HIGH SPEED UK
..connecting the nation

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  Civil Engineering Principal, HSUK

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- Quentin Macdonald BSc(Eng) CEng MIET FIRSE

  Systems Engineering Principal, HSUK

- There will be more about us shortly

www.highspeeduk.co.uk

Today's Objectives

HSUK

One hesitates to set objectives one-sidedly but here goes. Today's objectives are:

1. For HSUK to understand reasons for some MPs voting against HS2;
2. For HSUK to demonstrate just what a dreadful railway scheme HS2 actually is;
3. For HSUK to give a better appreciation of the value to the nation of the HSUK proposals;
4. To understand the value of promoting HSUK in the fight against HS2;
5. To explain HSUK's intended next steps and seek further assistance.

Voting Against

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When an MP votes against a Government bill, particularly one on the scale of HS2 there is always a very good reason for it.

It would help us to know what those reasons might be.

- Poor value for money, low BCR?
- Environmental impact?
- Effect on constituents?
- Better ways of improving the rail offer?
- Other?

Rail Investment Philosophy HSUK

1. The market for passenger transport by rail has a pattern of long term steady growth;
2. A 70% rise over the last 13 years (>5% p.a.);
3. Causes could be road congestion and fuel prices coupled with more attractive rail services;
4. Puts the question of investment in new rail lines rather than building more trunk roads firmly in the government's sight;
5. New lines in virgin territory are usually easier to build and with less disruption than upgrades of existing lines but **upgrades are good too**;
6. If new then let us make them High Speed.

Rail Investment Philosophy HSUK

- What is High Speed? It has been defined!
- Lines which have an operational top speed of 200 km/h or more are classified as High Speed;
- 125 mph = 201.2 km/h so UK high speed lines are:
  a) The East Coast Main Line (ECML) – Kings Cross to Leeds Edinburgh (125 mph maximum);
  b) The West Coast Main Line (WCML) – Euston to Birmingham and Manchester and Glasgow (125 mph maximum);
  c) The Great Western Main Line (GWML) – Paddington to Bristol/South Wales & West Country (125 mph maximum);
  d) High Speed 1 (HS1) – St Pancras to Stratford, Ebbsfleet, Ashford and the Channel Tunnel (CT);
     i. 300 km/h [186 mph] CT to Fawkham Jn (near Ebbsfleet);
     ii. 230 km/h [143 mph] Fawkham Jn. to St Pancras.

Rail Investment Philosophy HSUK

1. Government could see the following:

   Getting people out of cars and onto electrified rail is good for reducing CO_2 emissions because:

   a) It is far easier to "green" power stations than individual cars;

   b) People like railways and think of them as environmentally less damaging than roads;

   c) The government thought that investment in High Speed Rail could be uplifting for the nation!!

2. HS2 was born (heaven help us!).

UK Annual Passenger Numbers

HSUK

Annual Passenger Numbers (millions)					
Year	Long distance	London and South East	Regional	Total	Total % Change
2002–2003	77.2	679.1	219.2	975.5	
2003–2004	81.5	690.0	240.2	1,011.7	3.71 ▲
2004–2005	83.7	704.5	251.3	1,039.5	2.75 ▲
2005–2006	89.5	719.7	267.3	1,076.5	3.56 ▲
2006–2007	99.0	769.5	276.5	1,145.0	6.36 ▲
2007–2008	103.9	828.4	285.8	1,218.1	6.38 ▲
2008–2009	109.4	854.3	302.8	1,266.5	3.97 ▲
2009–2010	111.6	842.2	304.0	1,257.9	0.68 ▼
2010–2011	117.9	917.6	318.2	1,353.8	7.62 ▲
2011–2012	125.3	993.8	340.9	1,460.0	7.84 ▲
2012–2013	127.7	1,032.9	341.1	1,501.7	2.86 ▲
2013–2014	129.2	1,107.8	350.8	1,587.8	5.73 ▲
2014–2015	134	1,155	365	1,654 [18]	4.17 ▲
% Change 2002 - 15	73.6	70.1	66.5	69.6	

More Introduction

HSUK

So what is our professional background and why are we qualified to challenge HS2?

We propose to divide this into two parts:

a) The origins of our personal passion for railways as a most practical means of travel;

b) Our professional education and experience which gives us the necessary oversight;

1. Colin

2. Quentin

Remits Compared – HS2!!

HSUK

Colin looked at the HS2 remit and winced!! Here it is:

HS2 REMIT – KEY POINTS

1 Build a London to West Midlands high speed line

2 Consider development of network further north

3 Select a London terminal

4 Consider an intermediate parkway station between London and W Midlands

5 Build an interchange with GWR/Heathrow/ CrossRail services

6 Connect to HS1 and the existing network

SUMMARY OF THE REMIT AND OBJECTIVES OF HIGH SPEED TWO

On 15 January 2009 the Secretary of State for Transport announced in 'Britain's Transport Infrastructure: High Speed Two', the setting up of a new company to look at a possible new railway line between London and the West Midlands.

HS2 was set up shortly after as a private company limited by guarantee. It is chaired by Sir David Rowlands and Alison Munro was seconded from the Department of Transport as Chief Executive. The rest of the HS2 team comprises further secondees from the DfT and from Network Rail

HS2's remit is to develop proposals for a new railway line from London to the West Midlands taking account of environmental, social and economic assessments. It will also provide advice to Ministers on the potential development of a high speed line beyond the West Midlands at the level of 'broad corridors, considering in particular the potent to extend to Greater Manchester, West Yorkshire, the North East, and Scotland.

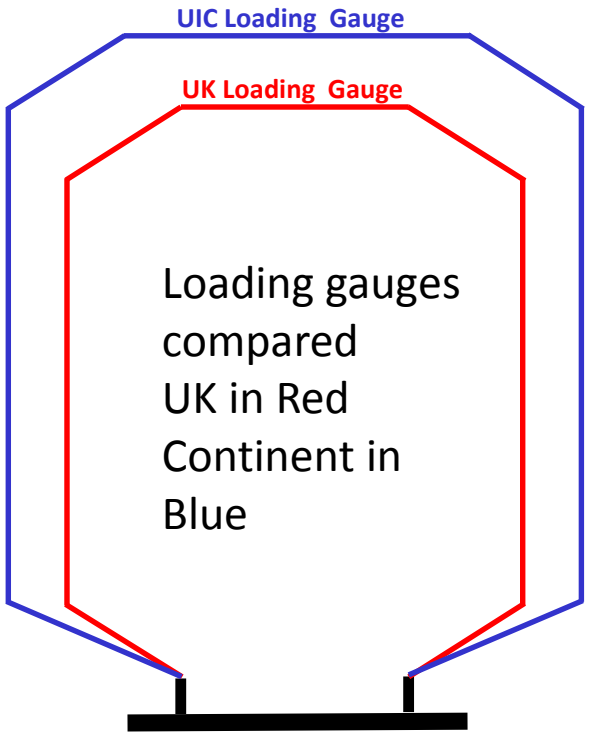
HS2 will make recommendations on options for a terminus station or stations serving London and possible options for an intermediate parkway station between London and the West Midlands. It will also provide a proposal for an interchange station between HS2, the Great Western Main Line and Crossrail with convenient access to Heathrow airport. HS2 will also provide suggested means of linking to HS1 and the existing rail network. .

HS2 will produce a confidential report to Ministers by the end of 2009 that should be sufficiently developed to form the basis for public consultation in 2010 should Ministers decide to take this project forward. The advice will also include financing and construction proposals as well as a proposition for how best to move through the planning process within an indicative outline timetable

HS2 "Achievements - 1"

HSUK

- HS2 has gone against all custom and practice for building high speed lines across continental Europe. HS2 uses trains which are too big ('fat') for the infrastructure of the existing UK network and stations.
- **HS2 is a stand alone railway – not a network enhancement**
- HS2 'fat' trains can only serve 8 stations Euston, Old Oak Common, Birmingham Interchange, Birmingham Curzon St., East Midlands (Toton), Sheffield Meadowhall, Manchester & Leeds;
- Birmingham Curzon St., Manchester & Leeds are planned to be operationally inflexible terminus stations;
- This becomes 10 if the line is ever extended to Scotland adding Edinburgh and Glasgow;
- Totally inflexible.
  - No diversionary routes available;
  - Requires a second fleet of 'classic compatible' trains to give a limited service onto the existing network at just 5 access points.



HS2 "Achievements - 2"

HSUK

- HS2 wrecks the existing intercity train services on major parts of the network; KPMG Report *HS2 Regional Economic Impacts – Table 23 pp 91-92*
- HS2 trashes the Chilterns AONB, Walton Hall, Edgecote House and far too many homes & ancient woodlands. Direct result of extreme speed. There is a lack of flexibility in the design;
- HS2 wrecks Euston area, demolishes 200+ homes, relocates 20,000 graves and creates an incredible 20 years of construction disturbance for the local residents;
- HS2 is said to be carbon neutral saving no CO_2 emissions, unlike HSUK. This is completely contrary to the spirit and maybe the letter of the 2008 Climate Change Act which says reduce CO_2 emissions by 80% by 2050. HS2 should make its contribution;
- Therefore any MP who voted Aye for the 2008 Climate Change Bill could not logically have voted Aye for the for the HS2 Bill?
- Very many did both. Where is "Joined-up" Government just when you need it most?

Conclusion

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HS2 is the wrong kind of railway!!

Enter HSUK

Remits Compared – HS2!!

HSUK

HS2 REMIT – KEY POINTS

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Remits Compared – HSUK 1

Starting with the existing rail network and service patterns, use the opportunity offered by the intervention of new build high speed rail to:

1. Achieve direct services of inter-city quality between all cities and other major conurbations of mainland UK starting with a high speed line running northwards from London;
2. Have hourly or better frequencies on those services;
3. Enhance service levels to intermediate secondary cities by providing frequent physical connections to the existing network;
4. Maintain existing service levels on lines not directly affected by HSUK;
5. Facilitate easy transfer between national rail and local transport services (train, metro, tram, underground, busses and taxis) at existing hub railway stations;
6. Provide an 'easy transfer' connection to London suburban rail services;

Remits Compared – HSUK 2 HSUK

7. Offer significant journey time reductions on all routes, including interregional services outside the direct zone of influence new high speed lines and associated upgrades to existing lines;
8. Give direct access to all major airports by providing linking services to as many of them as possible including direct connections to Heathrow, Gatwick and Luton;
9. Release capacity on the existing lines for other new services;
10. Develop a dedicated national freight network, linked to the Channel Tunnel, largely independent of major passenger services capable of carrying trains of UIC-C loading gauge in order to tranship road truck trailers by rail;
11. Be a good neighbour to local communities by following existing transport corridors, i.e. motorways, trunk roads and railways where there is already significant noise pollution and avoiding, as far as possible, all environmentally sensitive sites;

Remits Compared – HSUK 3

HSUK

12. Provide a link to HS1 without using the already overcrowded North London Line;
13. Develop a new national intercity timetable to demonstrate exactly what the HSUK design can deliver.

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The HSUK design meets all 13 requirements 100%

The HS2 design meets none of them

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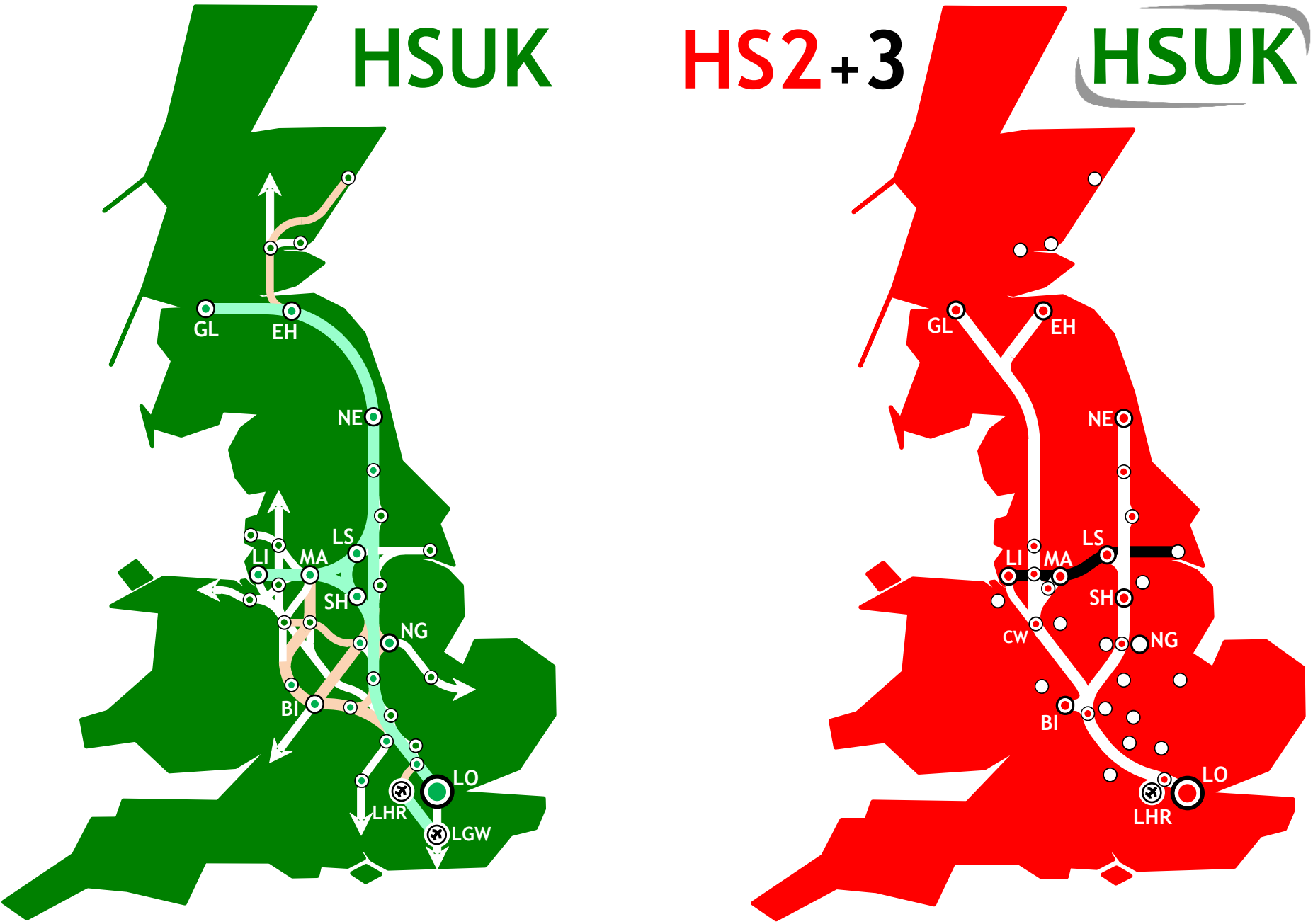
We have repeatedly told HS2/DfT about HSUK by means of the consultation opportunities

They don't listen and are not interested


HSUK
GL
EH
NE
LS
LI
MA
SH
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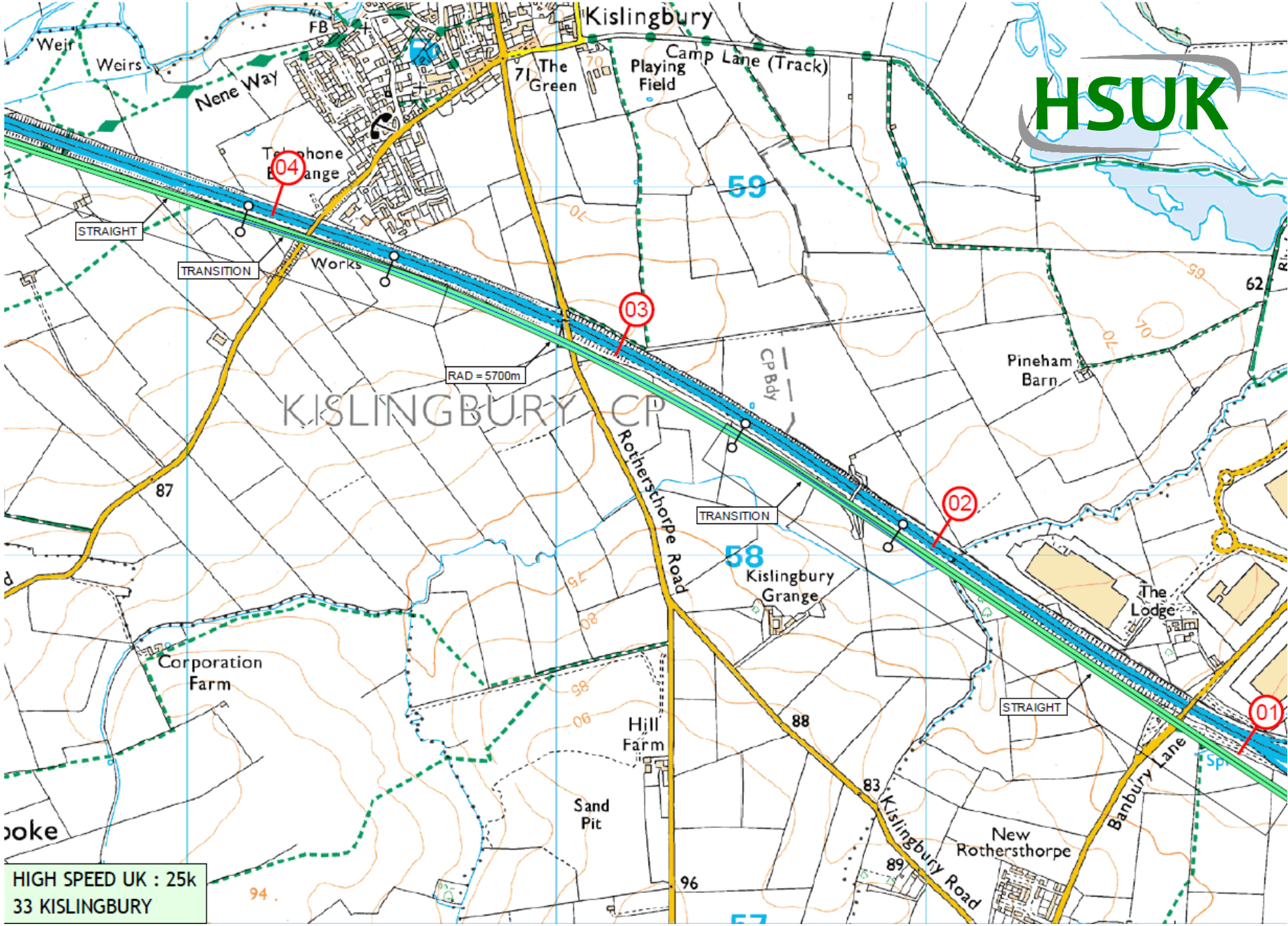
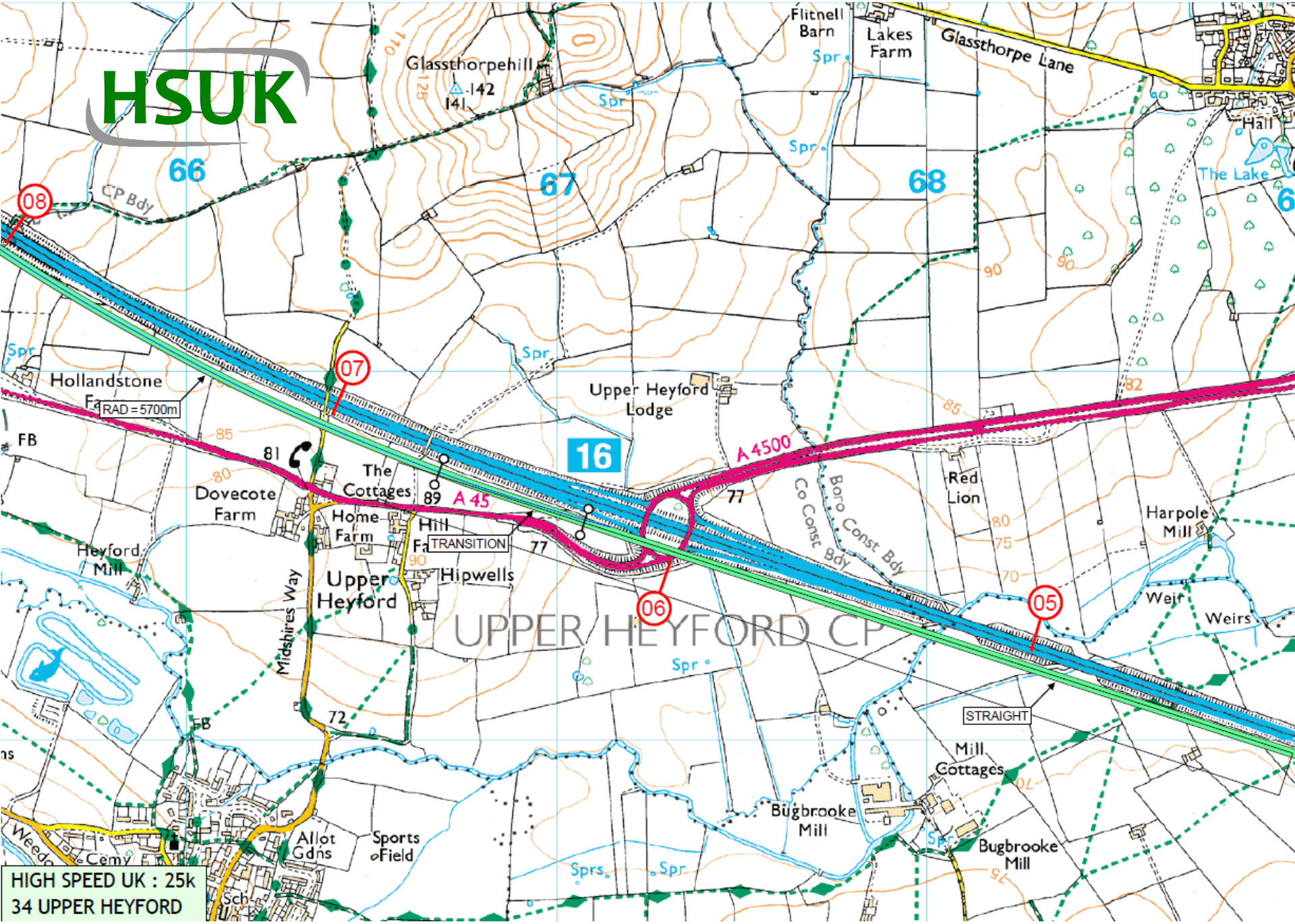
LO
LHR
LGW
HS2+3
HSUK
GL
EH
NE
LS
LI
MA
SH
CW
NG
BI
LO
LHR

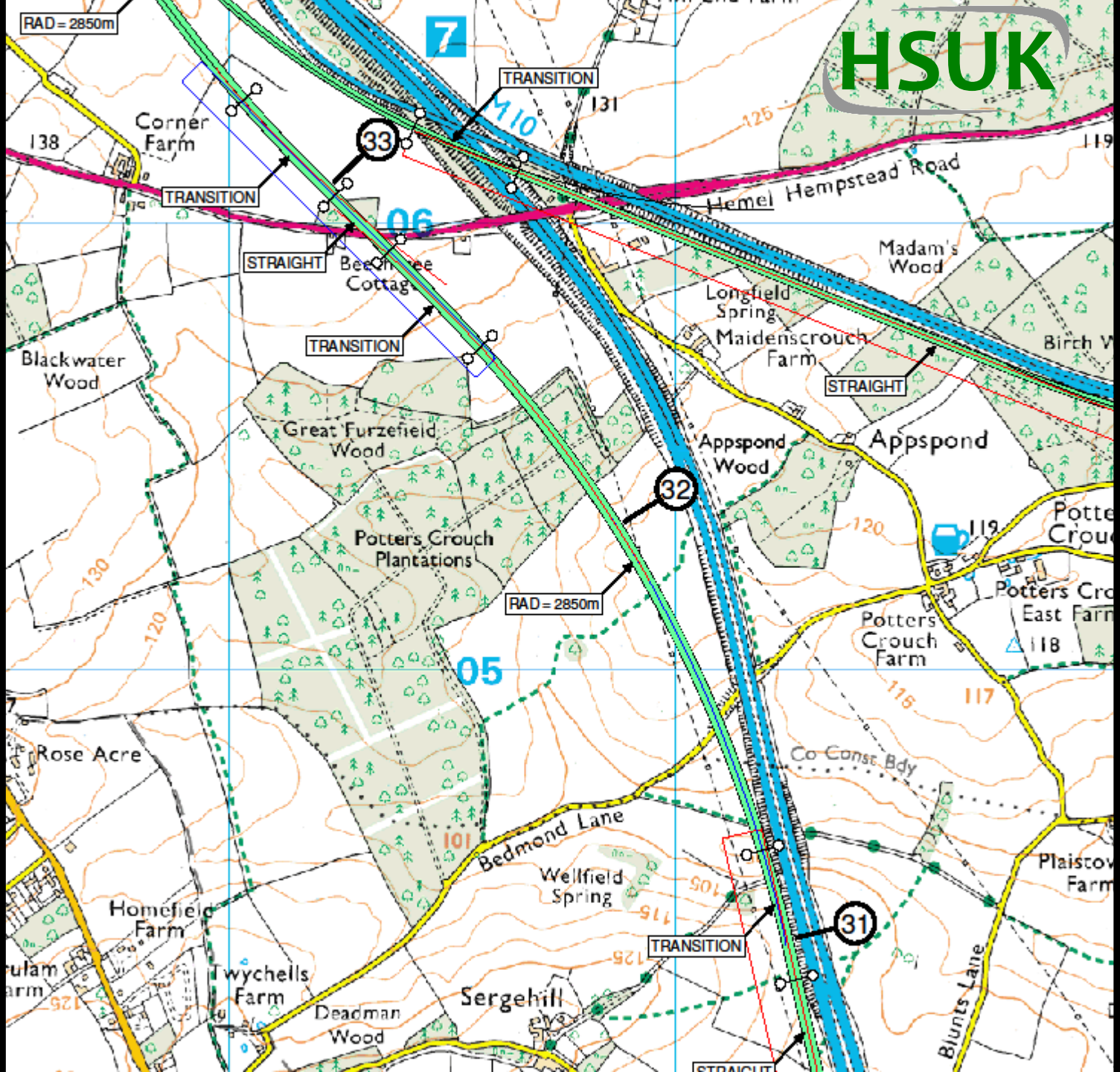
The HSUK Design

HSUK

- The HSUK design is not simply a set of good ideas shown on large scale maps scratched on with a crayon!
- The design is professional civil engineering at its best. Every piece of straight track, circular curved track (an arc of a circle) and transition an arc with a variable radius of curvature (think spiral or snail) has been identified and recorded all the way from London to Glasgow in both the horizontal and vertical planes at a scale of 1:25,000
- The design is “oven ready” for the next step of the design work which is detailed design at a scale of 1:10:000.


HSUK
Kislingbury
Weir
Weirs
FB
Nene Way
The Green
Playing Field
Camp Lane (Track)
Telephone Exchange
04
59
STRAIGHT
TRANSITION
Works
03
RAD = 5700m
KISLINGBURY CP
CPBdy
Pineham Barn
62
Rothersthorpe Road
87
TRANSITION
02
58
Kislingbury Grange
The Lodge
Corporation Farm
Hill Farm
88
STRAIGHT
01
Banbury Lane
Sand Pit
83
Kislingbury Road
New Rothersthorpe
89
96
94
HIGH SPEED UK : 25k
33 KISLINGBURY


HSUK
66
67
68
08
07
06
05
16
RAD = 5700m
TRANSITION
STRAIGHT
A 45
A 4500
Glassthorpehill
142
141
Flitnell Barn
Lakes Farm
Glassthorpe Lane
Hall
The Lake
CP Bdy
Hollandstone
Upper Heyford Lodge
FB
81
The Cottages
89
Dovecote Farm
Home Farm
Hill Fa
Hipwells
Upper Heyford
Heyford Mill
Midshires Way
Boro Const Bdy
Co Const Bdy
Red Lion
Harpole Mill
Weir
Weirs
UPPER HEYFORD CP
Mill Cottages
Bugbrooke Mill
Bugbrooke Mill
Allot Gdns
Sports Field
Cemy
Sch
Spr
Sprs
HIGH SPEED UK : 25k
34 UPPER HEYFORD


HSUK
RAD = 2850m
7
TRANSITION
M10
131
125
119
138
Corner Farm
33
TRANSITION
Hemel Hempstead Road
06
STRAIGHT
Beech Tree Cottage
TRANSITION
Madam's Wood
Longfield Spring
Maidenscrouch Farm
STRAIGHT
Birch W
Blackwater Wood
Great Furzefield Wood
Appspond Wood
Appspond
32
Potte Croue
120
119
Potters Crouch Plantations
RAD = 2850m
Potters Crc East Farm
Potters Crouch Farm
118
130
120
05
115
117
Rose Acre
Co Const Bdy
101
Bedmond Lane
Plaistow Farm
Wellfield Spring
105
115
125
Homefield Farm
31
TRANSITION
Twychells Farm
Deadman Wood
Sergehill
Blunts Lane
STRAIGHT

Track Alignment Design

HSUK

30.63	30625	107	255						STR				102.0		100000	375	0.0	0.000	-100000	0.00	102.0	-5.5	5.5	30.6
30.75	30750	105	255	RoCD	35	E	175		STR		30.70		104.0		100000	250	49.9	0.000	-100000	-0.01	104.0	-1.5	1.5	30.8
30.88	30875	111	255	Rmin	2875	D	77		STR	30.86			106.0			125	174.9	-0.002	-100000	-0.15	105.8	-5.7	5.7	30.9
31.00	31000	113	255	Vdes	255	Lt	354.2			31.04	31.00	108.0	108.0		299.9	0	Φ	0.003	-100000	-0.45	107.6	-5.9	5.9	31.0
31.13	31125	104	255	vdes	70.8				2875	31.22		2000	109.3		-1	125	174.9	-0.002	-100000	-0.15	109.1	4.6	4.6	31.1
31.25	31250	95	255	vperm	70.9	ratio	1.001		2875		31.30	20.00	110.5		70.8	250	49.9	0.000	-100000	-0.01	110.5	15.0	15.0	31.3
31.38	31375	100	255						2875			16	111.8		22731	375	0.0	0.000	-100000	0.00	111.8	11.3	11.3	31.4
31.50	31500	107	255						2875			1.250	113.0							0.00	113.0	5.5	5.5	31.5
31.63	31625	113	255						2875			0.0100	114.3							0.00	114.3	0.8	0.8	31.6
31.75	31750	117	255						2875			0.0160	115.5							0.00	115.5	-2.0	2.0	31.8
31.88	31875	116	255						2875				116.8							0.00	116.8	0.3	0.3	31.9
32.00	32000	113	255						2875				118.0							0.00	118.0	4.5	4.5	32.0
32.13	32125	108	255						2875				119.3							0.00	119.3	10.8	10.8	32.1
32.25	32250	116	255	RoCD	35	E	175		2875				120.5							0.00	120.5	4.0	4.0	32.3
32.38	32375	115	255	Rmin	2875	D	77		2875				121.8							0.00	121.8	6.3	6.3	32.4
32.50	32500	120	255	Vdes	255				2875	32.43	32.36		123.0							0.00	123.0	2.5	2.5	32.5
32.63	32625	125	255	vdes	70.8	Lt	354.2			32.61			124.3		135000	375	265.1	-0.002	-135000	-0.26	124.0	-1.5	1.5	32.6
32.75	32750	130	255	vperm	70.9	ratio	1.001		STR	32.79			125.5		135000	250	390.1	-0.003	-135000	-0.56	124.9	-5.6	5.6	32.8
32.88	32875	132	255	RoCD	35	E	175		STR				126.8	A4147		125	515.1	-0.004	-135000	-0.98	125.8	-6.7	6.7	32.9
33.00	33000	133	255	Rmin	2875	D	77		STR	32.98	33.00	128.0	128.0		640.1	0	Φ	0.005	-135000	-1.52	126.5	-7.0	7.0	33.0
33.13	33125	132	255	Vdes	255	Lt	354.2			33.16		3875	128.1		-1	125	515.1	-0.004	-135000	-0.98	127.1	-5.4	5.4	33.1
33.25	33250	131	255	vdes	70.8				2875	33.34		2.00	128.1		70.8	250	390.1	-0.003	-135000	-0.56	127.6	-3.9	3.9	33.3
33.38	33375	129	255	vperm	70.9	ratio	1.001		2875			31	128.2		22731	375	265.1	-0.002	-135000	-0.26	127.9	-1.6	1.6	33.4
33.50	33500	126	255						2875		33.64	0.065	128.3							0.00	128.3	1.8	1.8	33.5
33.63	33625	125	255						2875			0.0005	128.3							0.00	128.3	2.8	2.8	33.6
33.75	33750	120	255						2875			0.0100	128.4							0.00	128.4	7.9	7.9	33.8

This says that the track alignment has been designed in precise mathematical detail.

HSUK wins every time - 1

HSUK

1. The HSUK network enables direct travel between all principal stations on the network.

   HS2 fails this test. HS2's Y design is a flawed concept because it is not possible to travel on the new high speed line between all cities served. Newcastle to Liverpool?

   HSUK provides **direct links between all regional cities** to avoid the London gravitational attraction;

HSUK wins every time - 2

HSUK

2. HSUK provides direct services from all over the country to 3 of the 5 London airports, Luton, Heathrow and Gatwick and is therefore fully compliant with airports policy. HS2 only provides for a change of trains at Old Oak Common onto Heathrow Express for Heathrow;
3. HSUK has a 4 track spine from London to Killamarsh Jn. just south of Sheffield. HS2 does not and will definitely not have the capacity for all the services needed. HS2 is in no sense future proofed;

HSUK wins every time – 3

HSUK

4. The HS3 proposal fails to link northern cities comprehensively and just adds cost.

   The HSUK trans-Pennine link has been an integral part of the design right from the start.

   HSUK uses the abandoned Woodhead rail corridor to fully connect all the northern cities and Manchester airport and meet the timings required by One North. HS3 fails this test.

   HSUK passes and also offers an M1 to M60 HGV Shuttle Service;

HSUK wins every time - 4

HSUK

5. HSUK is able to use existing city centre stations providing easy connections to local rail services. HS2 does not and passengers have to walk;
6. HSUK network is designed to structured principles. **HS2 is simply not a network;**
7. HSUK timetable developed. HS2 – none;
8. HSUK has a freight strategy. HS2 – none.

HSUK wins every time - 5

HSUK

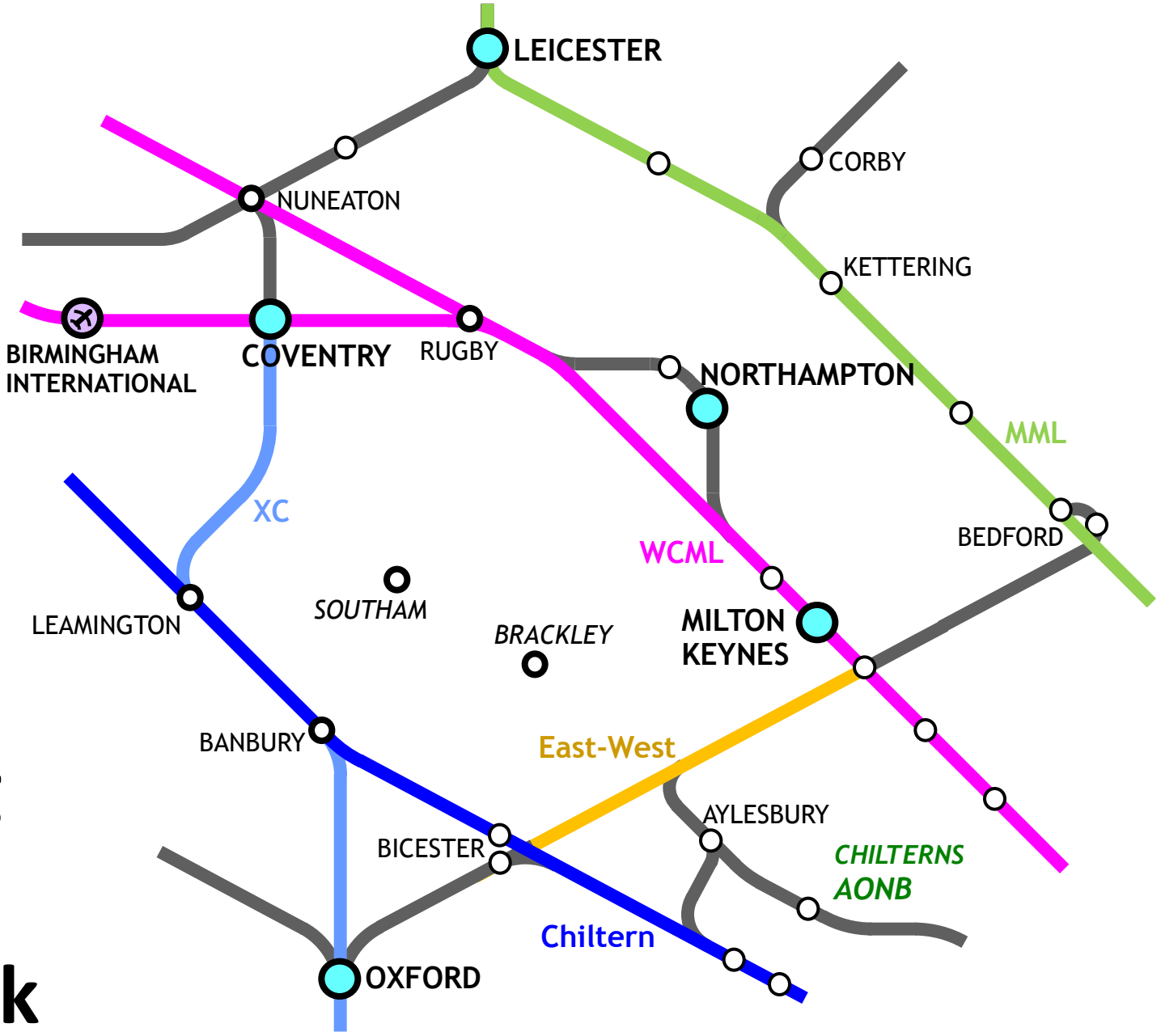
9. HSUK has undertaken outline carbon accountancy to identify potential CO_2 reductions. HSUK reckons to save 500Mt of CO_2 over 40 years HS2 is “Carbon Neutral”;
10. HSUK avoids the Chilterns AONB by following the M1. HS2? Least said the better;
11. HSUK achieves a link to HS1 link for £500,000. Yes half a million £. HS2 said a link would cost over £700M and scrapped the idea. They failed their remit in the process.

HSUK Products

HSUK

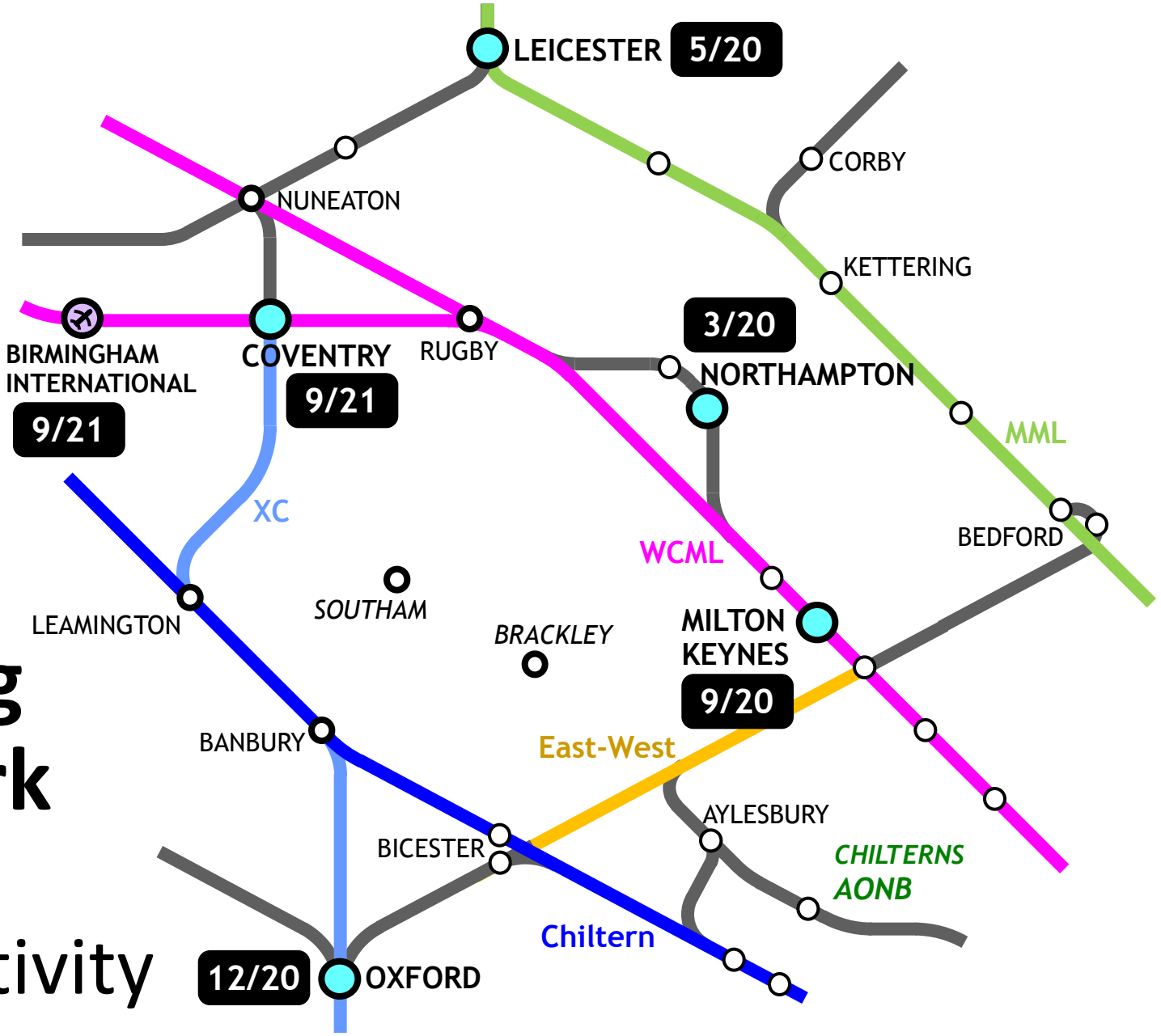
1. Network design principles established by Colin Elliff;
2. Route designed to 1:25k scale, horizontally & vertically;
3. Complementary 1:200k mapping;
4. Timetable developed showing:
   a) Approx. 45% average journey time reductions;
   b) Capacity requirements for national network;
   c) Basic feasibility of full integration.
5. City centre stations mapped for all major cities;
6. Regional integration strategies;
7. Rigorous capital cost comparisons with HS2;
8. Outline carbon accountancy (Alan Brooke);
9. Audit trail on HS2 process (High Speed to Failure);
10. Comprehensive responses to HS2 consultations;
11. Complementary aviation strategy;
12. Complementary freight strategy.

Existing Local Network

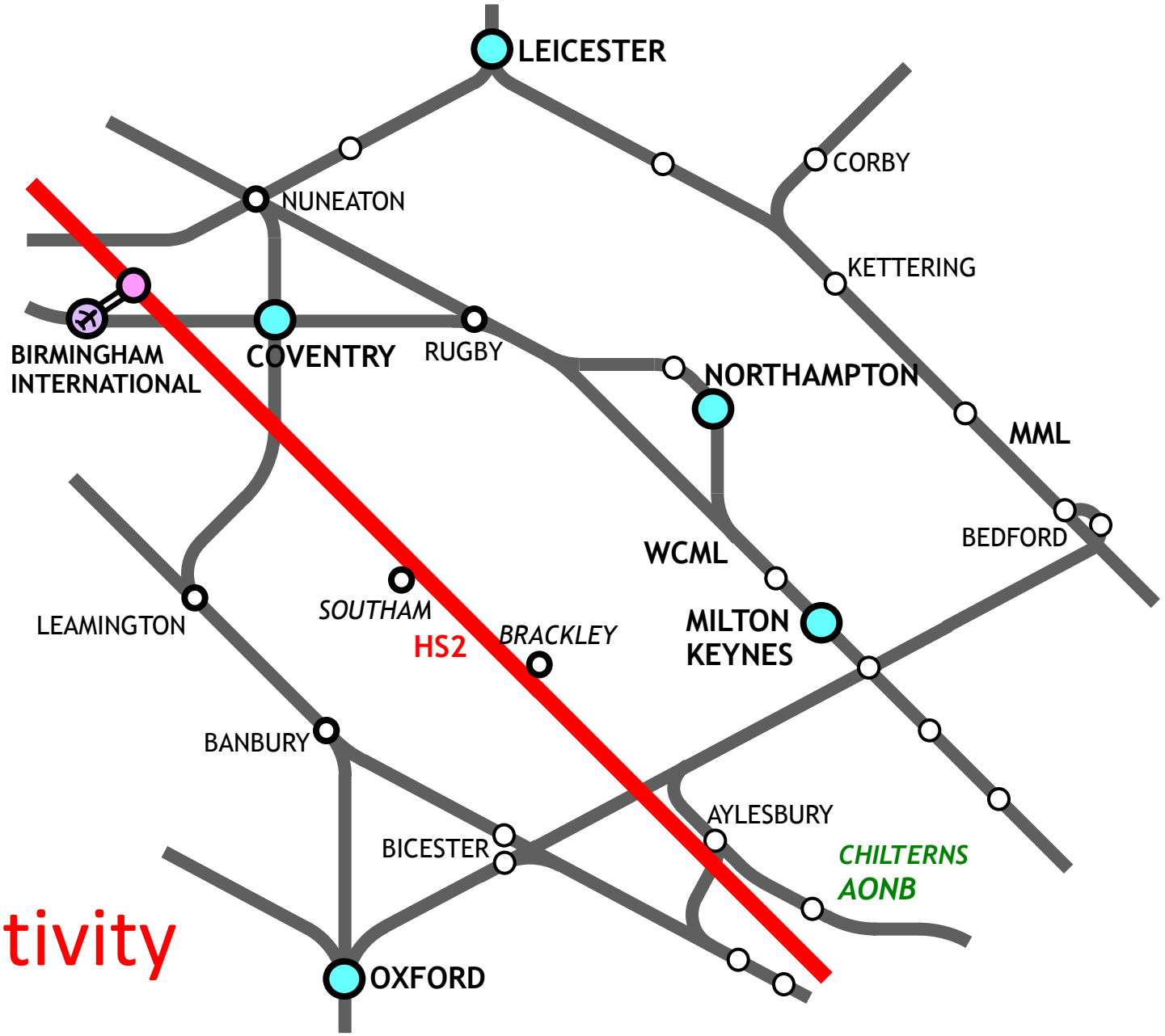


Existing network

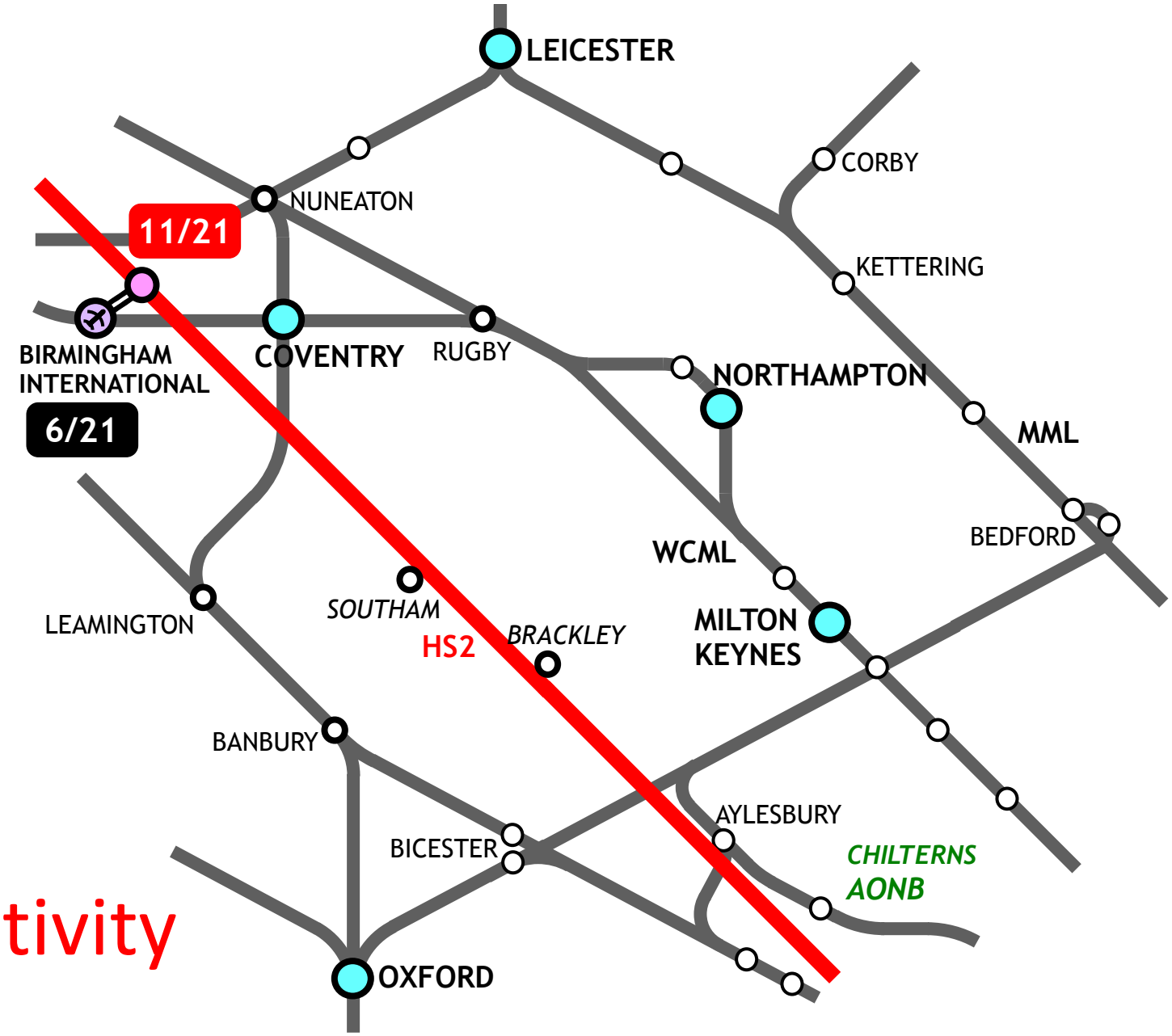
Local Connectivity



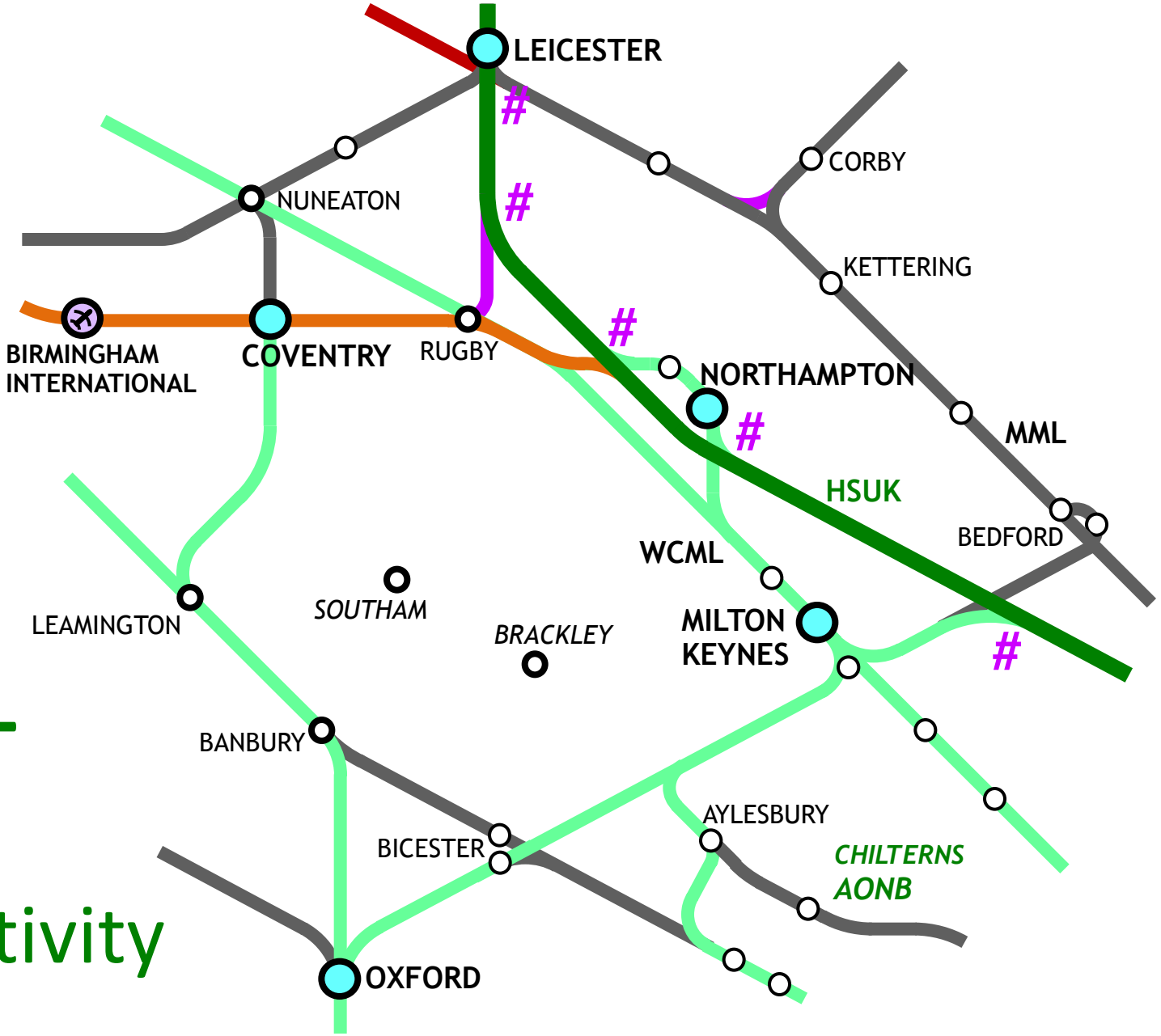
HS2 – Local Connectivity



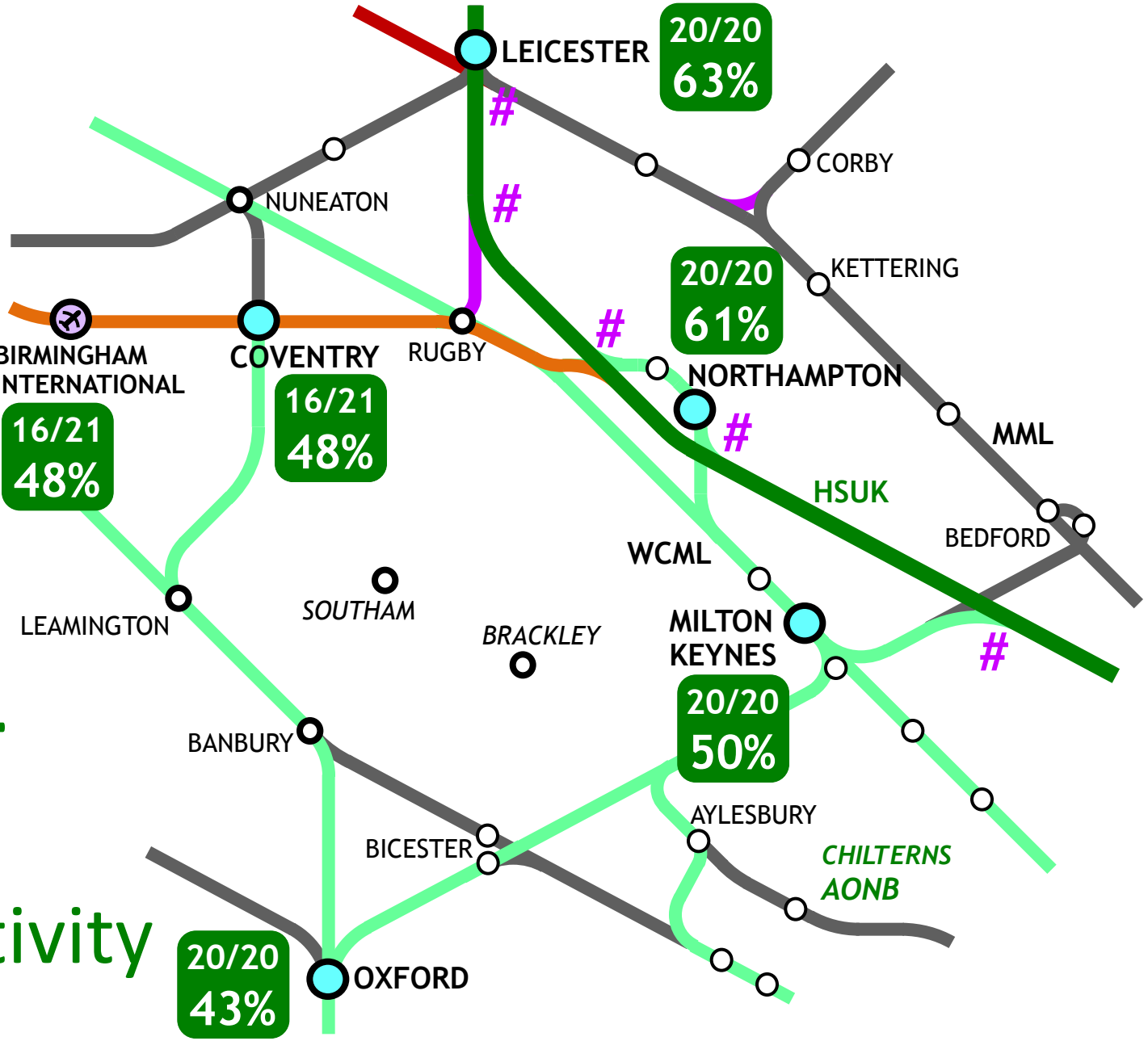
HS2 – Local Connectivity



HSUK – Local Connectivity



HSUK – Local Connectivity



528 Journeys Compared - 1 HSUK

- We looked at every possible journey between 33 places to start from and the same 33 places as destinations. Discounting the return journey in every case, there are 528 possible different journeys;
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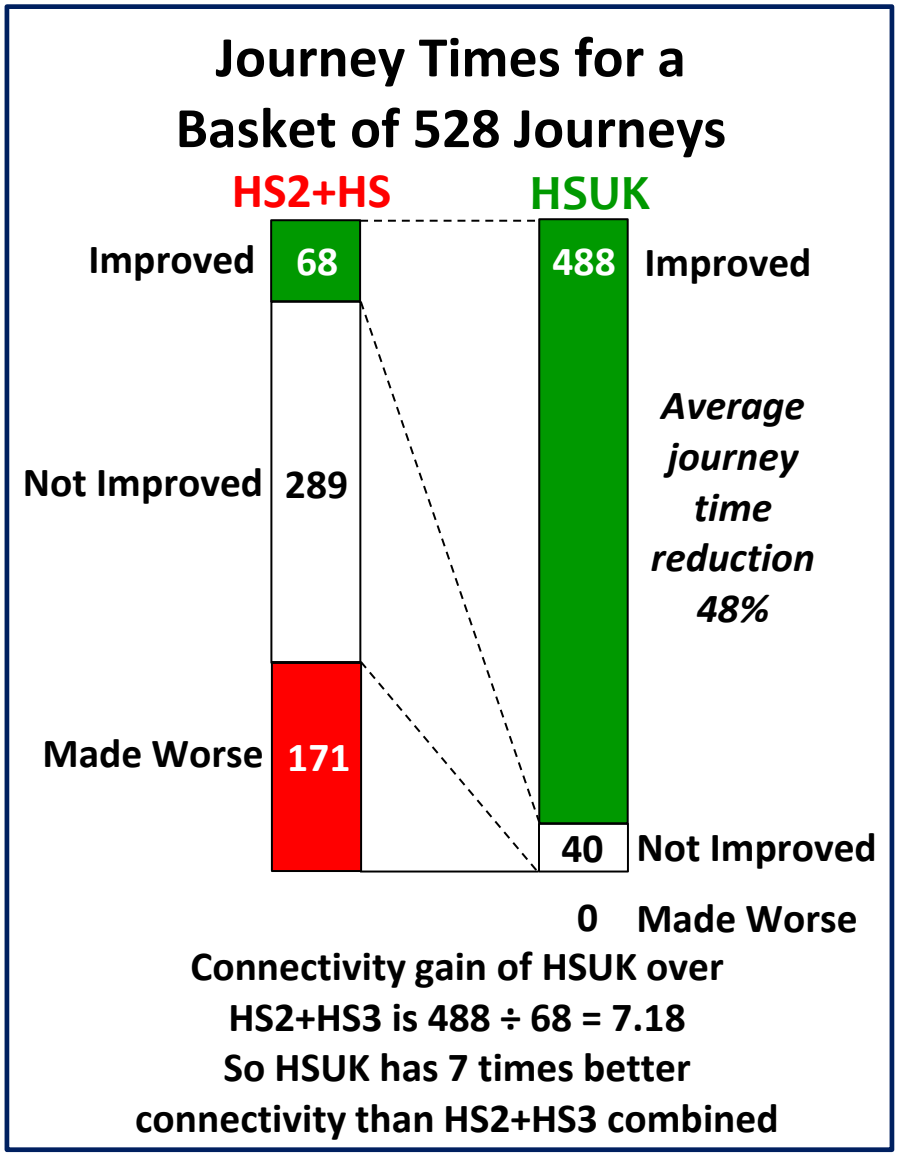
528 Journeys Compared - 2 HSUK

That is a startling difference. Why is our Government proposing to spend even £1 on a project which does so much harm to existing services and speeds up so few?



528 Journeys Compared - 3 HSUK

- The KPMG report "HS2 Regional Economic Impacts" in table 23 on page 91 identifies fewer and slower services on existing main lines after HS2 opens. This explains why HS2 will make **171** journeys worse than today;
- **HSUK makes no journeys worse;**

✵ ✵ ✵ ✵ ✵ ✵ ✵ ✵

- HS2's shortened journey times are largely confined to journeys on the high speed lines;
- HSUK's frequent connections (55) with the existing network allow all of the 488 improved journeys to have an average journey time reduction of >45%;
- On HSUK two thirds of the 528 journeys will be possible without changing trains compared with one third at present.

Journey Times Compared - 1 HSUK

- It has been said that the spine and spur configuration and the 360km/h top speed of HSUK will result in longer journey times;
- We tested this by calculating the journey times from London, Birmingham, Manchester and Leeds to 11 places, namely London, Birmingham, Manchester, Leeds, plus Nottingham, Sheffield, Liverpool, Newcastle, Edinburgh, Glasgow and Heathrow. We felt that this was a broad enough sweep of places to make a fair comparison.

Journey Times Compared - 2 HSUK

	LONDON		HSUK mins. better/ worse	BIRMINGHAM		HSUK mins. better/ worse	MANCHESTER		HSUK mins. better/ worse	LEEDS		HSUK mins. better/ worse
	HS2	HSUK		HS2	HSUK		HS2	HSUK		HS2	HSUK	
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Glasgow	142	144	-2	162	172	-10	136	136	0	***269***	100	169
Heathrow	-----	-----	-----	97	90	7	108	99	9	124	98	26

All figures are journey times in minutes

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For 1 journey HS2 and HSUK times are the same

For 6 journeys HS2 is quicker than HSUK by an average of 6.5 minutes

For 26 journeys HSUK is quicker than HS2 by an average of 31 minutes

Cost - HSUK vs HS2+3

HSUK

- We understand the cost of HS2 to be roundly £50B and that HS3 will add at least £10 B more;
- So we have taken £60B as the cost of HS2+3;
- We turned the HS2 figures into unit rates and so estimate HSUK to cost £40B;
- **That is £20 B cheaper;**
- HSUK is cheaper (to do the same job) for 3 principal reasons:
  - HSUK follows existing transport corridors and generally less severe topography on the eastern side of the UK;

    This makes construction easier and more accessible and therefore cheaper;
  - The HSUK new build route is 200km shorter than HS2;
  - HSUK requires 100km less tunnel than HS2;

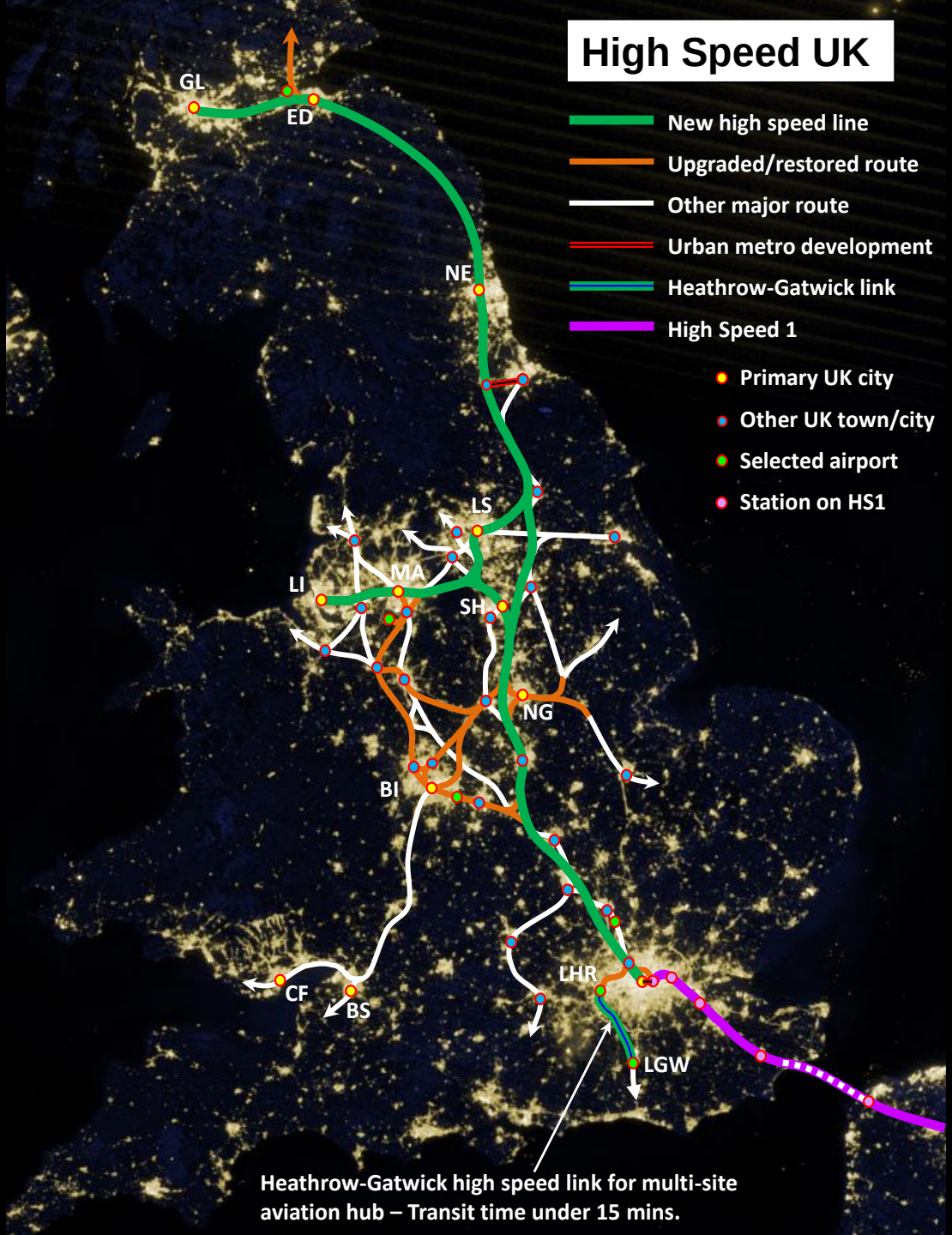
BCR - HSUK vs HS2+3

HSUK

- If we assume that the BCR for HS2+3 is 2.3 and the Cost is £60B then the net Benefit is £138B;
- Reduce the cost to £40B and keep the same Benefit then the minimum BCR for HSUK is 3.45;
- Assume that the Benefit actually rises by 50% then the HSUK BCR rises to 5.18;
- Assume that the Benefit rises by 150% (we believe this is credible) then the HSUK BCR rises to 8.63;

This is all based on the validity, or otherwise, of the HS2+3 BCR of 2.3.

Reproduced from HS2 presentation Oct 2013


High Speed UK
New high speed line
Upgraded/restored route
Other major route
Urban metro development
Heathrow-Gatwick link
High Speed 1
Primary UK city
Other UK town/city
Selected airport
Station on HS1
HSUK
GL
ED
NE
LS
LI
MA
SH
NG
BI
CF
BS
LHR
LGW
Heathrow-Gatwick high speed link for multi-site aviation hub – Transit time under 15 mins.

HSUK – Where Next - 1?

HSUK

1. We were going to go for a proper press launch as soon as we could in the new year and petition parliament;
2. That is a potentially high risk strategy;
   a) If you get 1,000,000+ signatures all well and good
   b) If you can only muster 100 – Disaster!
3. But then a trumpet sounded and a sponsor rode over the hill;
4. Our sponsor has placed a 6 figure contract with a PR company to promote the HSUK scheme;

HSUK – Where Next - 2?

HSUK

- Our existing web site had been visited by 55,284 people as at 23:26 last night;
- We have a new, much improved web site arriving (soon – 4 weeks);
- We are about to start filming a video;
- Our agents will be arranging a major press launch shortly after the new web site goes live;
- This is designed to take our minds off BREXIT!!
- Seriously, the battle is about to begin;
- **The battle will be fought on social media;**
- Apart from Pete Waterman and Andrew McNaughton , QM has never met anyone who thinks that HS2 is a good idea or value for money.

HSUK – Where Next - 3?

HSUK

- HL Paper 134 Para 222. "Lord Adonis, however, suggested that the proposed route up the M1 would be more controversial than HS2: "The idea that building next to existing transport corridors—which would also include having to significantly widen transport routes through major towns and cities—would be less controversial than building HS2 is for the birds." He argued that such a route would be more expensive than HS2";
- This is the most complete nonsense we have ever heard from a former SoS. Has he never driven up the M1 with his eyes open? There is almost nothing next to it!!
- How can he be trusted with the NIC? He is a historian!!
- We have a complete design and we invite MP's of all colours to inspect it and at the same time invite Lord Adonis to 'fall on his sword' for misleading the House of Lord Economics Affairs Select Committee so badly;
- We are happy to show everyone here today the route and the design;
- There is much to do in the next few weeks as their Lordships get into gear.

HSUK

HIGH SPEED UK

Investing Responsibly in High Speed Rail

Why is Government proposing to spend even £1 on HS2 which speeds up so few journeys and does so much harm to existing services and the environment?

END

Colin

Colin

Colin

Colin

Colin

Colin

Quentin

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Quentin

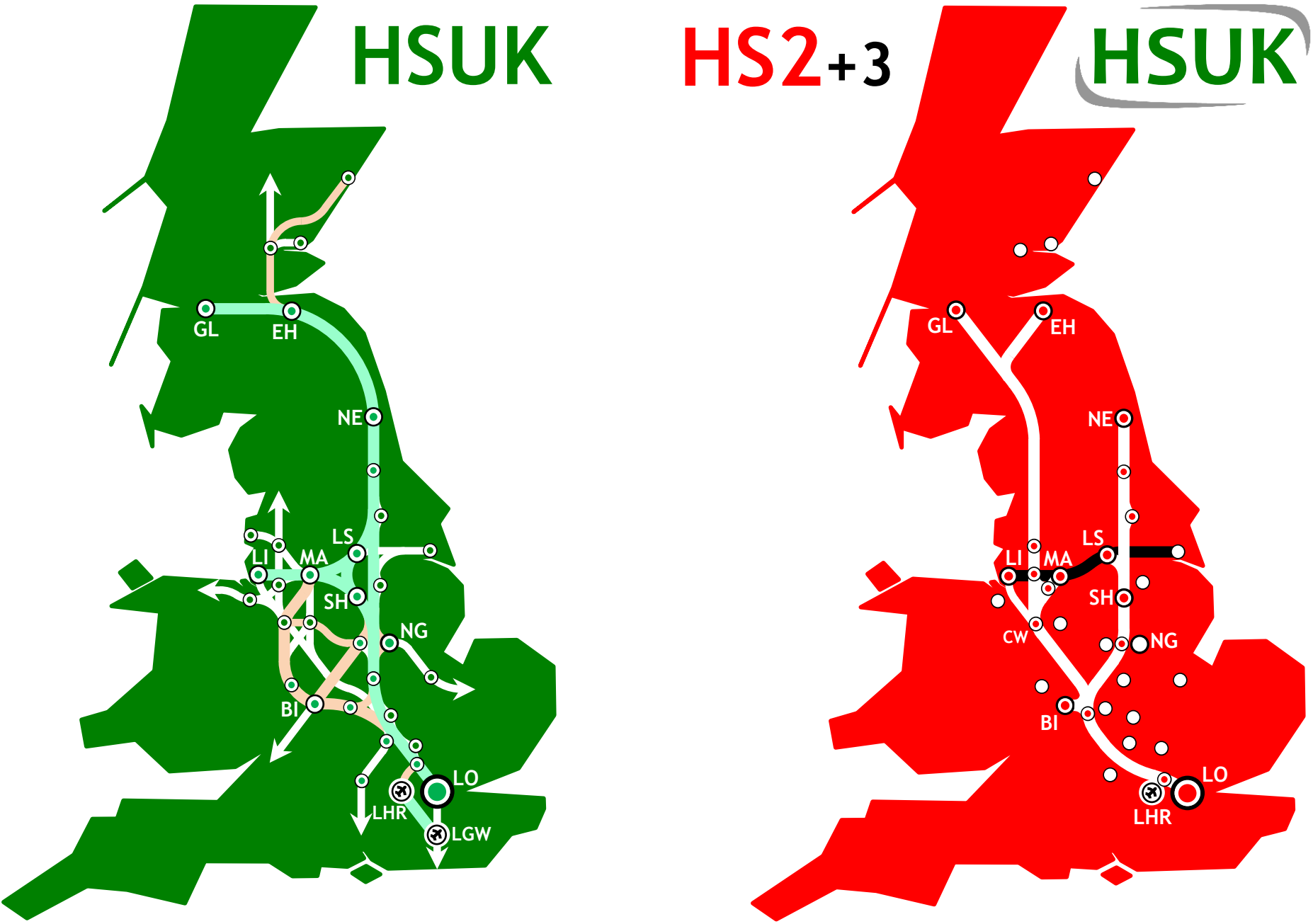
Connectivity Compared - 1

HSUK

- HS2's Y design is a flawed concept because it is not possible to travel on the new high speed line between all cities served
- HSUK provides **direct links between all regional cities** to avoid the London gravitational attraction

❋❋❋❋❋❋❋❋

- The HS3 proposal fails to link northern cities comprehensively and just adds cost
- The HSUK trans-Pennine link has been an integral part of the design right from the start
- It uses the abandoned Woodhead rail corridor to fully connect all the northern cities and Manchester airport


HSUK
GL
EH
NE
LS
LI
MA
SH
NG
BI
LO
LHR
LGW
HS2+3
HSUK
GL
EH
NE
LS
LI
MA
SH
CW
NG
BI
LO
LHR

Connectivity Compared - 2 HSUK

- HS2 has no effective integration with the existing network linking only 4 times. Effect of HS3 not known
- HSUK links at 55 places allowing high speed services to call at existing intercity stations where one can connect with local services unlike HS2

❋❋❋❋❋❋❋❋

- HS2 serves 3 new terminus stations which are operationally very inconvenient, 4 out-of-town parkway stations which are inconvenient for users, plus Old Oak Common and an expanded Euston
- HSUK uses existing city centre stations everywhere plus a reopened Sheffield Victoria station
- HSUK uses standard UK loading gauge trains

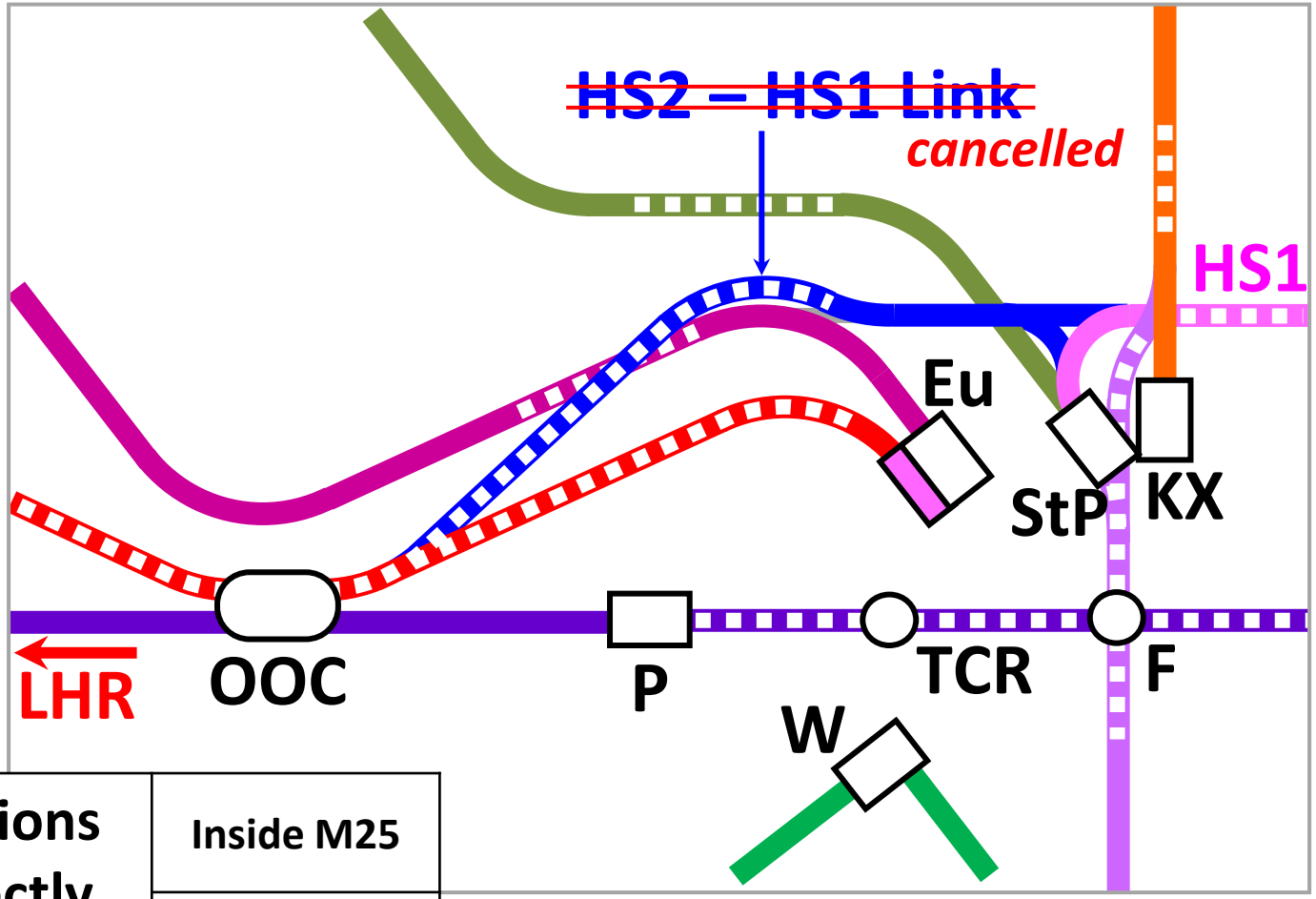
Connectivity Compared - 3 HSUK

- A connection to HS1 was in the HS2 remit from the start
- It was dropped recently as it cost £700M and would badly damage Camden Market
- The UK will not join the Schengen area soon
- Border controls will be needed at St Pancras
- HSUK can connect directly with the international platforms at St Pancras and hence to HS1
- The required changes to the rail infrastructure will cost less than £500,000 and will be confined within the existing railway boundary

Old Oak Common & HS2-HS1 Link

HSUK

Proposed primary London network with **HS2**

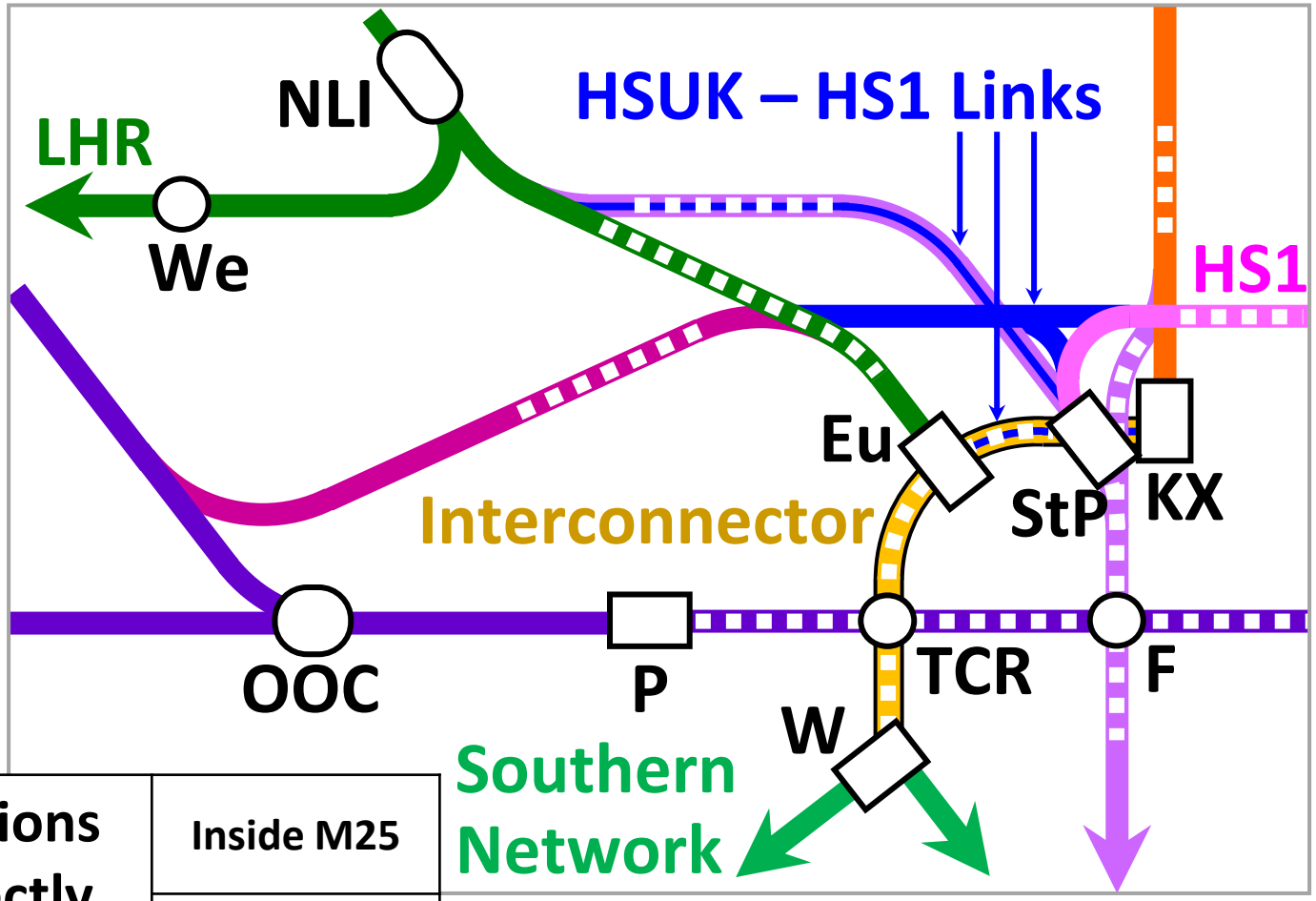


175	Stations directly connected	Inside M25
188		Outside M25

Old Oak Common & HSUK-HS1 Link

HSUK

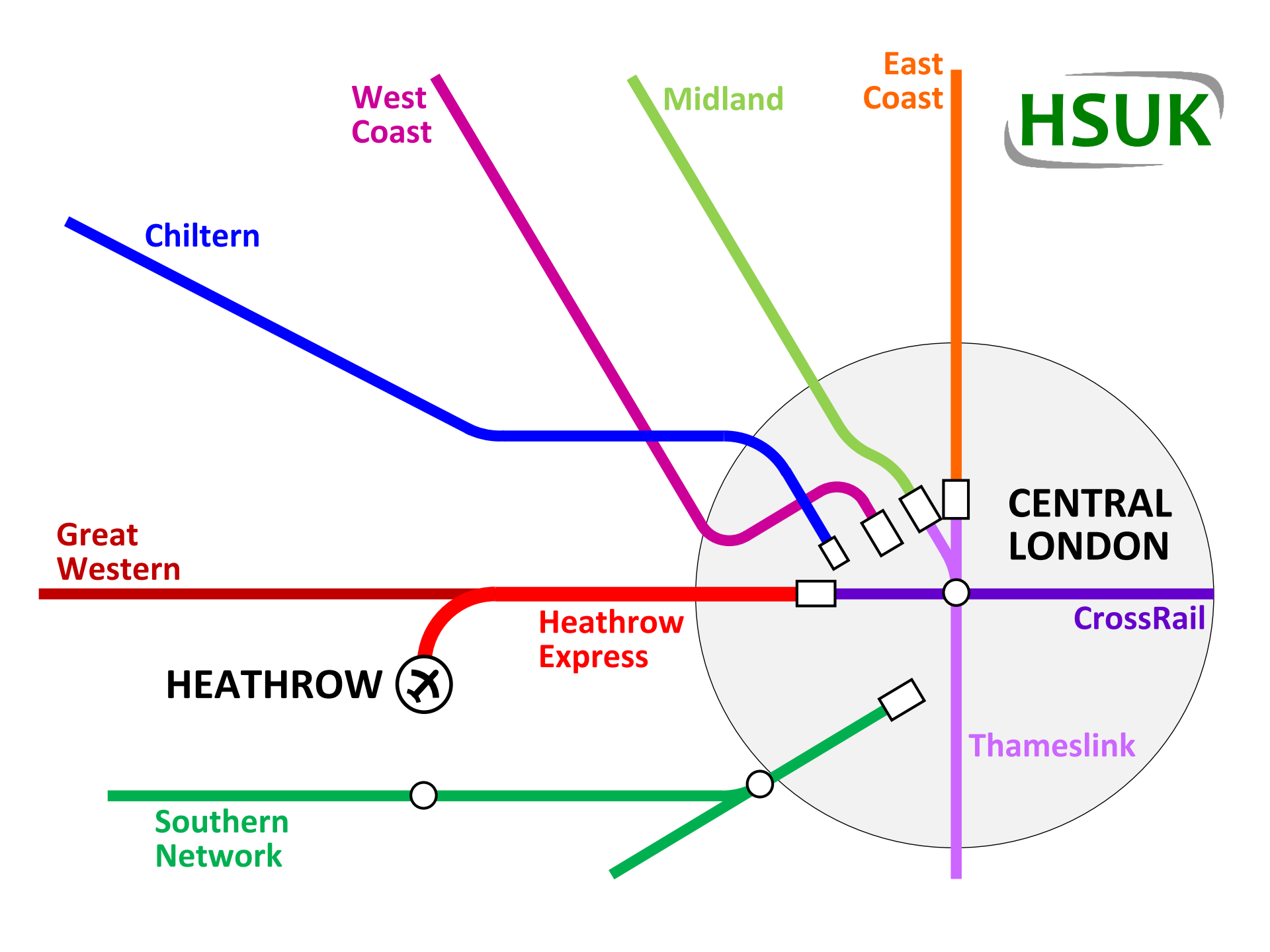
Proposed primary London network with **High Speed UK**

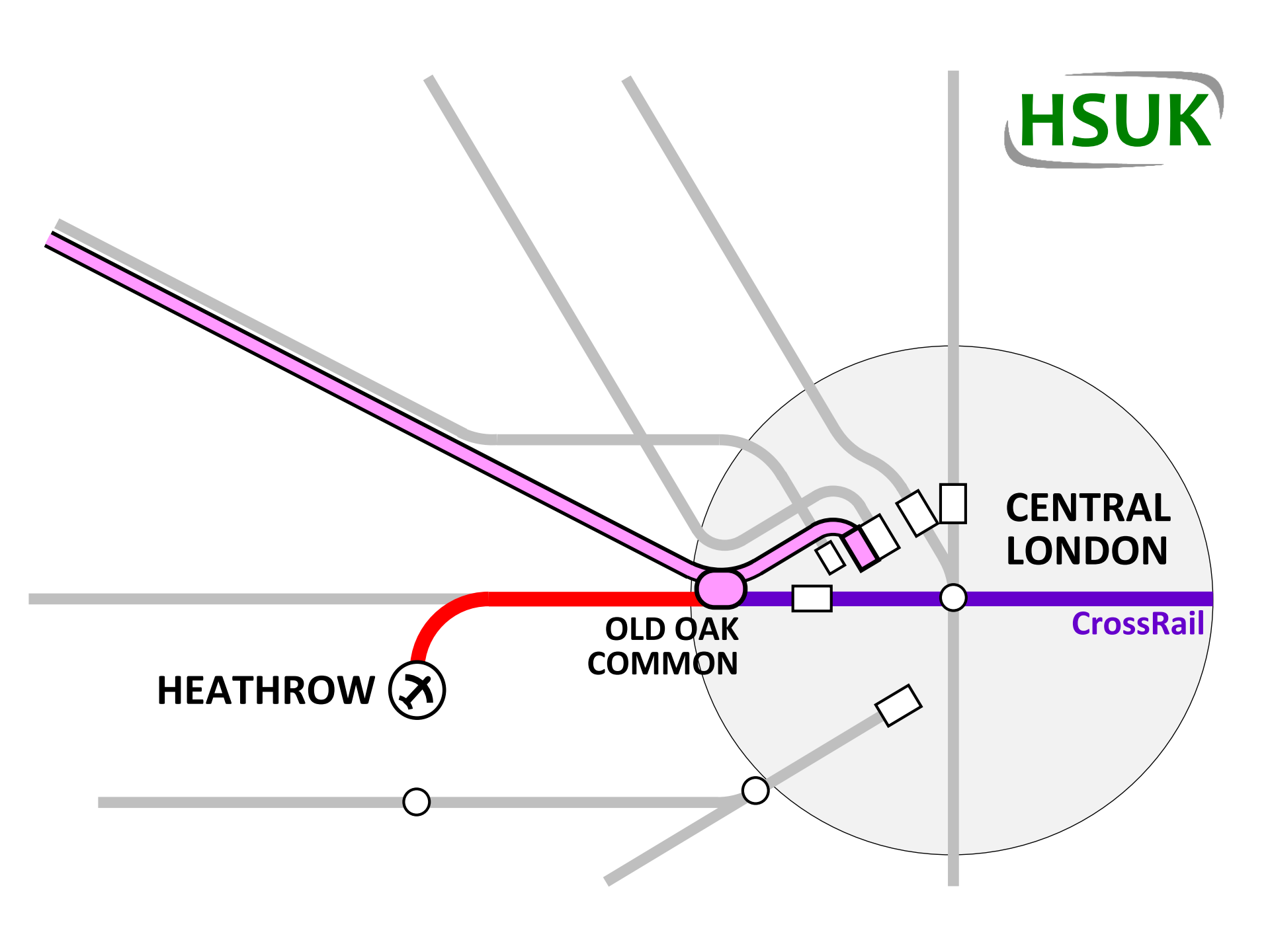


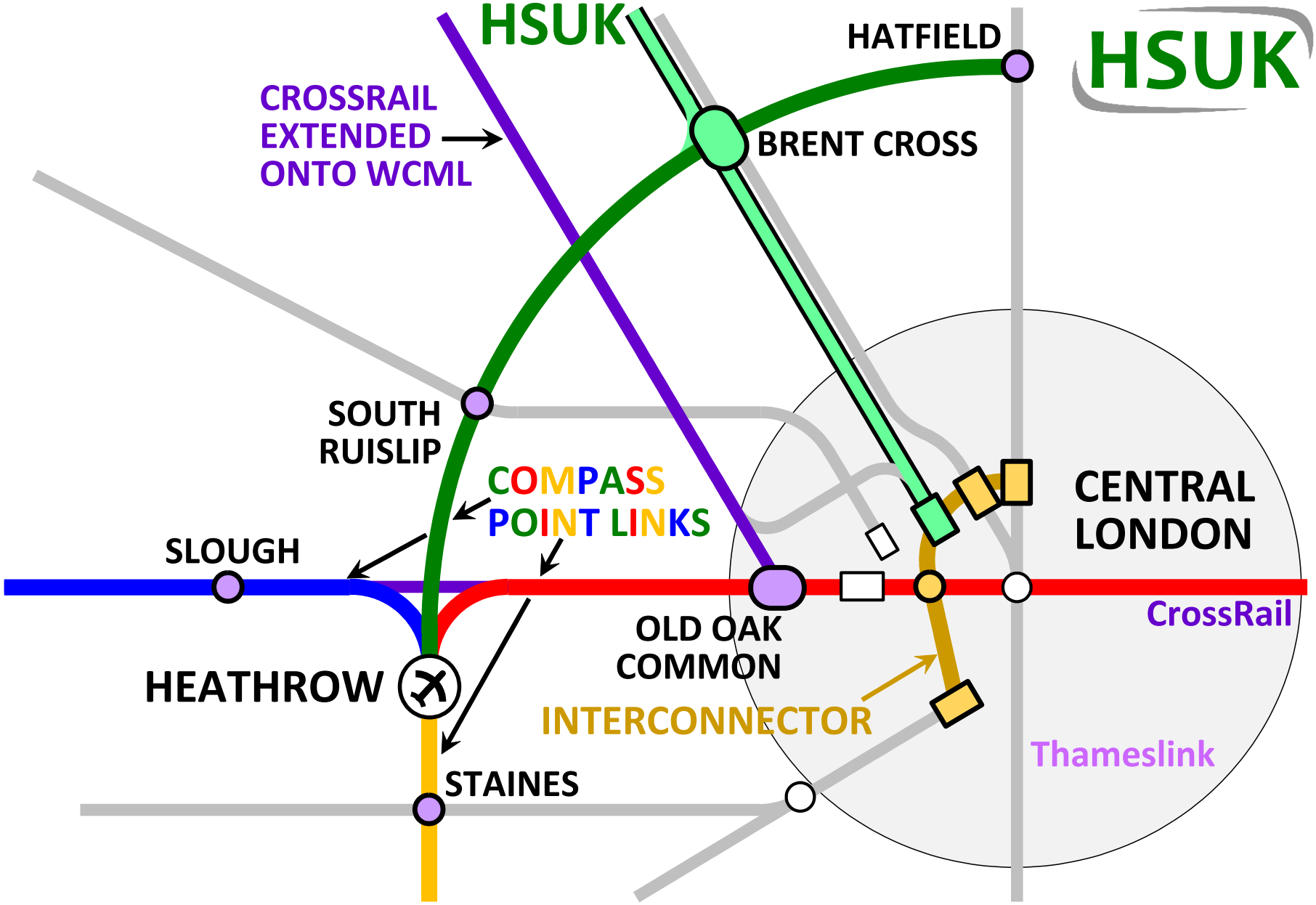
395	Stations directly connected	Inside M25
594		Outside M25

Connectivity Compared - 4 HSUK

- Improved access to Heathrow is essential for regional growth
- HS2 can only offer a change of trains at Old Oak Common
- No proposals have ever emerged for a direct HS2 route to Heathrow
- HS2's desire to serve Heathrow makes intrusion into Chilterns inevitable and dictates London-centric Y-configuration of HS2
- HSUK proposes independent development of Heathrow Express into 'Compass Point' system, extending to east, south, west & north – Submitted to Airports' Commission
- Northern arm will intersect with HSUK spine at Brent Cross
- HSUK offers direct services to Heathrow's terminals from all primary regional cities and many other locations


West Coast
Midland
East Coast
HSUK
Chiltern
CENTRAL LONDON
Great Western
Heathrow Express
CrossRail
HEATHROW
Thameslink
Southern Network


HSUK
CENTRAL
LONDON
CrossRail
OLD OAK
COMMON
HEATHROW


HSUK
HATFIELD
HSUK
CROSSRAIL
EXTENDED
ONTO WCML
BRENT CROSS
SOUTH
RUISLIP
COMPASS
POINT LINKS
CENTRAL
LONDON
SLOUGH
CrossRail
OLD OAK
COMMON
HEATHROW
INTERCONNECTOR
Thameslink
STAINES

528 Journeys Compared - 1 HSUK

- We looked at every possible journey between 33 places to start from and the same 33 places as destinations. Discounting the return journey in every case, there are 528 possible different journeys.
- The places selected were: Aberdeen, **Birmingham**, Bradford, Chester, Coventry, **Darlington**, Derby, Doncaster, **Edinburgh**, **Glasgow**, Heathrow, Huddersfield, Hull, **Leeds**, Leicester, **Liverpool**, **London**, Luton, **Manchester**, Milton Keynes, **Newcastle**, Northampton, Nottingham, Oxford, Perth, Peterborough, **Preston**, **Sheffield**, Stoke, Walsall, **Warrington**, Wolverhampton and **York**.
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528 Journeys Compared - 2 HSUK

Basket of 528 Inter-City Journeys

	Services Improved	Not Improved	Made Worse	Total	Cost £B
HS2	49	306	173	528	50
HS3	+19	-17	-2		+10
HS2+HS3	68	289	171	528	60
HSUK	488	40	0	528	40
				Saving	20

Connectivity

HSUK vs HS2 = 488/49 = 10 times better

HSUK vs HS2 + HS3 = 488/68 = 7 times better

That is a startling difference. Why is Government proposing to spend even £1 on a project which does so much harm to existing services and speeds up so few?

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Capacity Compared - 1

HSUK

- A single track equipped with ERTMS will reliably provide 18 train paths per hour or one train every 3.33 minutes
- This is fewer than the theoretical maximum but in practice a maximum of 18tph is a safe figure to rely on and is used by HS2
- The problem which HS2 faces is that its maximum capacity of 18tph in each direction south of Birmingham is not enough to serve all cities of the Midlands, the North and Scotland currently served by intercity trains
- All HS2's capacity will be used up as soon as the line is fully open
- Once the western arm of the Y is in full use will there even be sufficient capacity for the eastern arm?
- Two busy 2-track railways feeding into one 2-track railway does not make operational sense
- No capacity gains in Regional Cities

HSUK

Reproduced from HS2 presentation Oct 2013

Capacity Compared - 2

HSUK

- We have calculated that 4 tracks are necessary to serve all cities and allow for future growth
- As a result of this calculation HSUK has been provided with a four track London stem going as far as Leicester for the moment
- 4-track railways cost 30% more per km in the open and 100% more per km in tunnel
- 4 tracks are essential future proofing
- Would you really have built the M1 with a single lane in each direction and no interchanges?

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This is all based on the validity, or otherwise, of the HS2+3 BCR of 2.3

Public Policy Compared

HSUK

- We believe that any public investment must conform with current Public Policy

Public Policy	HS2+3	HSUK
Provide Integrated Public Transport		✓
Promote Regional Development		✓
Rebalance the economic North South Divide		✓
Protect the Natural Environment		✓
Reduce CO_2 Emissions		✓
Secure Best Value for Money		✓

- That is our view of the winner in every case and we hope that you agree

HS2 Procedural Issues

HSUK

- Unbalanced remit
- Unverified assumptions
- Biased option selection procedure
- Consultation responses ignored
- Suppression of alternatives
- Suppression of dissenting voices

What we ask your Lordships' Committee to consider

HSUK

- We believe that Government must conduct a far-reaching and independent Inquiry whose terms of reference would include but not be limited to:
  - Establishing whether the claims made by HSUK in its submission to your Lordships about the deficiencies of HS2 and the superiority of HSUK are justified;
  - Establishing the reasons why the HS2 proposals have progressed so far towards legislative powers without adequate technical or procedural scrutiny;
  - Establishing how other apparently superior proposals have been dismissed, without justification;
  - Then, if the HSUK claims are shown to be justified, recommending a strategy to deliver the properly integrated High Speed rail system that the UK needs and deserves.

HIGH SPEED UK

Investing Responsibly in High Speed Rail