

HSUK NORTH COUNTRY RAIL STRATEGY

The English North Country lies between the industrial masses of Yorkshire and Lancashire, and the Scottish border. It is through this region that HS2 is projected ultimately to extend northwards to Newcastle, and to Edinburgh and Glasgow to form a system accessing all primary UK cities. Whilst the route to Newcastle comprises a fairly logical continuation of the eastern arm of HS2's 'Y', passing through the generally low-lying and populous country to the east of the Pennines, there is greater concern at the intended west-sided route to Scotland.

Here, the mountains of both the English Lake District and the Scottish Southern Uplands place formidable barriers in the path of any new high speed railway, and the relatively small populations that might benefit are considerably outweighed by the numbers who seem certain to protest against the intrusion of the new railway into sensitive rural landscapes. As with the proposed HS2 route through the Chilterns much further south, the only feasible solution would seem to be to bury major lengths of high speed line into tunnel, at greatly increased cost.

The following diagrams chart the development of the North Country rail network, and illustrate the likely impacts of both HS2 and the alternative High Speed UK scheme. For precise details of the core High Speed UK proposals (as included in the cost estimates), see the HSUK Regional Maps on www.highspeeduk.co.uk.

NCN1 : NORTH COUNTRY REGIONAL NETWORK - PRE-1923 GROUPING

The historic railway network of the North Country was dominated by 3 major companies. To the east side of the Pennines, the North-Eastern Railway enjoyed an unchallenged monopoly over the entire Northumbria area, stretching from the River Aire at Leeds to the River Tweed on the Scottish border, and extending westwards over the Pennines to Carlisle and to Penrith. This was a unique situation, unmatched anywhere else in pre-grouping Britain, and its result was an integrated efficient network in which every town or city was served by a single hub station; indeed, Newcastle is the only UK primary city within the geographical scope of HS2 never to have had 2 or more disconnected city centre stations.

To the west of the Pennines, the London North-Western's main line extended from Preston to Carlisle, skirting around the Lake District massif via the Lune Gorge and Shap Summit; the route continued northwards via the Caledonian over Beattock Summit to Glasgow and Edinburgh; After failed attempts to co-operate with the London North-Western along the shared route via Ingleton, the Midland constructed its own Settle-Carlisle route through the heart of the Pennines. This third main line to the North reached Carlisle along the full length of the Eden Valley, and continued to Glasgow via Dumfries on the Glasgow South-Western, and to Edinburgh via Hawick on the North British 'Waverley' line.

NCN2 : NORTH COUNTRY REGIONAL NETWORK - CONTEMPORARY

Although there was considerable 'thinning' of the North-Eastern Railway's local lines through the Beeching era, most of the North Country's core network has survived. The principal casualties have been the Darlington-Penrith 'Stainmore' line and the Harrogate-Northallerton section of the 'Leeds Northern'. The North-Eastern's main line from York to Newcastle and Edinburgh has become the present-day East Coast Main Line, and the London North-Western's Preston-Carlisle route is now the West Coast Main Line. Despite sustained attempts to shut down the Midland's Settle-Carlisle line, this route survived, and it is now a vital freight route, until recently carrying imported coal from Clyde ports to Yorkshire power stations.

NCN3 : CONNECTIVITY OF LOCAL & INTERCITY RAIL NETWORK TO HS2 (DEVELOPED AS 'Y')

Current proposals for the HS2 'Y' show the new high speed line linking onto the East Coast Main Line at Church Fenton, and onto the West Coast Main Line at Bamfurlong. HS2 services to London will call at primary ECML stations (ie York, Darlington and Newcastle) but will run non-stop through equivalent WCML stations north of Preston (ie Lancaster, Oxenholme, Penrith and Carlisle). This major loss of intercity connectivity for these intermediate communities is an inevitable consequence of HS2 Ltd's focus upon optimising journey times from Glasgow and Edinburgh to London, and of the conflicting requirements of high speed passenger traffic, local services and freight traffic on a 2-track route with insufficient capacity. These issues cannot be resolved by current initiatives to develop 'cut-offs' in the Kendal and Penrith areas, which seem certain only to provoke huge environmental controversy.

NCN4 : CONNECTIVITY OF LOCAL & INTERCITY RAIL NETWORK TO HS2 (FULL SYSTEM)

Longer term projections for HS2 show dedicated high speed lines extending from West Yorkshire to the North-East, and from the (English) North-West to the central belt of Scotland. The evidence of current HS2 proposals indicates clearly that these new lines will have few intermediate calling points, and these are likely to comprise parkway stations serving Teesside and possibly Wearside en route to Newcastle, and serving Preston and Carlisle en route to Scotland. This would leave many centres currently enjoying regular intercity services, such as York, Darlington and Durham, and Lancaster, Oxenholme/Kendal and Penrith, bypassed and suffering the adverse impacts of reduced connectivity.

An equally important consideration is the difficult and sensitive terrain of the Lake District fringes, and the absence of any feasible surface alignment around for a high speed line designed even for 300km/h, let alone the 400km/h preferred by HS2 Ltd. Provisional review of possible routeings indicates a tunnel of circa 50km length, extending from Kendal to Penrith, passing through hard volcanic rock (ie igneous or metamorphosed), as opposed to the chalk and London clay/gravels through which HS2's long tunnels will be excavated in London and the South-East.

To illustrate the quality of the connectivity achieved by HS2, a green/amber/red 'traffic light' system indicates stations within 20/40/60 minutes' direct journey from the nearest station from which high speed services to London are planned.

The diagram shows 2 possible options for a high speed terminal in Newcastle. HS2 trains might continue to use the existing Newcastle Central, but this would dictate continued operation of 'classic-compatible' rolling stock of approx 250m length. However, if larger-sized 'captive' rolling stock were to be employed, city centre access across the existing Tyne bridges would seem to be impracticable. Instead a dedicated terminal, probably located at Tyne Yard, adjacent to the A1 Western Bypass, appears to be the most likely outcome. This would require shuttle services linking to Newcastle Central, and other local transport networks developed accordingly - for instance, an extension of the Tyne & Wear Metro - all at considerable extra expense. Such developments are assumed in the connectivity 'traffic light' diagram.

NCN5 : HIGH SPEED UK AND OTHER DEVELOPMENTS TO LOCAL RAIL SYSTEM

High Speed UK would closely follow the route of the East Coast Main Line from York to north of Darlington, with sections also following the A1(M) and the Leamside Line. A tunnelled route would be adopted through Newcastle, with a new station contiguous with the existing Newcastle Central, located on the new Northumbria Bridge spanning the River Tyne. In connection with the parallel project, to create a dedicated national freight route with potential for Continental Gauge wagons, it is also proposed to upgrade the Stockton-Ferryhill 'Stillington' line, and to restore the Ferryhill-Pelaw 'Leamside' line. It is also proposed to create a direct route from HSUK to Sunderland, following the former Elvet and Ryhope branches.

NCN6 : CONNECTIVITY OF LOCAL & INTERCITY RAIL NETWORK TO HIGH SPEED UK

Through full integration with the existing network, High Speed UK services would extend to bypassed centres such as York, Middlesbrough, Durham and Sunderland. Along the West Coast corridor, existing service levels would be maintained, with services to London enjoying substantial acceleration along the high speed section from the West Midlands to London. As with HS2, a traffic light system has been employed to illustrate proximity of any local station to the intercity/high speed network. This clearly demonstrates the superior connectivity achieved by High Speed UK's more integrated and diverse system, when compared with the segregation of HS2.

NCN7 : HIGH SPEED UK AND ASSOCIATED FREIGHT DEVELOPMENTS

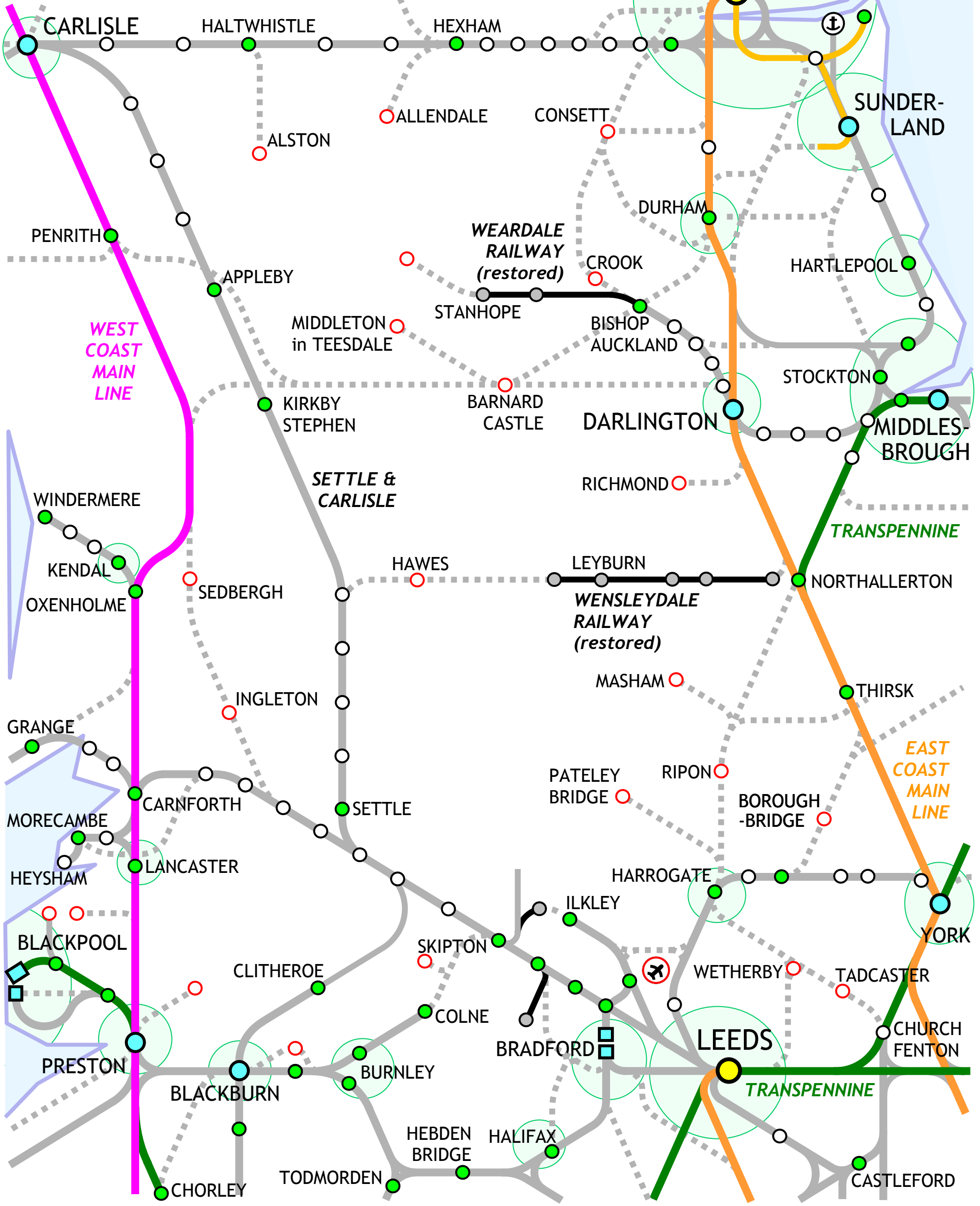
This diagram illustrates the alignment of the proposed national north-south freight route, potentially for Continental Gauge traffic. This might follow the existing East Coast Main Line north of York, but - noting a probable requirement to expand this route to 6 tracks to accommodate high speed services along with existing passenger and freight services - an alternative, of routeing freight traffic via Wetherby and Boroughbridge along a new route constructed between new A1(M) and former A1 (now A168), should also be examined. The freight route would follow the existing route via Yarm to Teesside, and onwards via Stillington and Leamside lines to Newcastle. Here, diversion of most intercity passenger traffic to the high speed line, and previous diversion of local services to the Tyne & Wear Metro, would permit the routeing of trunk freight traffic via King Edward Bridge and Newcastle Central station. Noting King Edward Bridge and other structures with track in predetermined positions not capable of alteration, appropriate signalling measures would have to be employed, to exclude trains from adjacent tracks whilst Continental Gauge wagons are passing.

KEY

- WEST COAST MAIN LINE
- TRANSPENNINE MAIN LINE
- EAST COAST MAIN LINE
- TYNE & WEAR METRO
- CLOSED ROUTE/STATION
- PRINCIPAL/SECONDARY TERTIARY/LOCAL

NORTH COUNTRY RAIL NETWORK : 2
NORTH COUNTRY REGIONAL NETWORK - CONTEMPORARY

DIAGRAM **NCN 2**
 © NETWORK 2020 MAPPING 2018

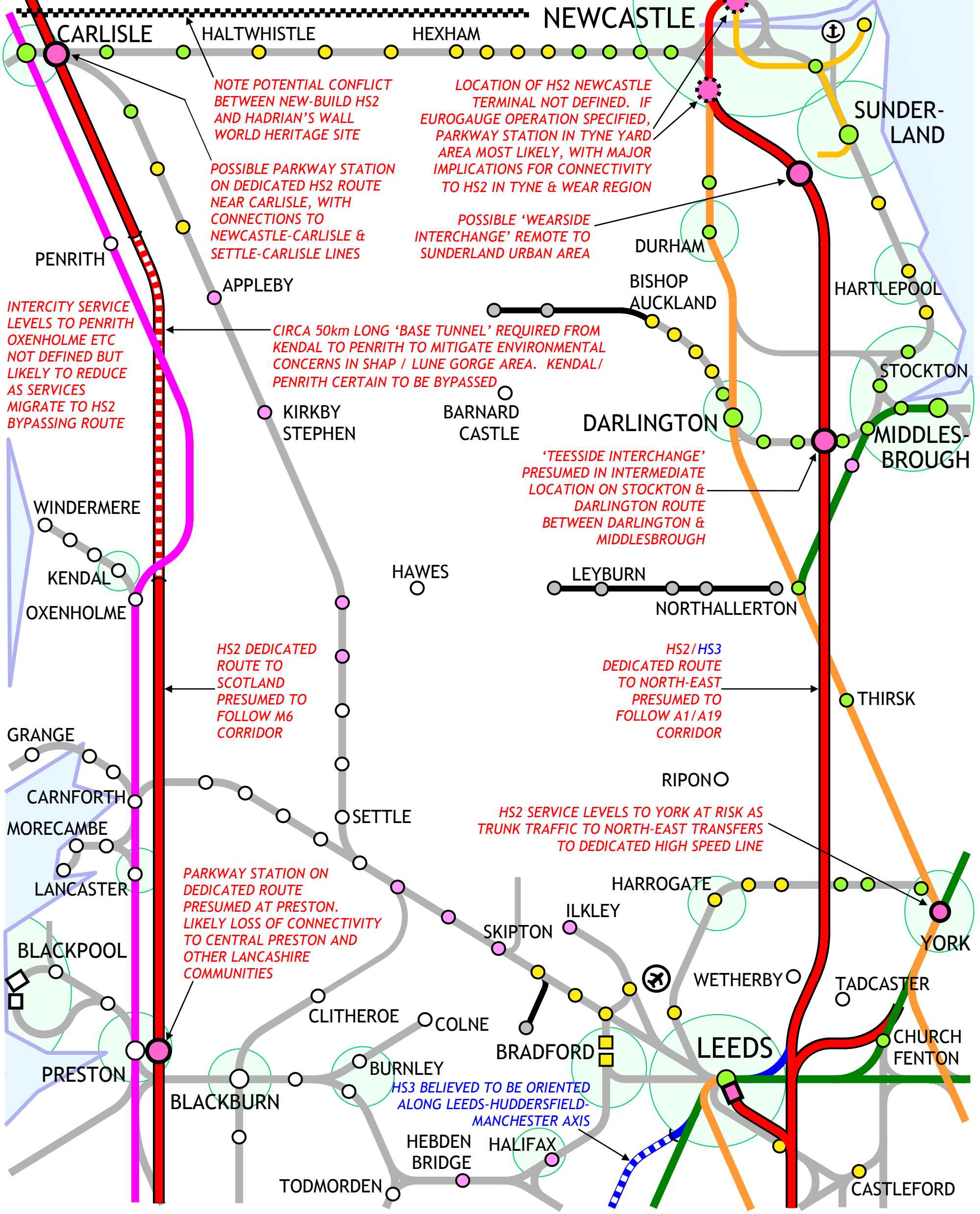


KEY

- HS2 ROUTES & STATIONS WITH HS2 LINKS TO LONDON
- STATIONS AT 20/40/60 MINUTES FROM HS HUB
- STATION AT >60 MINUTES OR REQ^d FURTHER CHANGE

NORTH COUNTRY RAIL NETWORK : 4
CONNECTIVITY OF LOCAL RAIL NETWORK TO HS2 NEW-BUILD HIGH SPEED LINES TO SCOTLAND & NORTH-EAST

DIAGRAM **NCN 4**
 © NETWORK 2020 MAPPING 2018



NOTE POTENTIAL CONFLICT BETWEEN NEW-BUILD HS2 AND HADRIAN'S WALL WORLD HERITAGE SITE

LOCATION OF HS2 NEWCASTLE TERMINAL NOT DEFINED. IF EUROGAUGE OPERATION SPECIFIED, PARKWAY STATION IN TYNE YARD AREA MOST LIKELY, WITH MAJOR IMPLICATIONS FOR CONNECTIVITY TO HS2 IN TYNE & WEAR REGION

POSSIBLE 'WEAR SIDE INTERCHANGE' REMOTE TO SUNDERLAND URBAN AREA

POSSIBLE PARKWAY STATION ON DEDICATED HS2 ROUTE NEAR CARLISLE, WITH CONNECTIONS TO NEWCASTLE-CARLISLE & SETTLE-CARLISLE LINES

INTERCITY SERVICE LEVELS TO PENRITH OXENHOLME ETC NOT DEFINED BUT LIKELY TO REDUCE AS SERVICES MIGRATE TO HS2 BYPASSING ROUTE

CIRCA 50km LONG 'BASE TUNNEL' REQUIRED FROM KENDAL TO PENRITH TO MITIGATE ENVIRONMENTAL CONCERNS IN SHAP / LUNE GORGE AREA. KENDAL / PENRITH CERTAIN TO BE BYPASSED

'TEESSIDE INTERCHANGE' PRESUMED IN INTERMEDIATE LOCATION ON STOCKTON & DARLINGTON ROUTE BETWEEN DARLINGTON & MIDDLESBROUGH

HS2 DEDICATED ROUTE TO SCOTLAND PRESUMED TO FOLLOW M6 CORRIDOR

HS2 / HS3 DEDICATED ROUTE TO NORTH-EAST PRESUMED TO FOLLOW A1 / A19 CORRIDOR

HS2 SERVICE LEVELS TO YORK AT RISK AS TRUNK TRAFFIC TO NORTH-EAST TRANSFERS TO DEDICATED HIGH SPEED LINE

PARKWAY STATION ON DEDICATED ROUTE PRESUMED AT PRESTON. LIKELY LOSS OF CONNECTIVITY TO CENTRAL PRESTON AND OTHER LANCASHIRE COMMUNITIES

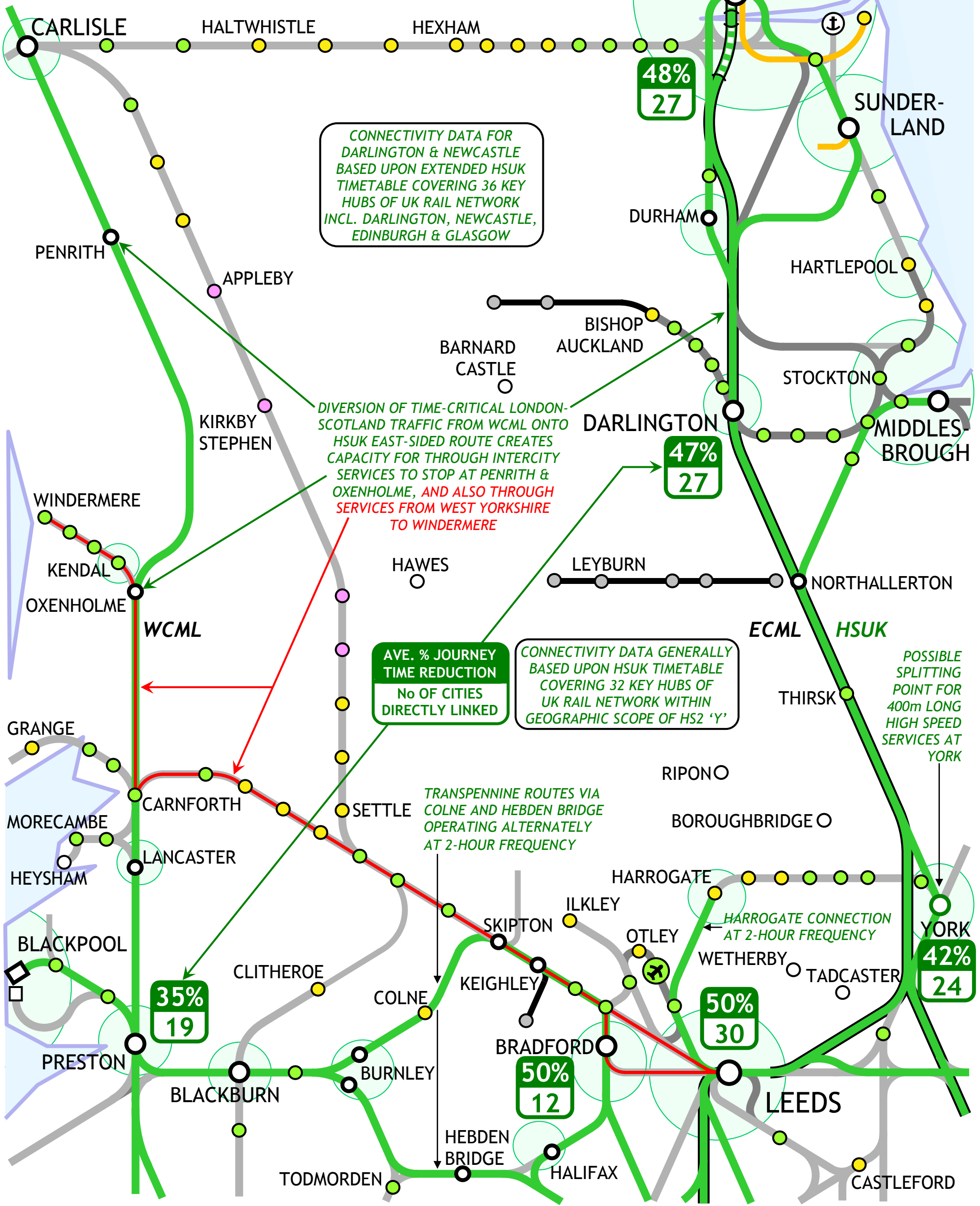
HS3 BELIEVED TO BE ORIENTED ALONG LEEDS-HUDDERSFIELD-MANCHESTER AXIS

KEY

- HIGH SPEED NETWORK & HUBS WITH HS LINKS TO LONDON
- STATIONS AT 20/40/60 MINUTES FROM HS HUB
- STATION AT >60 MINUTES OR REQ^d FURTHER CHANGE

NORTH COUNTRY RAIL NETWORK : 6
CONNECTIVITY OF LOCAL & INTERCITY RAIL NETWORK TO HIGH SPEED UK

DIAGRAM **NCN 6**
 © NETWORK 2020 MAPPING 2018



CONNECTIVITY DATA FOR DARLINGTON & NEWCASTLE BASED UPON EXTENDED HSUK TIMETABLE COVERING 36 KEY HUBS OF UK RAIL NETWORK INCL. DARLINGTON, NEWCASTLE, EDINBURGH & GLASGOW

DIVERSION OF TIME-CRITICAL LONDON-SCOTLAND TRAFFIC FROM WCML ONTO HSUK EAST-SIDED ROUTE CREATES CAPACITY FOR THROUGH INTERCITY SERVICES TO STOP AT PENRITH & OXENHOLME, AND ALSO THROUGH SERVICES FROM WEST YORKSHIRE TO WINDERMERE

AVE. % JOURNEY TIME REDUCTION
 No OF CITIES DIRECTLY LINKED

CONNECTIVITY DATA GENERALLY BASED UPON HSUK TIMETABLE COVERING 32 KEY HUBS OF UK RAIL NETWORK WITHIN GEOGRAPHIC SCOPE OF HS2 'Y'

POSSIBLE SPLITTING POINT FOR 400m LONG HIGH SPEED SERVICES AT YORK

TRANSPENNINE ROUTES VIA COLNE AND HEBDEN BRIDGE OPERATING ALTERNATELY AT 2-HOUR FREQUENCY

HARROGATE CONNECTION AT 2-HOUR FREQUENCY

48%
27

47%
27

35%
19

50%
12

50%
30

42%
24

CARLISLE

HALTWHISTLE

HEXHAM

NEWCASTLE

SUNDERLAND

DURHAM

HARTLEPOOL

PENRITH

APPLEBY

BARNARD CASTLE

BISHOP AUCKLAND

STOCKTON

KIRKBY STEPHEN

DARLINGTON

MIDDLESBROUGH

WINDERMERE

KENDAL

OXENHOLME

WCML

HAWES

LEYBURN

ECML

HSUK

THIRSK

GRANGE

RIPONO

MORECAMBE

CARNFORTH

SETTLE

BOROUGHBRIDGE

HEYSHAM

LANCASTER

HARROGATE

YORK

BLACKPOOL

CLITHEROE

SKIPTON

ILKLEY

OTLEY

WETHERBY

TADCASTER

PRESTON

BLACKBURN

BURNLEY

BRADFORD

LEEDS

CASTLEFORD

TODMORDEN

HEBDEN BRIDGE

HALIFAX

