HIGH SPEED UK ...connecting the nation

Colin Elliff BSc CEng MICE

Euston... We have a problem...

- David Cameron has challenged HS2 Chief Exec David Higgins to find major cost savings.
- But is **cost** the only problem for HS2?
- Does it actually work as a railway project?
- And will it ever happen?

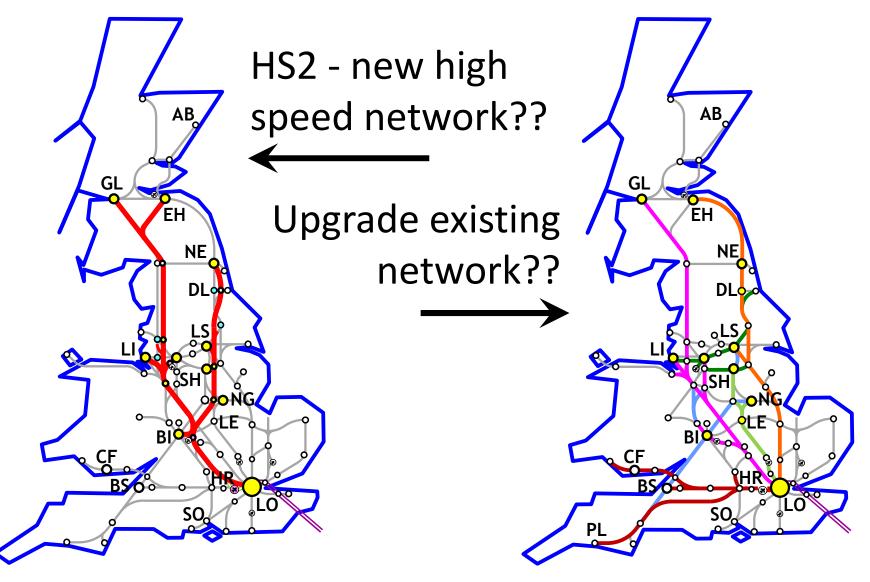
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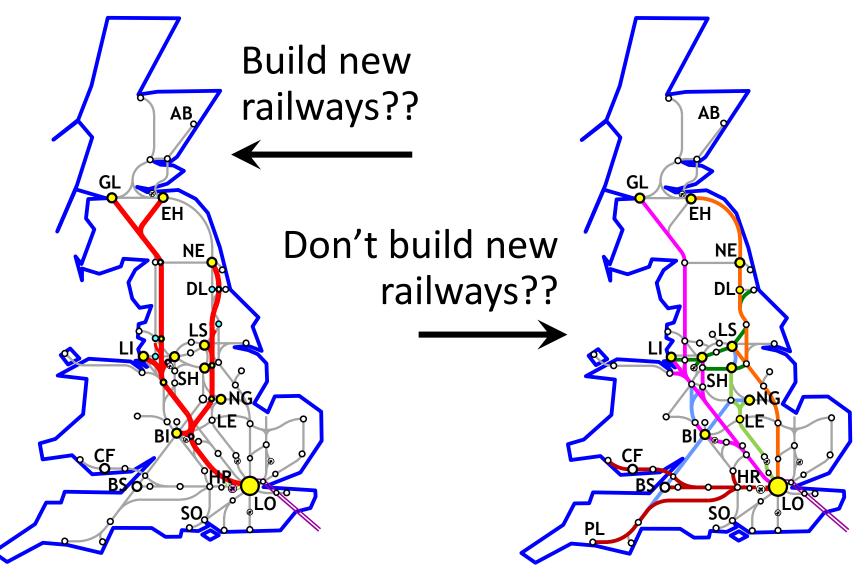
TIMESCALE

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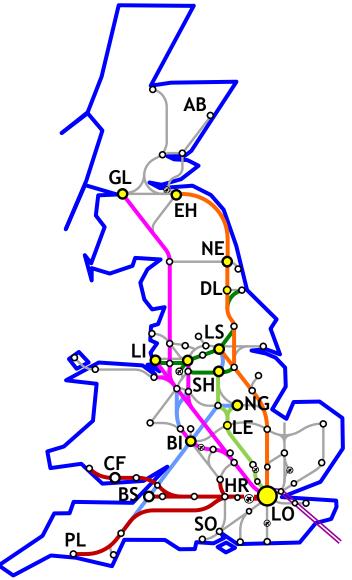
High Speed Rail – a binary choice?



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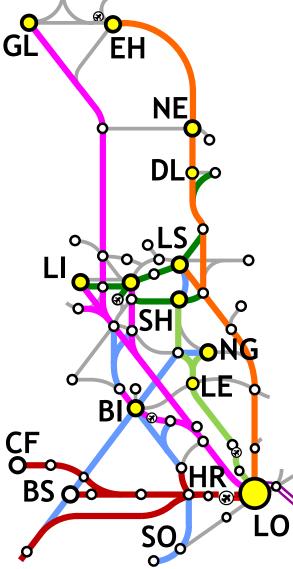
Upgrade Existing Network??



6 Main Lines

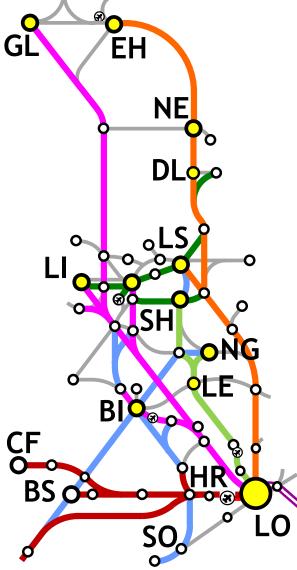
- East Coast
- Midland
- West Coast
- Great Western
- Cross Country
- Transpennine

Upgrade Existing Network??



- Insufficient capacity
- Journeys too slow
- Built to C19 priorities
- Too London-centric interregional links poor
- And it's been tried already

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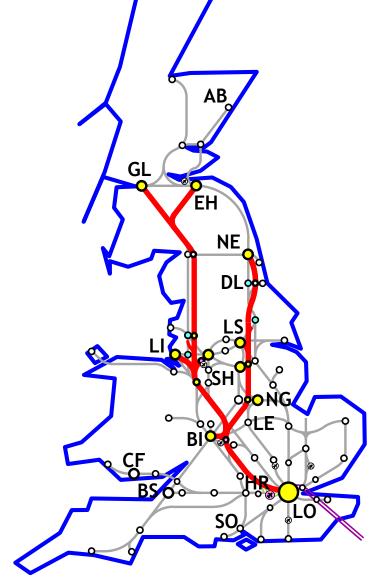
New Lines Are Essential!!

Existing Intercity Network LO London Birmingham BL Nottingham NG **10 Primary Cities** Sheffield SH 528 Links Wanchester MA Liverpool LI > 500,000 Leeds LS **183 Direct** New castle NE 1 Hub Airport, Edinburgh ED 345 Change <mark>Glasgow</mark> GL Heathrow HR no regional O≍ford \odot ΜK Milton Keynes rail links Northampten ΝN C dCoventry Wolverhampton WA, 22 Second Tier Walsall WS Stoke ST Chester СH **Communities** Narrington W A **PR** Preston > 200,000 LU Luton Leicestei LE Derby DE Huddersfield HD Bradford BD PE Peterborouzh DN Doncaster HU Hull YO York Darlington DL Perth PH Aberdeen HR OX MK NN CV WV WS ST CH WA PR LO BI NG SH MA LI LS NE ED GL LU LE DE HD BD PE DN HU YO DL PH

AB

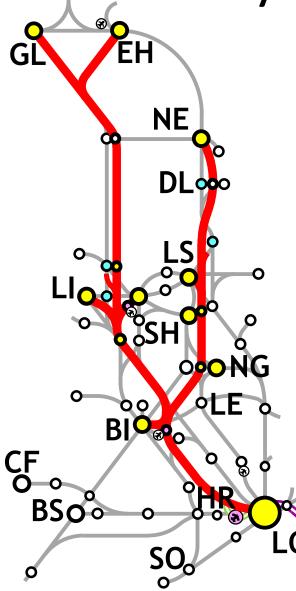
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Why Build the HS2 'Y'??



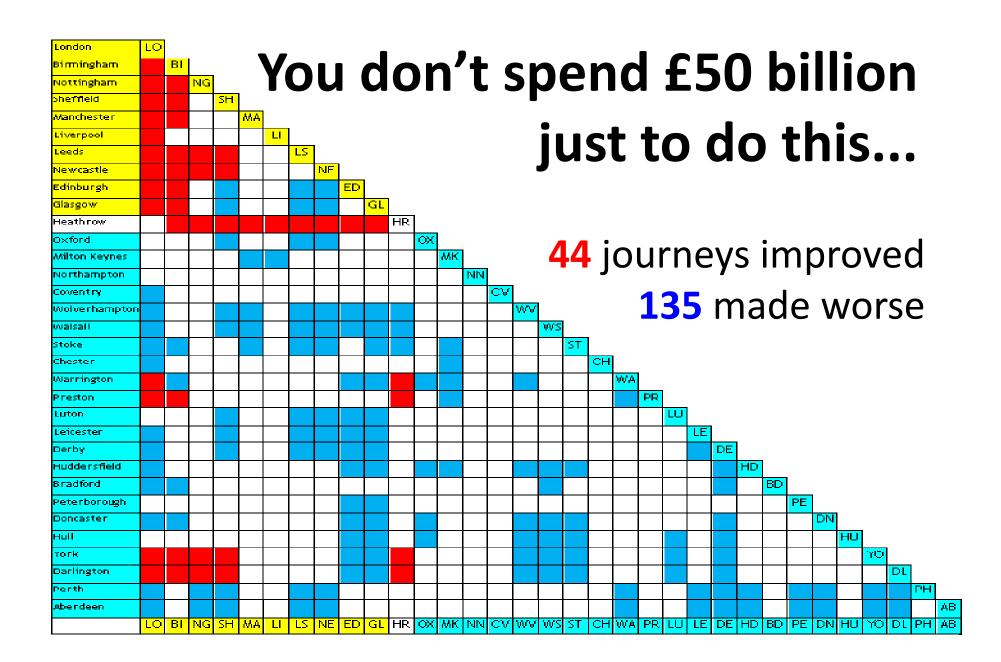
- Y-configuration
- No Transpennine link
- No CrossCountry
- London-centric
- Heathrow-centric

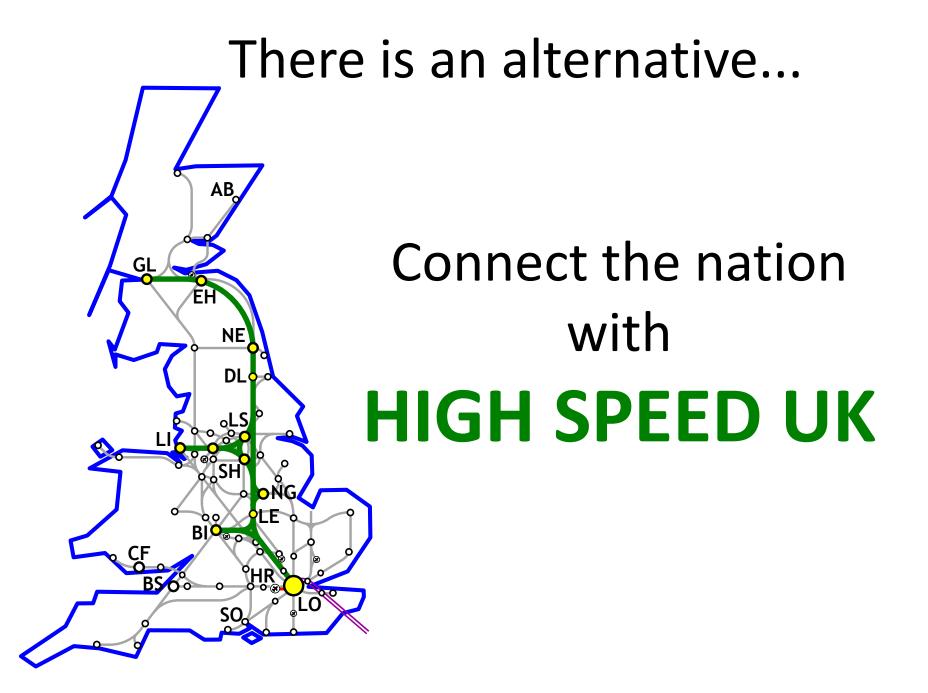
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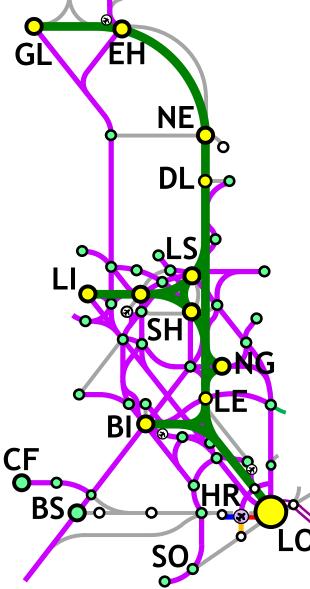
- Designed for 400km/h can't follow existing corridors
- Segregated from existing network – many major cities left isolated
- Only 4 connections to existing network
- Improved links to Heathrow??

HS2 – Gains & Losses London LO BI Birmingham Nottingham. NG **Journey accelerated** sheffield **Capacity gains** Manchester to city centre/ limited by 2-Liverpool LI Leeds parkway station track stem & no NE New castle ED Edinburgh GL Glasgow **Transpennine** — Heathrow HR Heathrow Oxford. rail links not coverage Milton Keynes ٨٨Þ Northampton ΝÞ comprehensive CV, Coventry WW Wolverhampton Slower journey/ waisali WYSStoke ST **lower frequency** Chester WA Warrington Preston \mathbf{PR} **Overall <5%** Luton LU LE Leicester acceleration DE Derby Huddersfield HD Bradford BD PE Peterborough Doncaster DN Hull HU топк YΟ Darlington DL Perth ΡН Aberdeen AB. NG SH MA LI LS NE ED G CH WA PR LU LE DE HD BD PE DN HU YO DL PH HR 🚺 🗙 MK NN CV WV WS ST LO BI AB

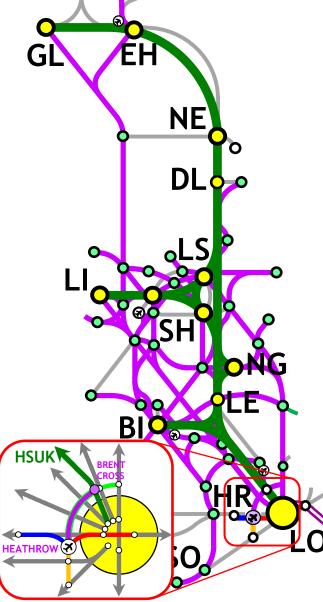




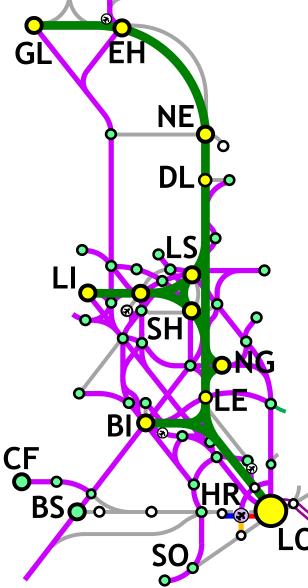
Connect the nation with HSUK GL ΈĤ It's all about the NE network... DLo o Spine & Spur configuration • Integral Transpennine link SH Designed for 360km/h 00 Fully integrated with BI O S CF existing network HR BSoo



- More than 50 connections to existing network
- Accesses all major cities
- Independent 'Compass
 Point' rail access to
 Heathrow
- Overall 40% journey time reductions

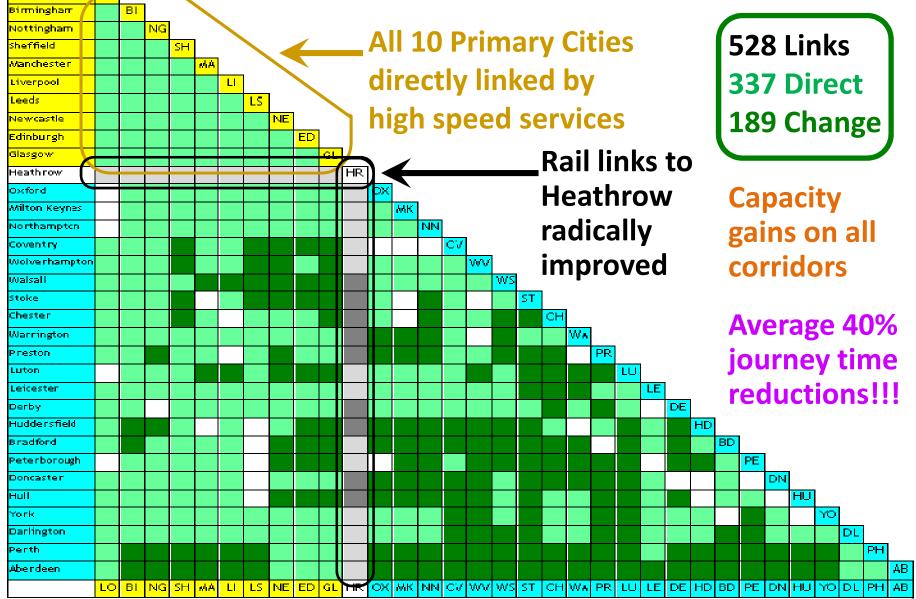


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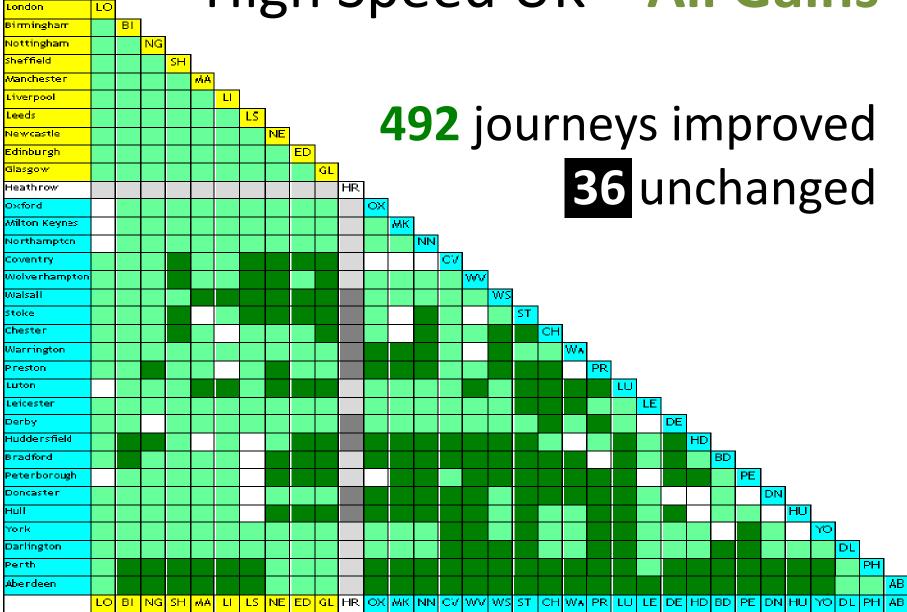
High Speed UK – All Gains



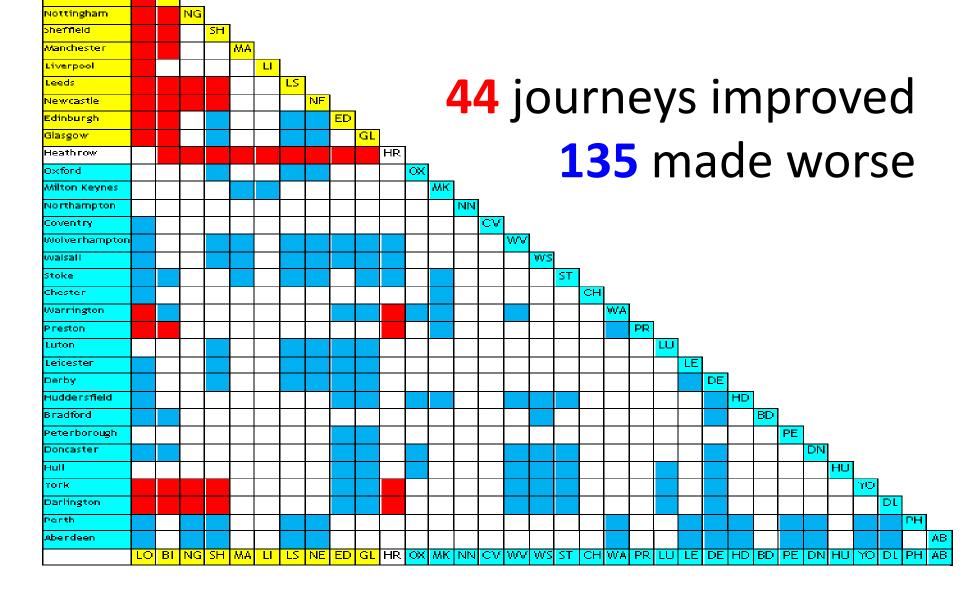
London

10

High Speed UK – All Gains



HS2 – Mostly Losses

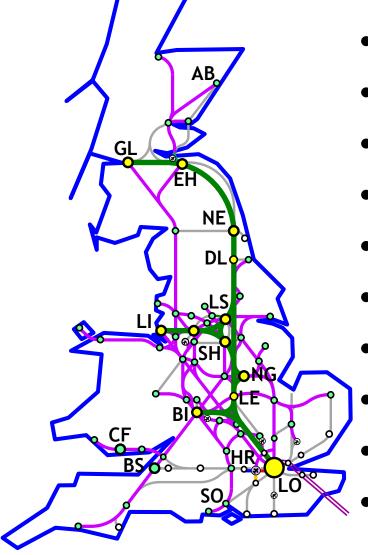


London

Birmingham

LO

BL



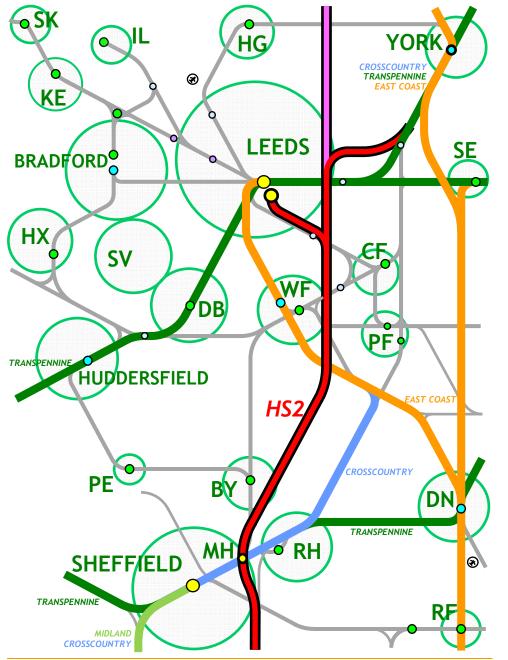
- Designed full length @ 1:25k
- Shorter route, 50% less tunnel
- 25% cheaper than HS2
- Outline timetable developed
- 40% journey time reduction
- Direct HS interregional links
- Direct regional access to H'row
- Regional economic benefit
- CO₂ cuts through modal shift
- Environmental impact minimised

What's Best for Yorkshire?

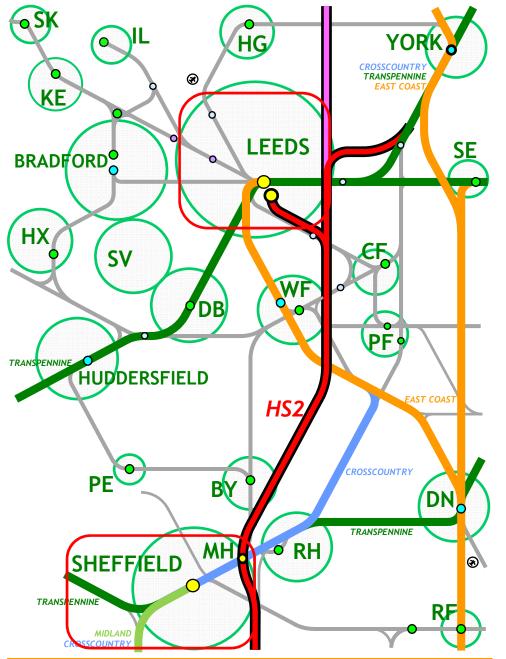
• Segregation and London-centricity as per HS2?

or

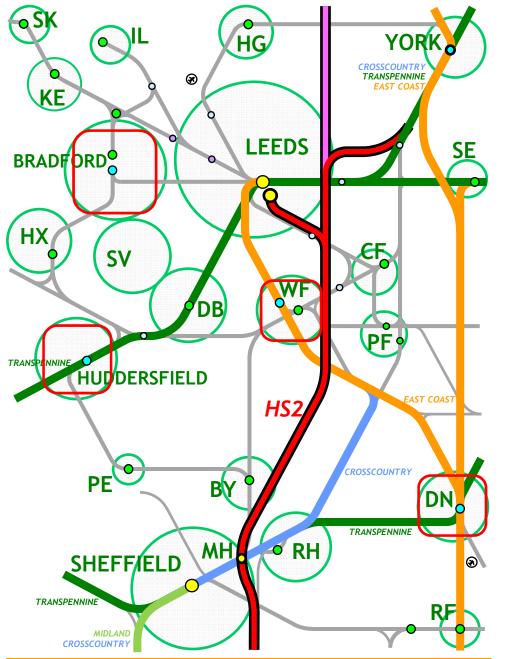
 Integration and Interregional Connectivity as per High Speed UK?



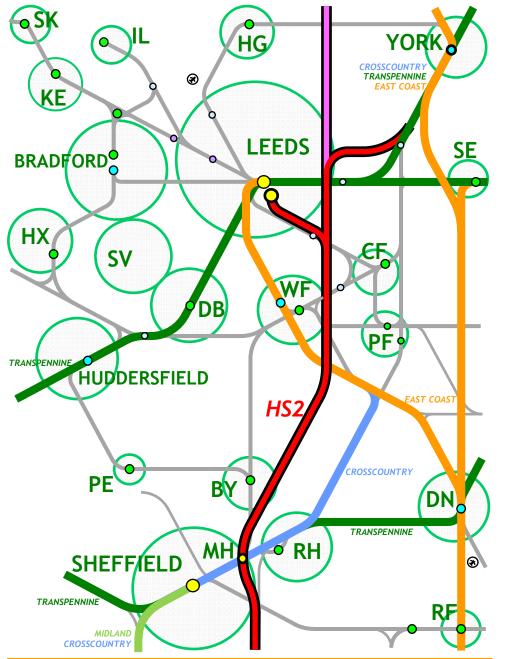
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- Bradford, Wakefield, Doncaster & Huddersfield etc all isolated
- Main line services reduced
- Overall loss in connectivity
- No Transpennine link



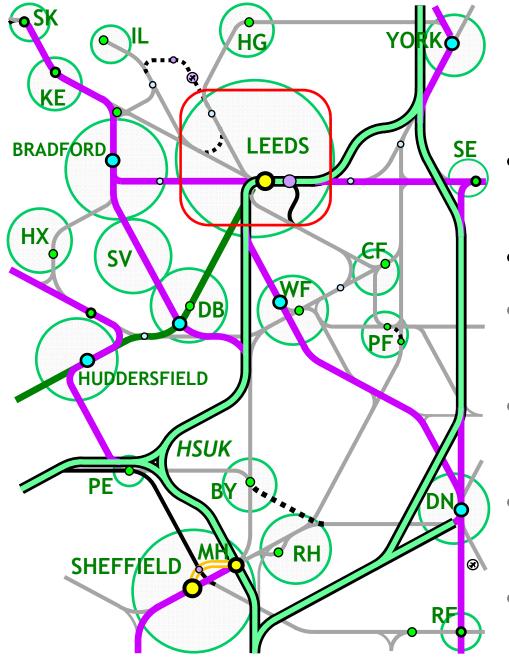
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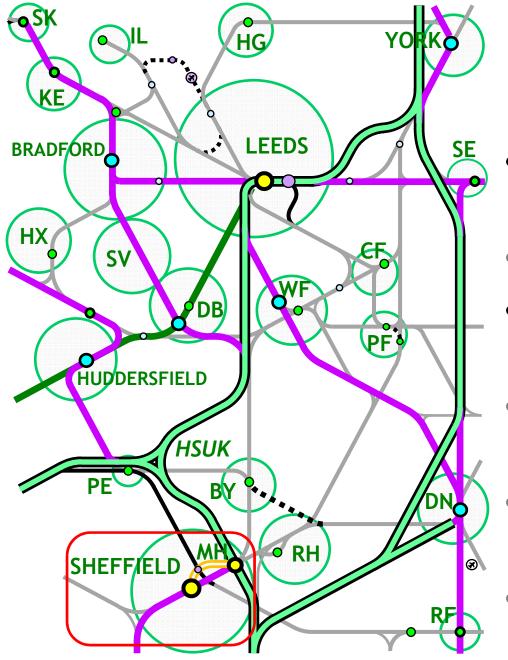
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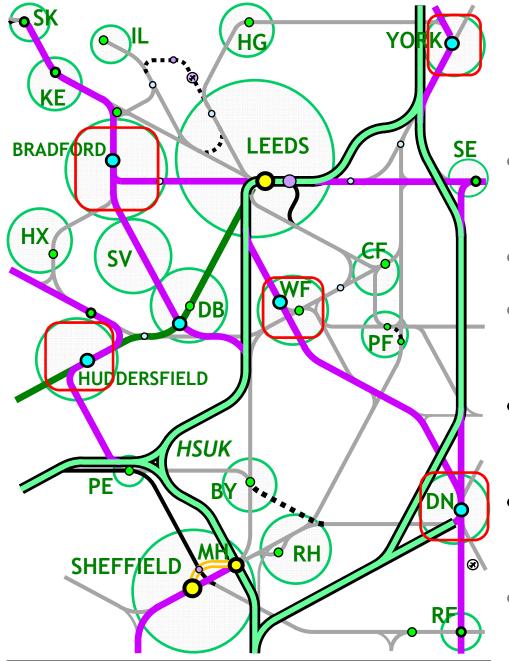
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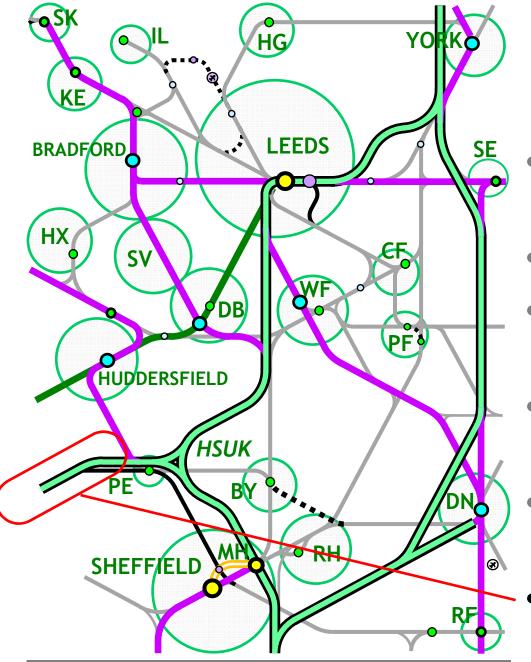
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- Leeds City Station
- Sheffield Midland/ Meadowhall
- HSUK extends to all second-tier centres
- Doncaster, Wakefield, York, Bradford, Hudd.
- Transpennine link via Woodhead



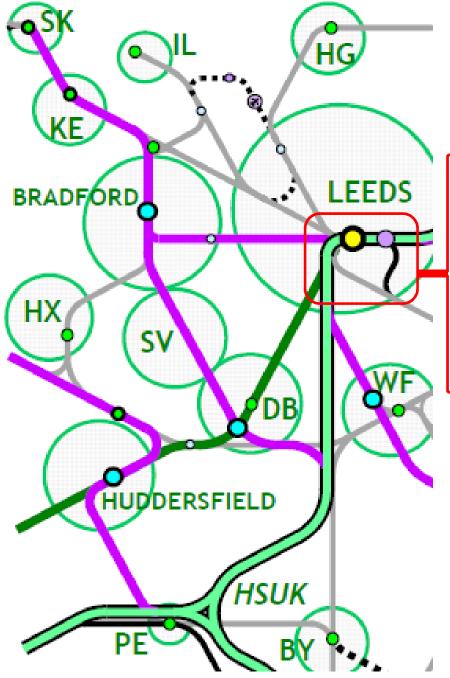
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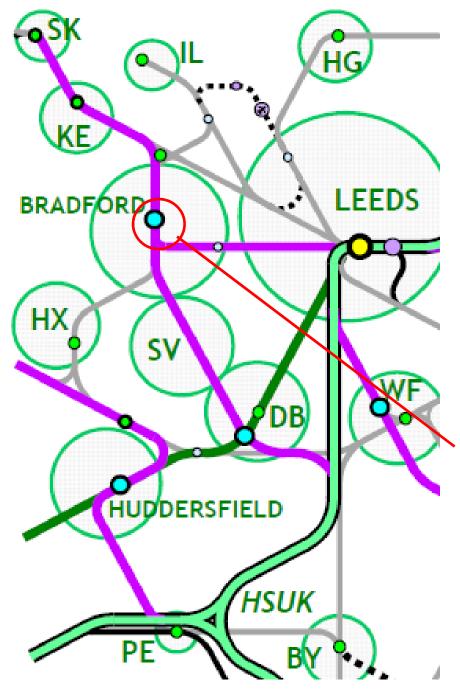
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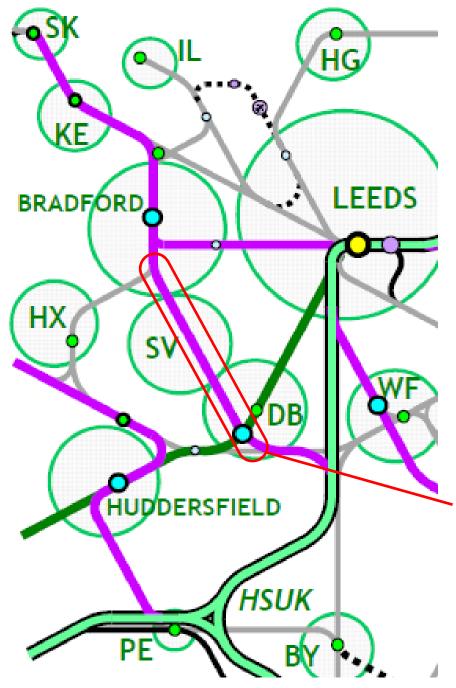
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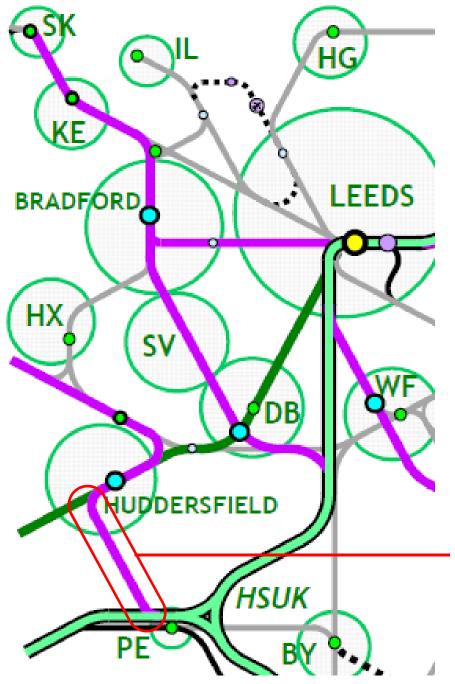
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- Spen Valley restoration
- Huddersfield-Penistone
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- High Speed UK delivers **twice** the connectivity
- High Speed UK can be built quicker
- High Speed UK maintains **network integrity**
- This looks like the right way to spend £50 billion...

AB_ GL NE DL

Take the HIGH SPEED UK CHALLENGE

- Connectivity
- Value for Money
- Public Policy
- High Speed
- Design Principles
- Due Process

HIGH SPEED UK ...there is an alternative

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