


Extended Tunnel Options

HS2 Summit
8 October 2014

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Chief Executive
Chiltern & South Bucks District Councils

- 
- HS2's approach to mitigation
 - Why a tunnel
 - The amendments already agreed
 - Extending the tunnel
 - HS2 response
 - The Green Route Plus

HS2: Approach to Mitigation

Avoid	Designing the Proposed Scheme so that a feature causing effects is avoided (e.g. through changes in alignment)
Reduce	Designing the Proposed Scheme so that a feature causing effects is reduced (e.g. design changes to reduce visual effects)
Abate	Abating, either at the railway (e.g. noise barrier) or at receptor (e.g. screening at property)
Repair	Restoring or reinstating a feature after effects have occurred (e.g. to address temporary construction effects)
Compensate	Compensation for loss or damage (e.g. planting new woodland elsewhere, or compensation for loss of amenity)

(ES vol.1 Fig 43 Nov 2013)

Why a tunnel

- The A413 'arterial valley' 'route 3' 'transport corridor'
- Longest surface section
- Greatest length of AONB
- Mitigated by
 - hidden in tunnel (32% AONB @ 2009)
 - shallow or deep cuttings
 - the transport corridor itself

The amended route 2012 (Mantles Wood)

Claimed Advantages:

- Reduced impacts on the landscape and communities in or around the AONB
- Avoids the aquifer/ground water
- Less spoil
- Savings (£250-300m)

Extending the Tunnel Options

REPA (Intermediate)

CRAG (T2, HS2 Reference, Full)

“All performed well on environmental grounds compared with (the HS2 scheme)”

- reduction in landscape and visual, ecological, cultural heritage, noise, community and agricultural impacts on the AONB
- CRAG most potential but:
 - £ cost
 - intervention gap
 - time

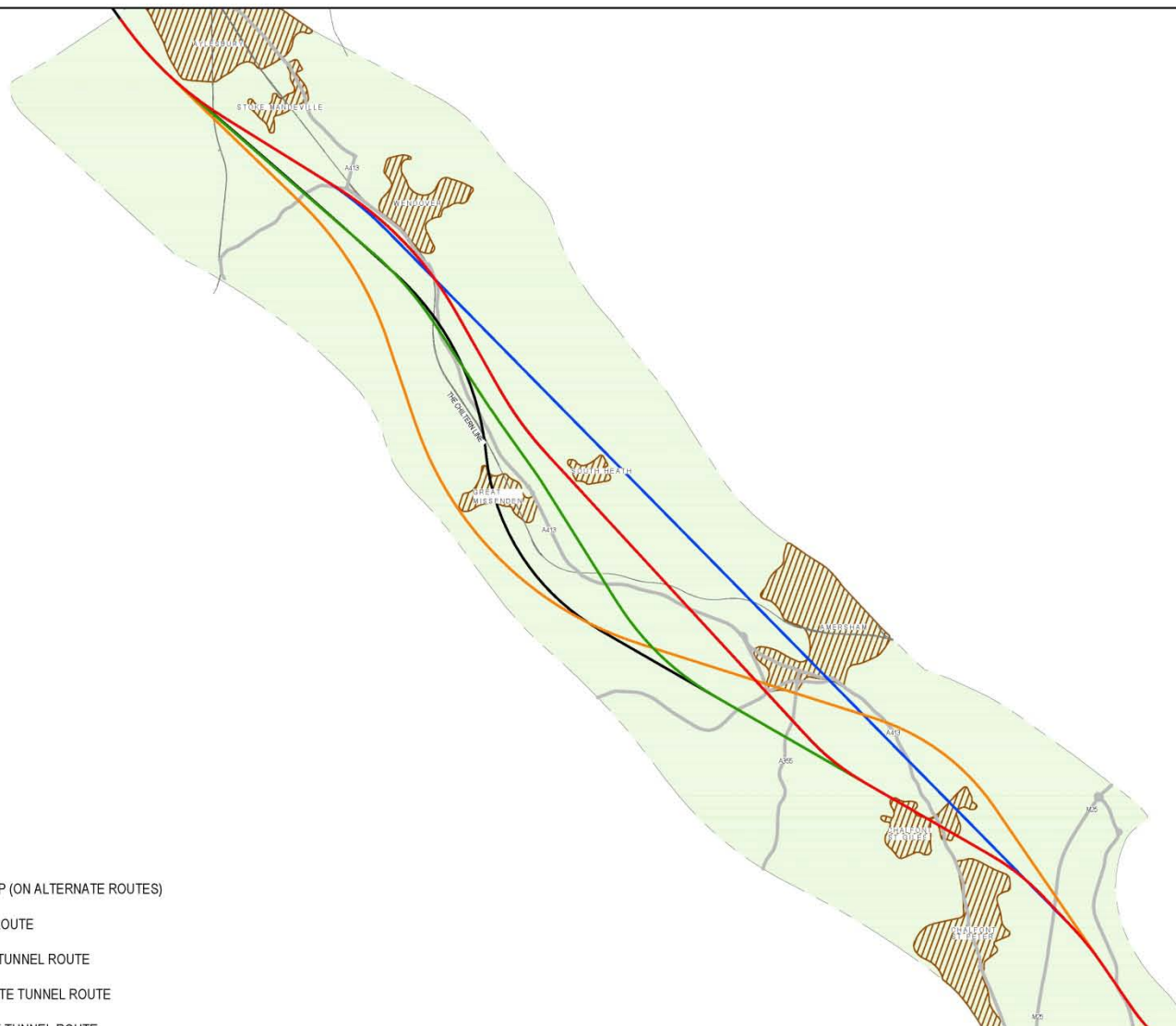
(ES vol 2 CFA9 Nov 2013)

Going Underground: The Green Route

- 1) Protect the AONB
- 2) Mitigate the impact on our communities
- 3) Provide a better engineering solution

Co-operative effort

AVDC, BCC, CCB, CDC



URBAN AREA

TUNNEL PORTALS

INTERVENTION GAP (ON ALTERNATE ROUTES)

HS2 REFERENCE ROUTE

BLUE ALTERNATE TUNNEL ROUTE

ORANGE ALTERNATE TUNNEL ROUTE

BLACK ALTERNATE TUNNEL ROUTE

GREEN ALTERNATE TUNNEL ROUTE

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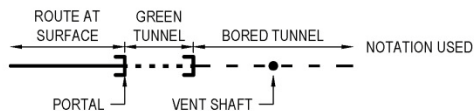
ROUTE ALTERNATIVES



KEY



URBAN AREA



NOTATION USED

- GREEN ALTERNATE TUNNEL ROUTE
SEE Drg No. 012 FOR VERTICAL ALIGNMENT
- HS2 REFERENCE ROUTE
SEE Drg No. 013 FOR VERTICAL ALIGNMENT
- HS2 REFERENCE TUNNEL ROUTE
SEE Drg No. 013 FOR VERTICAL ALIGNMENT
- HS2 INTERMEDIATE TUNNEL ROUTE
SEE Drg No. 014 FOR VERTICAL ALIGNMENT

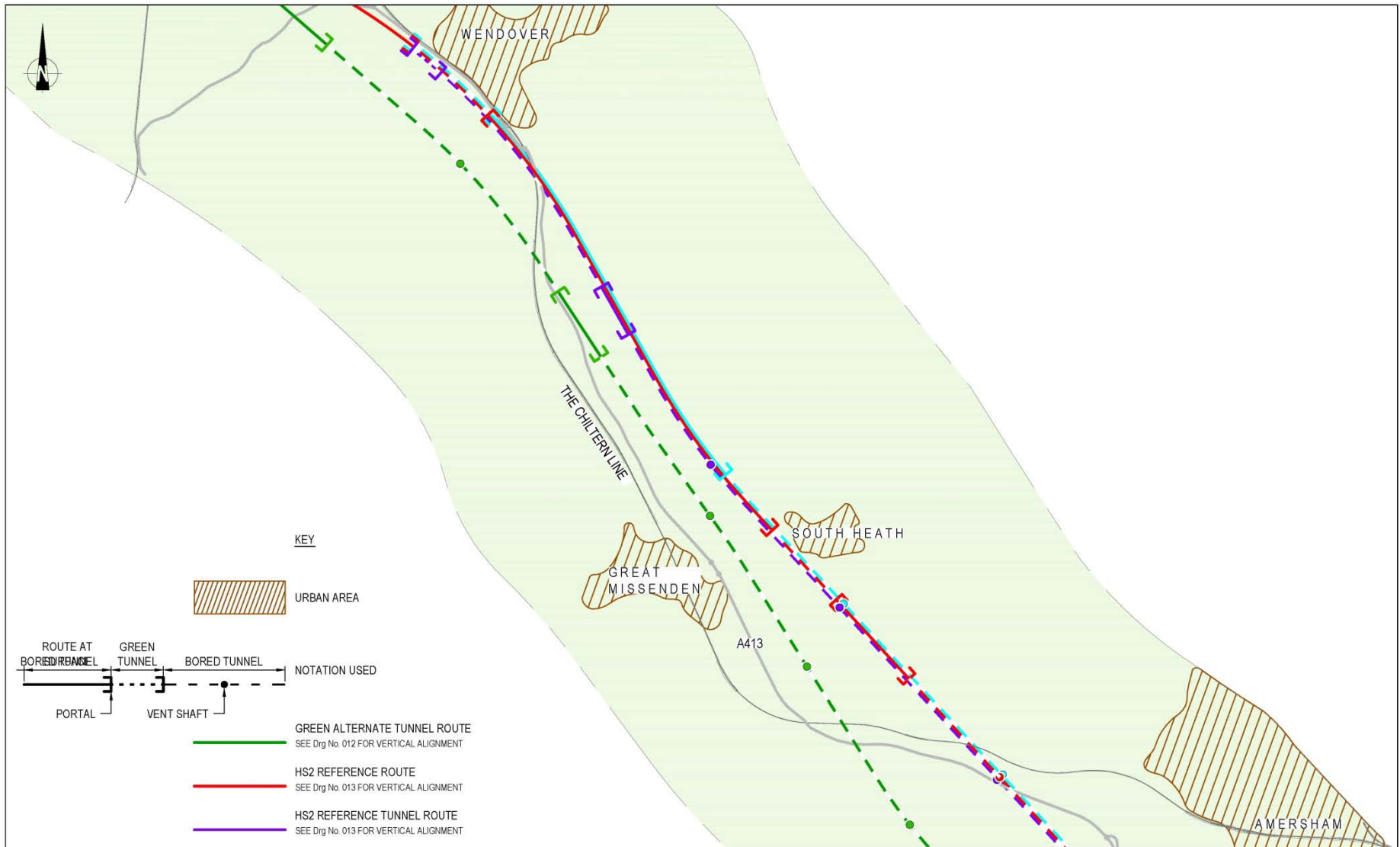
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ROUTE PLANS

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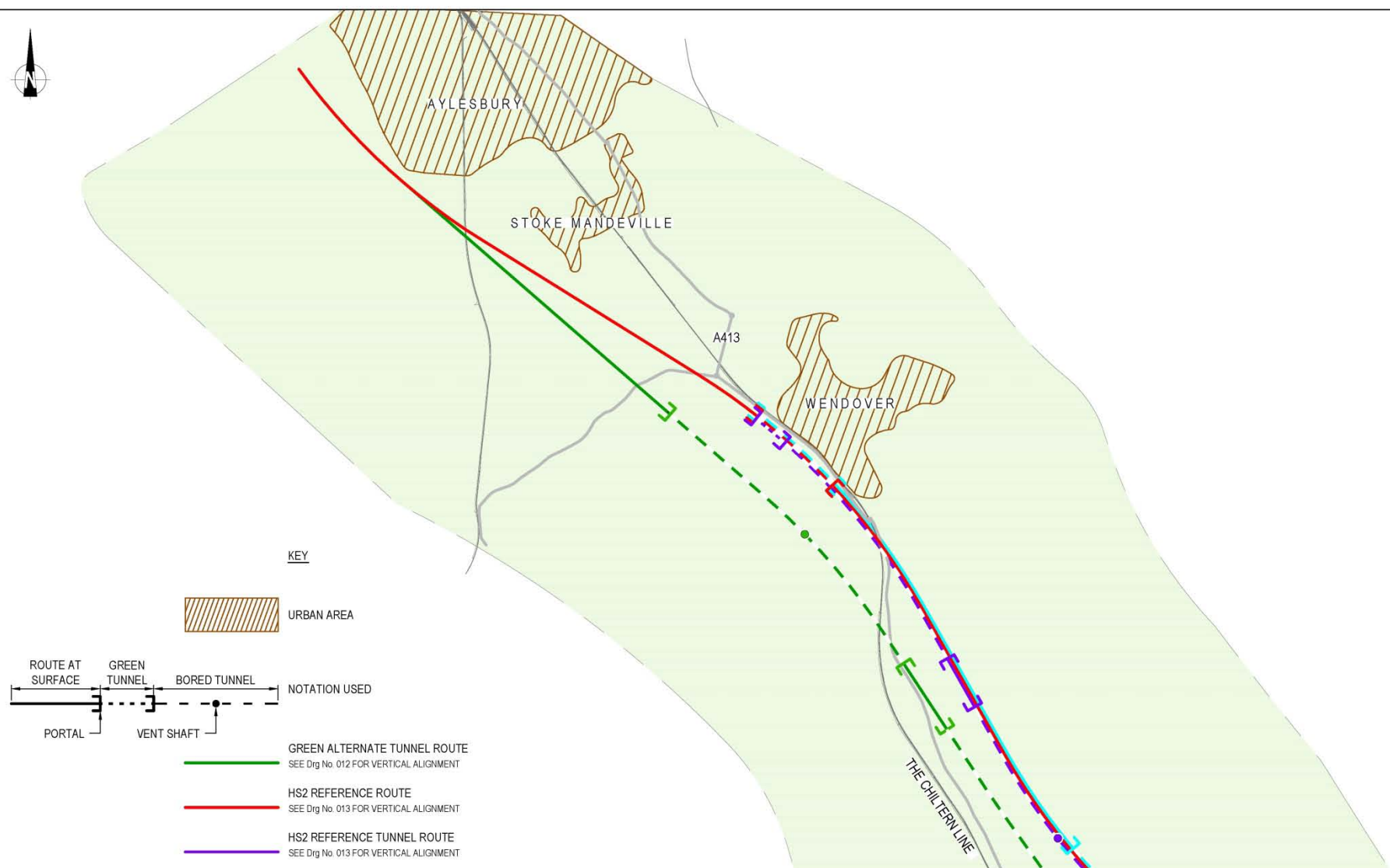
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INTERVENTION GAP LOCATIONS

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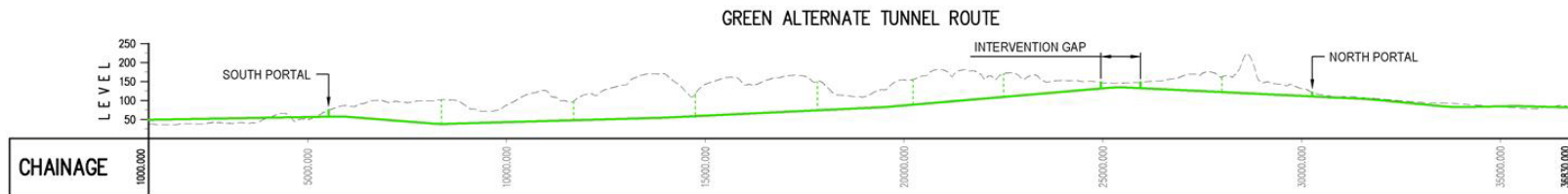
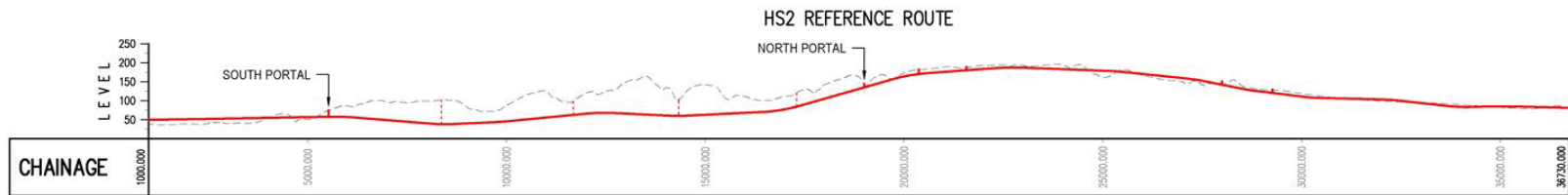
NORTHERN PORTAL LOCATIONS

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Route Long Sections



Going Underground: Comparisons

	HS2 Proposal	REPA ₁	CRAG	Green
Length km	13.4	15.8	23.7	24.7
Northern Portal	Little Missenden	Leather Lane	Wendover	South of Nash Lee
Distance from (m) Wendover Station	160	160	160	880
Climb (m)	149		129	106
Cost (+£m)	0	130	310	370
%				1.5/2

¹ Latest figure provided by REPA 16.9km in length

Meeting with Sir David Higgins:

“radical alternative”

- 1) New consultation, environmental statement, amendments – add five years - £ billions to the cost
- 2) £ cost: tunnels x 6 surface
- 3) Other tunnels wanted: Leeds: Sheffield
- 4) Agreed to examine, but look at more than one scheme

The Green Route +

- Cost and construction time
- 'Safety in railway' tunnels EU regs
- Sensitivity of northern portal
 - appearance
 - noise
 - residential properties
 - Nash Lee Road
- Parallel work on environmental impact
- Risk
- Target: end of November