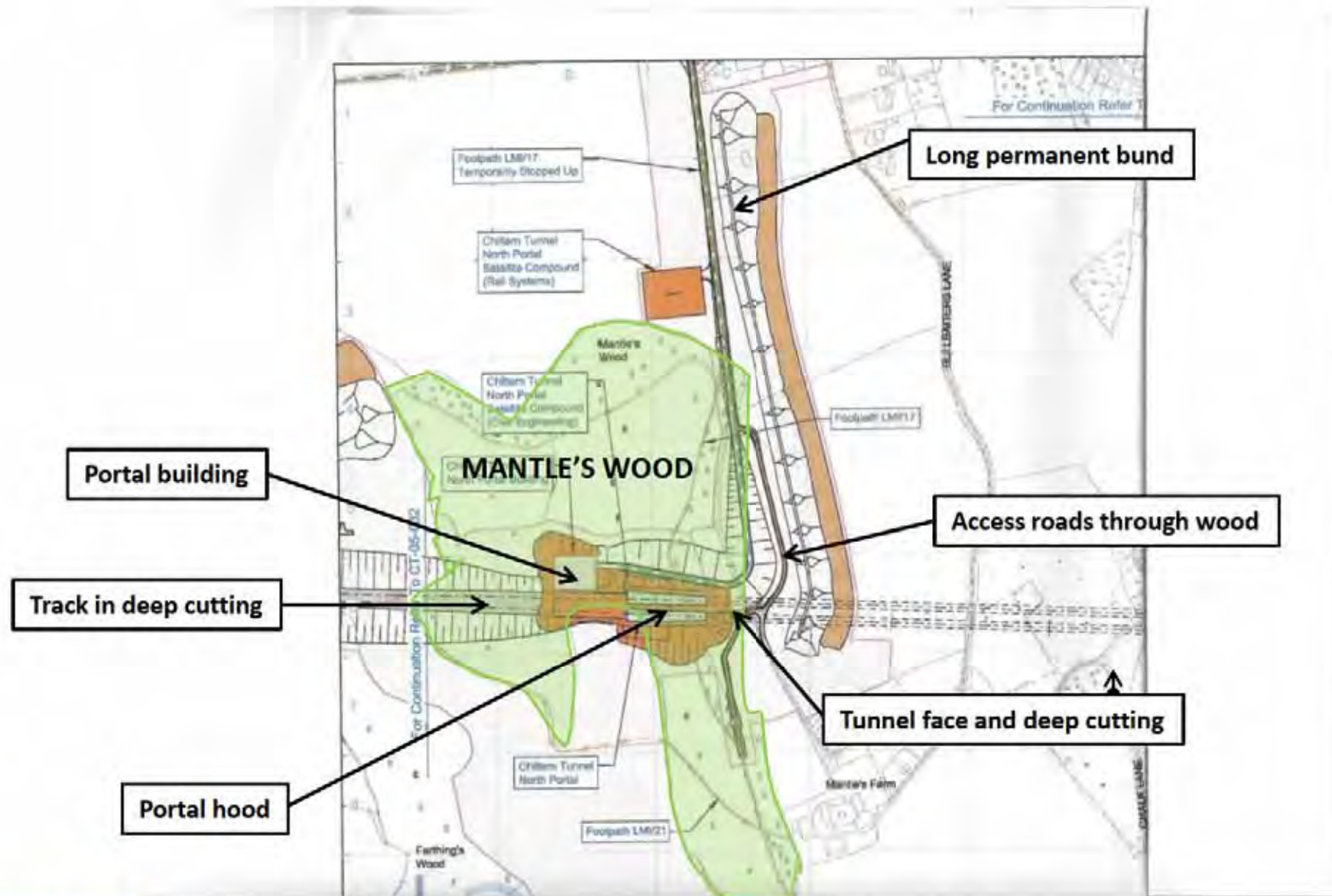
5 individual tunnel portals as proposed by HS2 directly affect the AONB

- **MANTLE'S WOOD NORTH PORTAL**
- **2 GREEN TUNNEL PORTALS AT SOUTH HEATH**
- **2 GREEN TUNNEL PORTALS AT WENDOVER**

These will include:

- Tunnel faces: exposed chalk face / structural works
- Tunnel portals: large built element
- Portal buildings: large building
- Deep cuttings: chalk face / unknown land take
- Access roads: modern access roads
- Raised 'Green' tunnel extending into Wendover vale

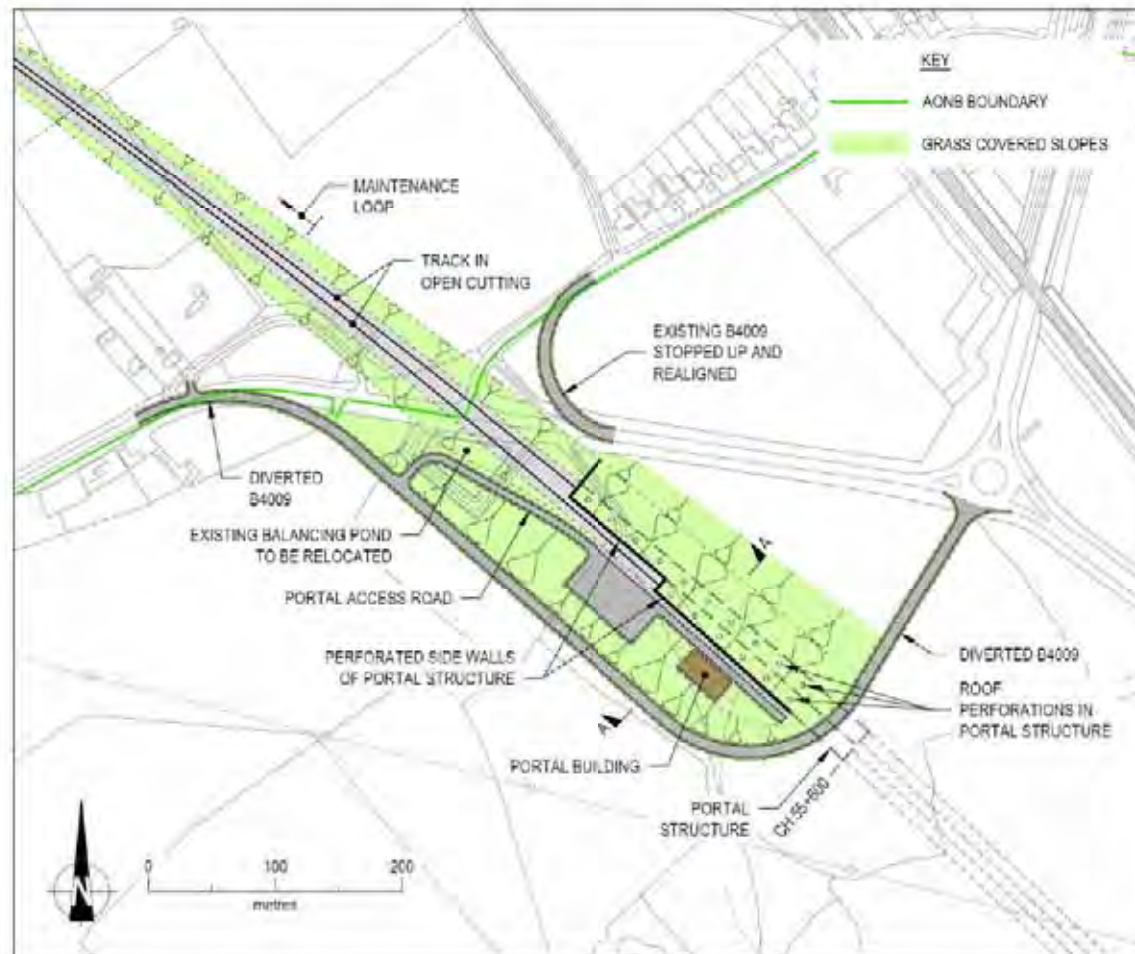




Only one tunnel portal is needed in the Chilterns long tunnel

This also has additional locational benefits:

- It is close to the A413 and B4009 Nash Lee Road junction
- It takes advantage of existing tree screening at the junction



The consequence of an 'edge to edge' tunnel in the AONB is simply a single tunnel portal. There will be:

- **No** exposed tunnel face
- **No** large intrusive built elements
- A single **integrated** tunnel portal
- **No** deep cuttings
- Access roads which **connect directly** to a major highway
- **No** need for major raised landform
- A **single** portal building



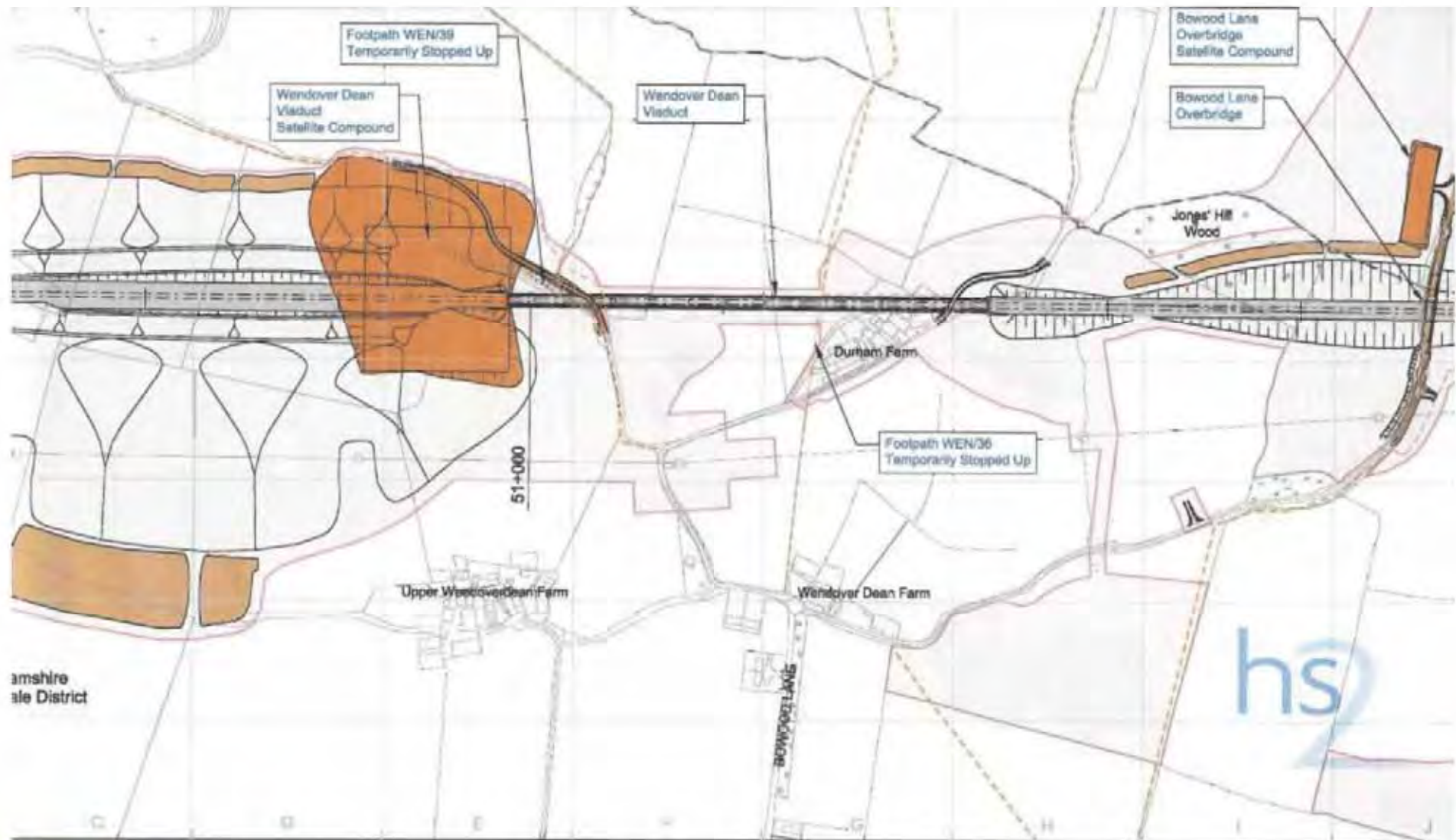
The following slides show the effect of the two viaducts in the AONB

These structures will have a major landscape and visual impact as a result of:

- Raised concrete structures
- Two sections totally 1km within just 2.3km
- Raised 12 to 16m above the dry valleys
- 4 Embankments leading onto viaducts up to 9.8 to 11.5m high



The viaduct at Wendover Dean will completely change the landscape as shown in the HS2 map book extract below



This slide shows a view of the Wendover Dean valley and the line of the viaduct



Compare the same photograph with the above ground
Chiltern long tunnel **intervention gap** on the valley
floor - **if it were needed**



The ancillary infrastructure is also very damaging to the landscape

There would be **13 new road and footbridges**

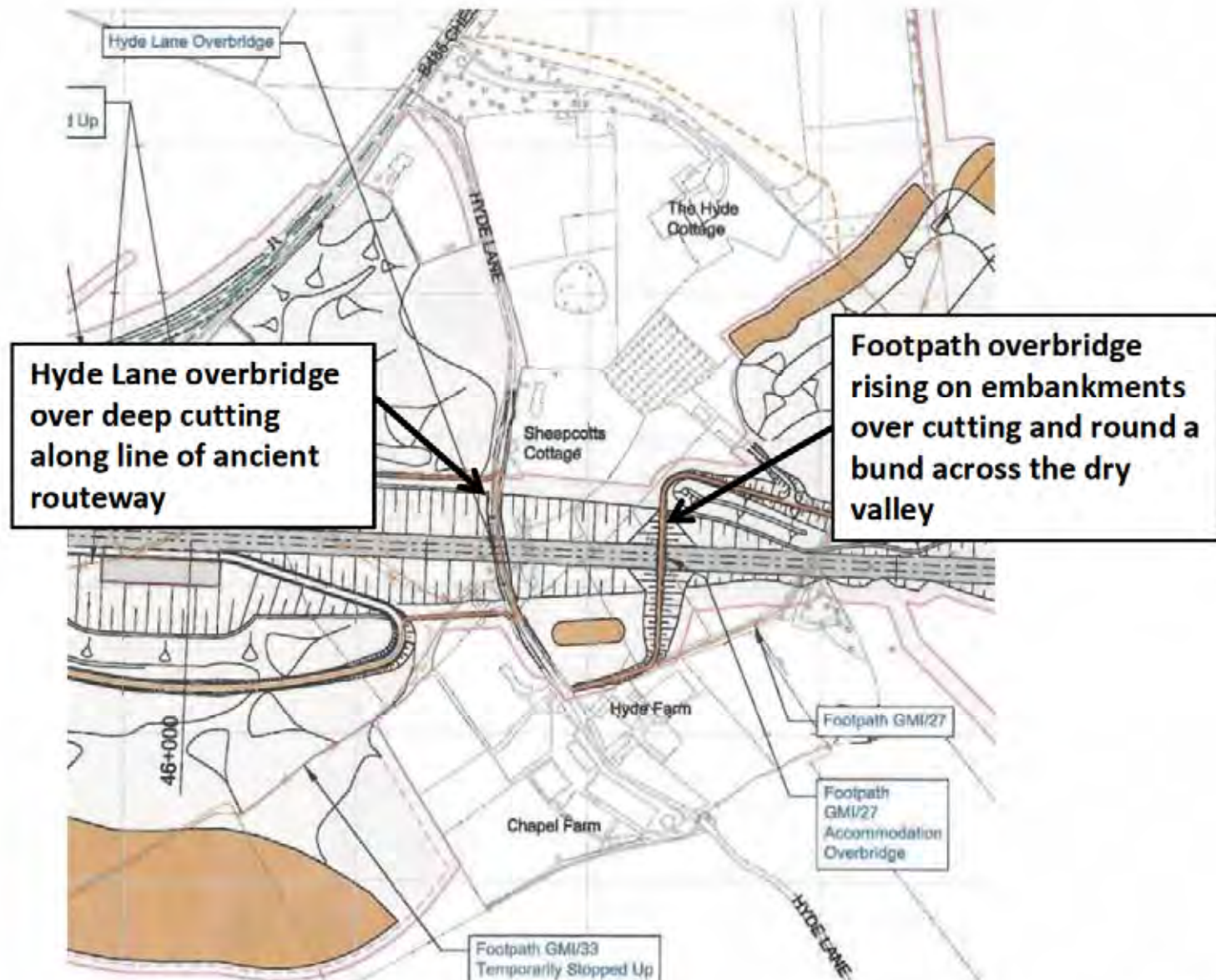
- Built to modern standards damaging the character and appearance of the existing historic roads, sunken lanes and paths
- Creating modern elevated structures
- Needing steel parapets
- Needing high embankments



This is photograph from HS1 of a typical overbridge design



This slide shows the example of the proposed two overbridges at Hyde Farm as shown in the HS2 map books

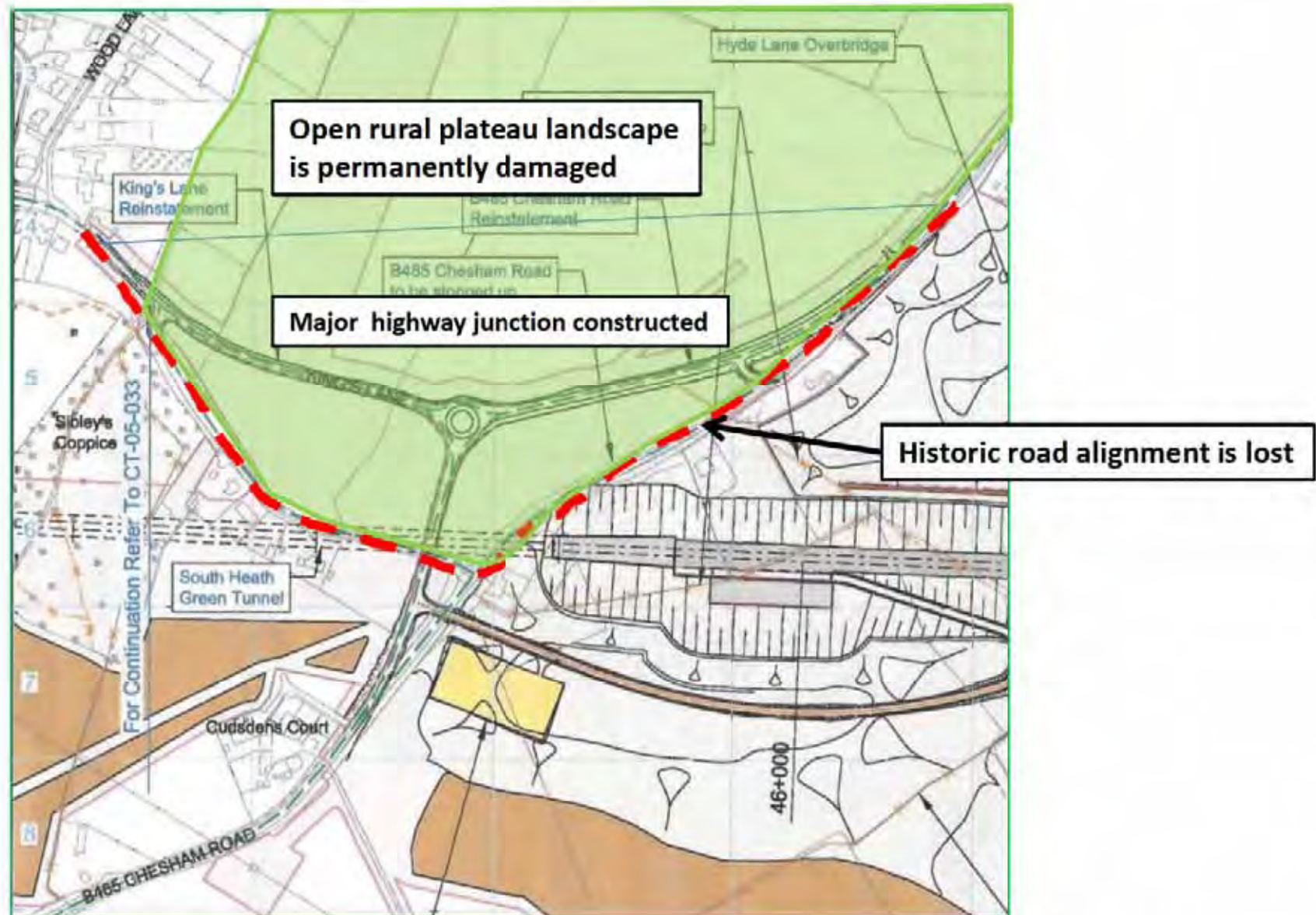


New highways and junctions in the rural landscape will also have a major landscape and visual impact

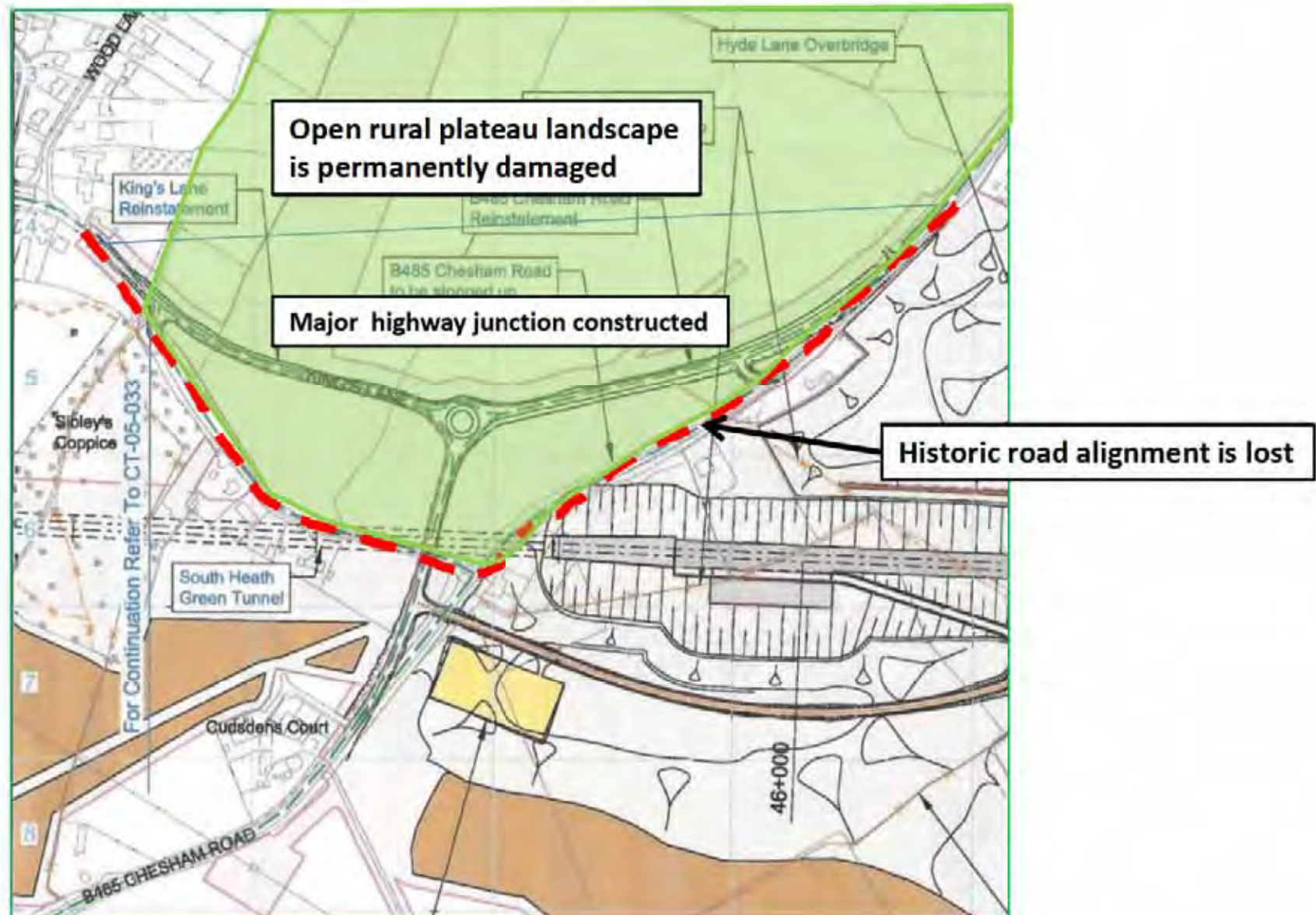
- 1. New roundabout and major road** diversion for Chesham Road will alter its historic alignment and **urbanise** the open landscape
- 2. The diversion of ancient sunken lanes** for example at Leather Lane, Bacombe Lane and Rocky Lane will **alter their historic alignment** and completely change their character
- 3. Major highway changes** at Nash Lee Road will be **highly visible** from the Chiltern escarpment



By way of example: this next slide of the changes to the historic route of Chesham Road illustrates the first point



By way of example: this next slide of the changes to the historic route of Chesham Road illustrates the first point



Cuttings and 'cut and cover' (green tunnels) will also result in major harm to the landscape

- **6.2km** of cuttings and **2.4km** of 'cut and cover'
- Deep cuttings up to **22.5m deep** (with an average depth of 10m between Mantle's Wood and Wendover)
- Wide land take up to **12m wide** and possibly greater if geology dictates need for gentler sides
- All the **surface features are removed**: houses in rural settlements, fields, hedgerows, woodland, road networks
- **Excavated material** has to be stored in the landscape



This is an example of a typical exposed cutting at HS1

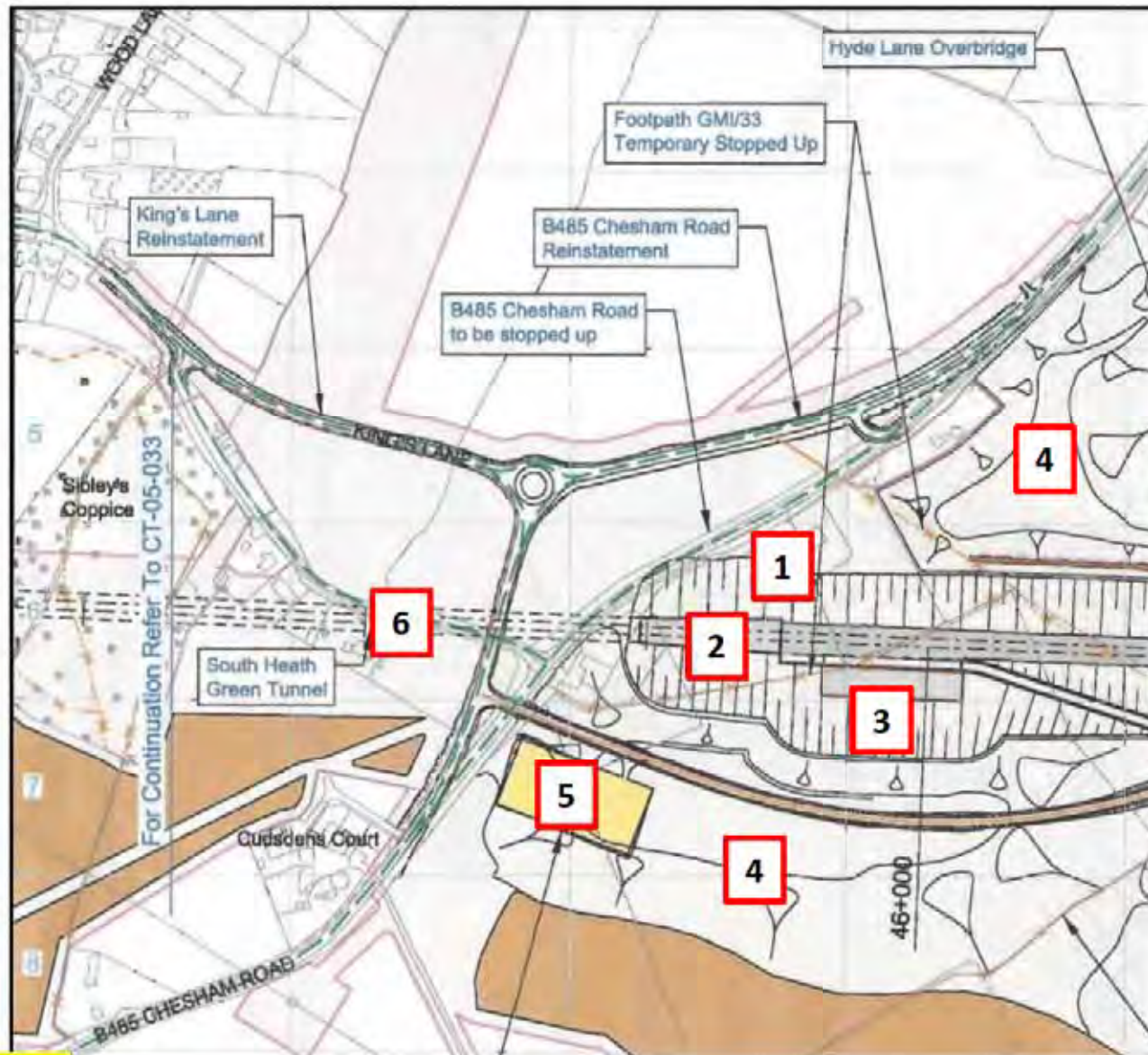


The so called 'green tunnels' also result in further infrastructure which damages the landscape. For example there would be:

- **Raised landforms** at each end of the 'green tunnel'
- A **permanent gap** in the residential terrace along Ellesborough Road
- **Large grassed mounding** over the tunnel exits such as south of Bury Farm and Bacombe Lane
- A **loss of agricultural fields to mitigation planting** as at South Heath
- **Modern new road networks** replace the traditional road design



This is an example of the adverse landscape effects of introducing the infrastructure for 'green tunnels' – here west of former Annie Bailey's public house



KEY:

- 1. DEEP CUTTING
- 2. TUNNEL PORTAL
- 3. LARGE BUILDING
- 4. LARGE RAISED LANDFORM
- 5. MAJOR TEMPORARY COMPOUND
- 6. CUT THROUGH THE LANDSCAPE

Embankments and false cuttings will have damaging effects

1.78km of embankments and false cuttings resulting in:

- Large raised linear features
- Land raising over large areas
- Infilling of natural valleys

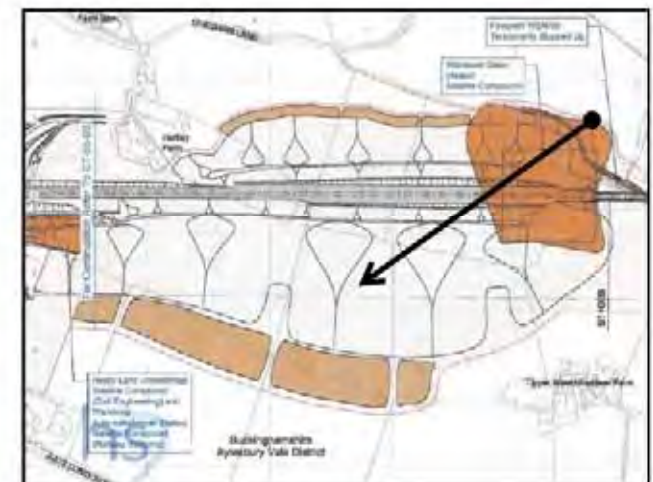


This is shows an example of a major area of landraising east of Hartley Farm

View of land south of Hartley Farm which will be used for a large raised false cutting obscuring views



Plan of surface route design from HS2 Map books



The track infrastructure is also intrusive and out of keeping with the landscape. This includes:

- Track bed and rails
- Fencing 2-3m high
- 8m high galvanised steel gantries
- Mobile masts
- Local lighting in a dark landscape
- Acoustic barriers 3 to 5m high



These photographs show a typical accumulation of track infrastructure (HS1)



The proposed mitigation measures would also result in unacceptable harm to the AONB through:

- **Temporary and permanent visual and acoustic measures** through land raising and bunding (such as at Hunts Green Farm, north of Mantles Farm, Hartley Farm, west of Chapel Farm, east of The Hyde Cottage)
- **Noise barriers**
- Poorly located and unsympathetic **planting**
- Extensive **balancing ponds**



Why is the cutting, soil placement and bunding so harmful?

Because:

- The surface route is a **major extraction project** equivalent to an extremely large quarry which would be wholly unacceptable in the AONB
- The disposal of soils is a **major land raising** exercise, equally unacceptable in the AONB
- They are **harmful** to the special topographical qualities of the AONB



Why are the proposed planting mitigation measures unacceptable?

Because:

- They emphasises the **linear** nature of HS2
- They **obscure** natural features
- They include proposals to **infill** traditional open agricultural dry valleys
- They **block** valued **views**
- They **do not reflect the local landscape character** and pattern
- New planting **cannot replace** the loss of centuries old ancient semi-natural woodland ancient hedgerow alignments and veteran trees

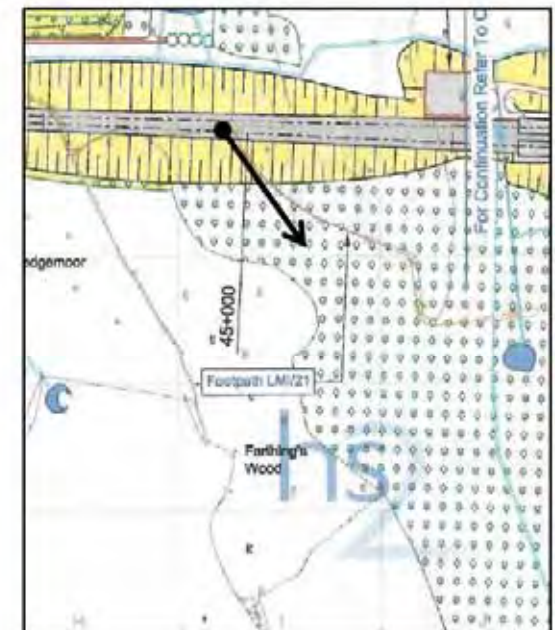


This is one example of such planting which is not in keeping with the special qualities of the AONB

Mantle's wood: Mass planting is proposed to fill in this open dry valley



Plan of surface route design from HS2 map books



Why are the proposed drainage mitigation measures (balancing ponds) also unacceptable?

Because:

- They will be **mainly dry holes or canals** in the landscape due to the natural porosity of the chalk
- The potential for **wet ecological** mitigation **ponds** seems **limited** at best
- Ponds are **not a defining feature** of this chalkland landscape
- Ponds are found on the **valley floor** - not on the upper and middle slopes as proposed
- They will often be **engineered and fenced** features – not natural ponds
- They will lead to **further extraction** of soil materials and the **further soil disposal**

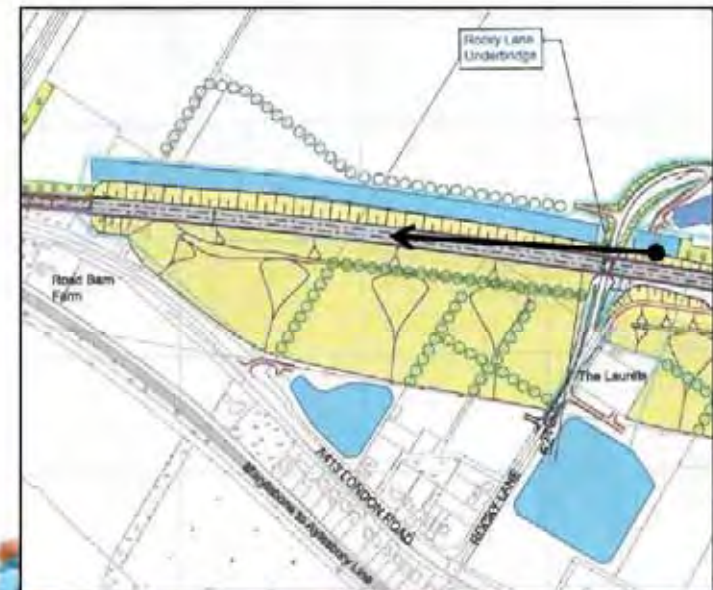


This is one example of an unsympathetic drainage solution in the landscape

West of Rocky Lane: View from Rocky Lane to location of proposed 'canal'



Plan of surface route design from HS2 map books



Last but not least, noise barriers would be wholly incongruous in the AONB landscape – why?

Because:

- These are typically **3 to 5m high** barriers
- They are **not in keeping** with the natural beauty of the AONB
- They will **block off views** of the wider landscape



These are to be found for example in three locations where they will increase the visual impact:

- Along the full length of the **viaducts**
- On the top of **embankments**
- **Next to open fields** in Wendover Vale



Here is an example of a typical noise barrier (HS1)



The surface route will also require changes to the existing pylon line

The diversion of the route of pylon line at South Heath and Wendover which will result in the removal of 4 pylons and replacement with **5 new and higher ones**. **This does not conserve or enhance the AONB.**

This photograph from HS2 map book CFA 10 shows the existing scene from Bacombe Lane



This photo montage from HS2 map book CFA 10 shows the proposed new pylons (and a green tunnel portal) from the same viewpoint on Bacombe Lane



Note the increase in height and number of pylons in the AONB

Summary of damaging elements of the surface route

- A **huge footprint** on the Chiltern Hills landscape
- **Extensive loss** of valued landscape features
- The **permanent** losses and changes to the landscape
- **Severance** of the landscape, temporary and permanent
- **Intrusive** development
- The introduction of major engineered infrastructure **wholly out of keeping** with the character and appearance of the Chiltern Hills of the Chiltern Hills
- **New road networks** and junctions into a landscape noted for its rural network of quiet lanes
- **Land raising** through deposit of soils
- **Unsympathetic and intrusive** noise attenuation and screening solutions
- **Unsympathetic and incongruous** planting and drainage solutions



Summary of harm to the Chilterns AONB

- The surface route has **major landscape impacts** on the landscape and its environmental assets
- The surface route will be **highly visual intrusive** and incongruous



The case for the Chiltern long tunnel through the Chilterns AONB

How will the Chilterns long tunnel avoid these
severe effects and conserve and enhance the
Chilterns AONB?



Landscape and visual benefits of the Chiltern Long Tunnel

The Chiltern long tunnel delivers:

- A **landscape led** solution along the whole route through the AONB
- **Minimisation** of temporary, short term and long term landscape and visual effects
- Benefit of **greatly reduced land take** within the AONB



Landscape and visual benefits of the Chiltern Long Tunnel

The Chiltern Long Tunnel also delivers the major additional benefits of:

- **No spoil disposal** in the AONB
- **No new highway infrastructure**, diversions or redesign the ancient route ways and footpaths
- No need for **noise attenuation** measures



Landscape and visual benefits of the Chiltern Long Tunnel

Are there any landscape and visual impacts?

Yes but very limited!



Landscape and visual benefits of the Chiltern Long Tunnel

A. 3 extra vent shafts

- These can be easily designed to fit in with the landscape
- Visual impacts are very localised

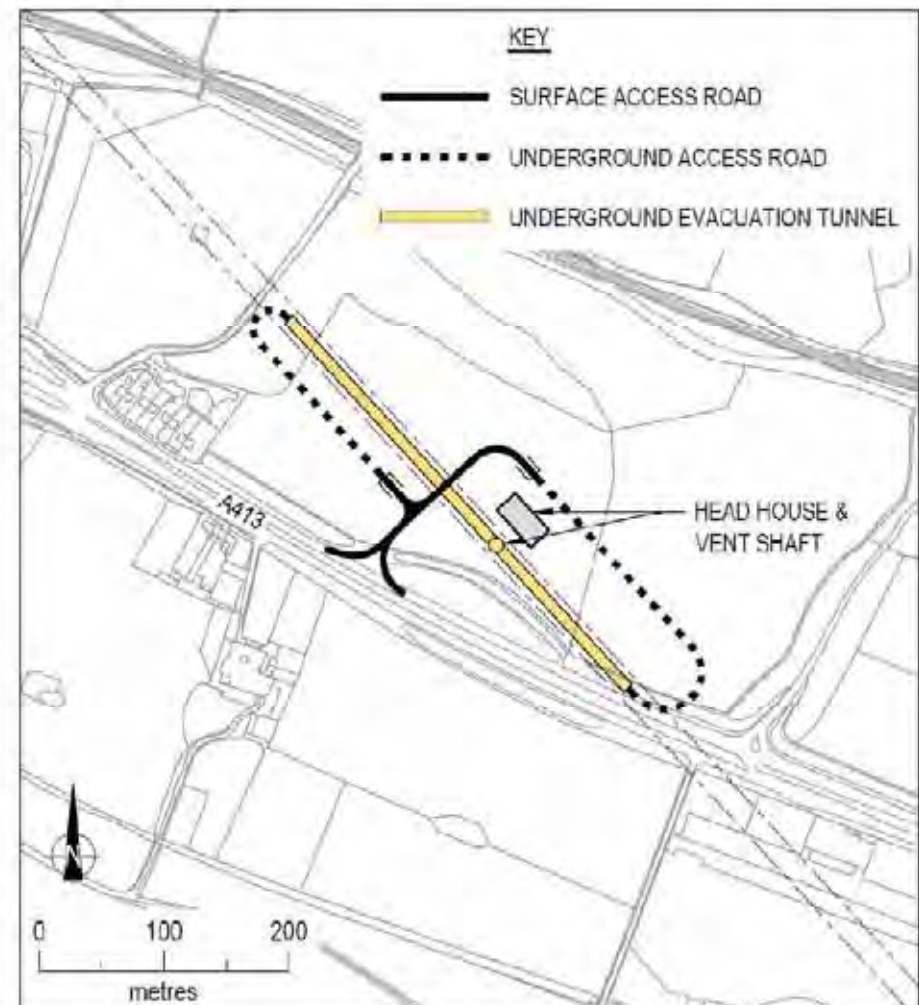
This is an indicative example
from HS2's Tunnel section



Landscape and visual benefits of the Chiltern Long Tunnel

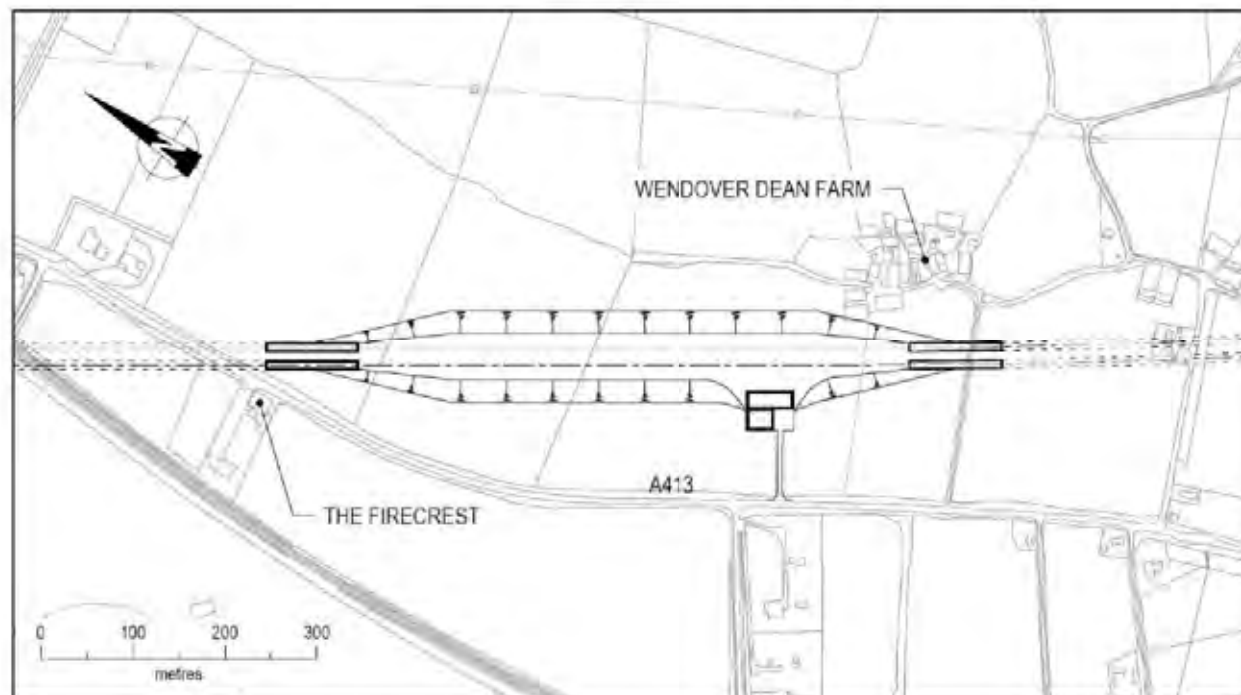
B. The CLT preferred **underground firefighting FFP** has very little impact

- Located on **level ground**
- **Short access** track off the A413 at Little Missenden (an existing HS2 proposed vent shaft point)
- **Relatively short 900m** cut and fill within two open fields
- **Similar impact to a vent shaft**



Landscape and visual benefits of the Chiltern Long Tunnel

- C. The CLT above **ground intervention gap (IG)** at Wendover Dean would have a localised impact, a fraction of that caused by the surface route:
- **Short access** track off the A413
 - **Relatively short 900m** cut within three open fields
 - **Track can be set down** into the flat landscape
 - There is **no** need for **embankments or false cuttings**



Why is the Chiltern northern tunnel portal a better solution in landscape terms?

Because:

- There is **no need for** the incongruous and visually intrusive **long raised mound** in Wendover vale
- The **infrastructure is tied in nicely** to the existing highway infrastructure and junction at the Nash Lee Road roundabout
- The CLT North Portal takes **advantage of existing tree planting** at the junction to screen the portal
- A **very much shorter** section of the landform needs to be modified with cuttings and embankments



Also because:

- The **open agricultural** Vale landscape of the AONB will be **undisturbed**
- The existing **views** from Coombe Hill and Bacombe Hill will be only **temporarily affected** whilst construction takes place
- The **landscape will return** to much as it looks today



The Chiltern long tunnel avoids many landscape risks and uncertainties, inherent to HS2's surface route: for example:

- **No** need to navigate the varied undulating topography
- **No** need for large prominent structures to meet engineering requirements
- **No** additional major land take other than for the north portal (and possibly the intervention gap)
- **Only** a small amount of screen planting needed
- **No** need for higher or bigger soils mounds



- **No** major additional road works
- **No** need for time and money in delivering successful long term management of the new landscape
- **No** risk of unforeseen indirect effects such as wind blow to edge of woodland; dewatering of soil substrate leading to tree loss; or contamination of adjacent habitats



- **No** risk of failed establishment of translocated ancient semi-natural woodland ground flora
- **No** need for more or higher noise attenuation barriers or extensive drainage systems



Conclusions



The overall impact of the surface route on the landscape is *significant*

Why?

Because:

A. The landscape and visual **sensitivity** of the whole of the AONB is **high** (as confirmed by HS2)



Because:

B. The magnitude of change as a result of the surface route is **major adverse**

1. During construction;
2. On completion; and
3. Permanently



Because:

C. The **combination** of high sensitivity of the landscape with a major magnitude of change gives a **major significant adverse effect on the AONB**



Does the surface route comply with national policy ?

No - the proposed surface route is not environmentally sustainable – there are 4 main reasons why not

Any development must be environmentally sustainable including in landscape terms but the surface route:

- 1. Fails** to protect or enhance the natural, built or historic environment (NPPF7);
- 2. Fails** to achieve positive improvements in the quality of the environment (NPPF9);



It also:

3. **Fails** to protect or enhance a landscape of the highest value (NPPF109); and
4. **Fails** to give adequate weight to conserving the landscape and scenic beauty of the AONB which has the highest level of protection (NPPF115).



Summary of landscape case for the Chiltern Long Tunnel

All parts of the AONB are of equal national value

A Chiltern Long Tunnel can ensure that HS2 does
not result in a major adverse impact on a
national landscape asset



Summary of landscape case for the Chiltern Long Tunnel

The Chiltern Long Tunnel cannot be reconsidered later at the detailed or construction stages – a decision has to be made now to protect the AONB



Summary of landscape case for the Chiltern Long Tunnel

The Chiltern Long Tunnel reduces any major adverse landscape and visual impacts on the AONB to an absolute minimum



Summary of landscape case for the Chiltern Long Tunnel

The Chiltern Long Tunnel delivers significant landscape benefits and avoids the need for large scale, unsympathetic and costly 'mitigation' measures



Summary of landscape case for the Chiltern Long Tunnel

The Chiltern Long Tunnel is environmentally sustainable in the landscape terms and conserves and enhances the natural beauty and special qualities of the AONB



We need an Additional Provision for an edge-to-edge tunnel through the Chilterns AONB

