

HSUK NORTH-WEST CORRIDOR / POTTERIES RAIL STRATEGY

The Potteries conurbation is a major UK industrial area, located approximately equidistant between the larger conurbations of the West Midlands and the North-West. Comprising an agglomeration of smaller communities ie Newcastle-under-Lyme, and the ‘Six Towns’ of Tunstall, Burslem, Hanley, Stoke, Fenton and Longton (now incorporated as the city of ‘Stoke on Trent’) and the wider Staffordshire Moorlands Borough, its collective population of 450,000 puts it at the fringe of ‘primary city’ status. Yet its hilly local geography/topography caused Stoke to be bypassed by the Grand Junction Railway (latterly the West Coast Main Line), and a similar fate is set to befall Stoke with the development of HS2.

The following diagrams chart the development of the rail network of the Potteries region, and illustrate the likely impacts of both HS2 and High Speed UK. 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.

PRC1 : NORTH-WEST CORRIDOR/POTTERIES REGIONAL NETWORKS - PRE-1923 GROUPING

The railway network of the North-West Corridor developed from the original 1837 Grand Junction Railway. Running northwards from Birmingham via Stafford and Crewe, and passing through easier topography to the west of the Potteries, the Grand Junction complemented the London & Birmingham Railway and connected to the Liverpool & Manchester at Earlestown to establish the world’s first intercity network. The Grand Junction was later subsumed into the London & North-Western Railway (LNWR), which controlled all West Coast operations from London to Carlisle and established the regional hub at Crewe. This left Stoke effectively bypassed; here a dense local network was developed by the North Staffordshire Railway, which enjoyed a complete monopoly within the Potteries region.

The region’s trunk network was supplemented by the Great Western, whose main line ran north-westwards from Birmingham to Wolverhampton, Shrewsbury, Chester and ultimately Birkenhead.

PRC2 : NORTH-WEST CORRIDOR REGIONAL NETWORKS - CONTEMPORARY

The trunk network of the North-West Corridor region remained largely intact through the Beeching era, with only subsidiary branch lines closed. Within the Potteries, the network has reduced to the North Staffordshire main line from Colwich Junction via Stoke to Macclesfield, and regional routes radiating towards Derby, Stafford and Crewe. With the closure of branches such as the Potteries Loop and the Silverdale-Newcastle route, and with the closure of most minor stations along the main lines, virtually all Potteries rail activity is concentrated upon Stoke Station. Stoke is currently served by 2 West Coast trains per hour from London, and 2 CrossCountry trains per hour, all en route from Birmingham to Manchester Piccadilly. However, Stoke lacks direct links to other regional primary cities eg Nottingham, Sheffield, Leeds and Liverpool, and its interregional connectivity is generally poor.

PRC3 : CONNECTIVITY OF LOCAL & INTERCITY RAIL NETWORK TO HS2

The HS2 trunk route is projected to follow the route of the West Coast Main Line, bypassing Stoke and instead serving a new hub station at Crewe. Existing intercity services via Stoke are projected to be reduced to a single train per hour. This reduced intercity connectivity seems likely to have severe economic impacts, and there is local pressure for extra HS2 services to follow the existing Trent Valley route to serve Stoke and Macclesfield, but this proposal may not be practicable owing to the restricted capacity of HS2’s 2-track stem.

PRC4 : CONNECTIVITY OF LOCAL & INTERCITY RAIL NETWORK TO ‘STOKE ROUTE’ VARIANT

The ‘Stoke Route’ comprised a more radical strategy to maintain Stoke’s rail connectivity. This was a proposal, developed by Stoke City Council, to revise the routing of HS2 to pass through Stoke along the existing ‘brownfield’ rail corridor, with a new central station (to the north of the existing) harmonised with a much wider urban regeneration project. The revised route would continue north up the Trent valley and into the Cheshire Plain, before rejoining the established HS2 route north of Crewe. ‘Stoke Hub’ would effectively replace ‘Crewe Hub’ as a primary calling point on HS2 services, whilst maintaining the possibility of serving Crewe via Kidsgrove and Alsager.

The principle of the ‘Stoke Route’ concept - to bring improved connectivity and higher speed services to a much greater population (450,000 for Stoke vs 70,000 for Crewe) - was fundamentally sound. However, it was compromised by its attempt to compete with HS2 on the basis of speed/journey time on the time-sensitive ‘West Coast’ Anglo-Scottish high speed route, and by its assumption of maximum speeds (330km/h on the

southern approaches to Stoke, and 230km/h in the environs of Stoke Station), which were unachievable for new parallel tracks, given the existing curvatures. This may well have provided HS2 Ltd with the pretext it needed to reject the Stoke Route proposals, despite their major advantages.

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

PRC5 : ALTERNATIVE HIGH SPEED UK AND OTHER DEVELOPMENTS TO LOCAL RAIL SYSTEM

High Speed UK has adopted the 'Stoke Route' philosophy, to eliminate the current bypassing of Stoke by reorienting or enhancing main line corridors through the heart of the Potteries conurbation. With all time-sensitive north-south routes located on the more favourable east side of the country, the new alignments through Stoke can be designed for lesser speeds (of the order of 200km/h) which can be accommodated along the existing rail corridor.

The High Speed UK proposals for the Potteries comprise the following key project elements:

- Upgrade of the Birmingham-Stoke-Manchester route to achieve sub-1-hour Birmingham-Manchester journey times. Locally to Stoke, this takes advantage of the recently completed Norton Bridge flyover, full 4-tracking of the Trent valley route from Stone through Stoke to Longport, and selective 4-tracking of the onward route to Stockport. This will enhance capacity to allow increased frequency on both intercity and local routes.
- Reorientation of the West Coast Main Line via Stoke. This will divert from the existing WCML north-west of Rugeley and pass on a new alignment following the A51 to the east of Colwich. The route will be upgraded to 200km/h from Hixon to Stone to join the core 4-track section through Stoke. From Longport, the reoriented WCML will diverge from the existing North Staffordshire route, to follow the A500 on a new accelerated direct route to Stoke.
- Upgrade of the Derby-Stoke route. This is a currently neglected route which, through upgrade and/or elimination of the many level crossings along its length, could offer much faster timings and comprise a new 'North Midlands' intercity route, running Nottingham-Derby-Stoke-Crewe-Warrington-Liverpool.
- Reopening/opening of local stations enabled by 4-tracking of the North Staffordshire main line between Stone and Longport, and the segregation of express passenger traffic from slower local traffic.
- Upgrading of existing Stoke station to comprise 4 through platforms, in order to cope with increased train movements and passenger interchange resulting from Stoke's improved local and national connectivity.
- Reopening of former North Staffordshire route via Newcastle-under-Lyme and Keele, with connection to WCML at Madeley and onward direct links to Manchester, Manchester Airport and Liverpool. Note also proposed reopening of Leek branch.

It is important to note that proposed HSUK developments around Stoke should not detract from proposed development of the railway estate in the Crewe area.

PRC6 : CONNECTIVITY OF LOCAL & INTERCITY RAIL NETWORK TO HIGH SPEED UK

HSUK high speed services will directly access all communities currently served by the national intercity network, and connectivity will at the very least be maintained but in the majority of cases significantly improved. As with HS2 and the 'Stoke Route' variant, a green/amber/red 'traffic light' system indicates stations within 20/40/60 minutes' direct journey of the nearest hub.

HSUK achieves particular connectivity benefits for Stoke, necessary to elevate the city to 'Top 16 core city' status. With trunk main line routes concentrated upon Stoke, HSUK offers direct connections to all other 15 core regional centres ie London, Heathrow, Milton Keynes, Birmingham, Leicester, Nottingham, Derby, Sheffield, Manchester, Liverpool, Leeds, Darlington, Newcastle, Edinburgh and Glasgow. The HSUK national intercity timetable shows average journey time savings of 46% to these destinations - which illustrates the value of comprehensive connectivity and full integration offered by HSUK, rather than the extreme speed of HS2.

Elsewhere in the North-West Corridor region, improved capacity through Birmingham New Street and across the West Midlands network should permit the operation of through high speed services to Telford and Shrewsbury.

PRC7 : HIGH SPEED UK AND ASSOCIATED FREIGHT DEVELOPMENTS

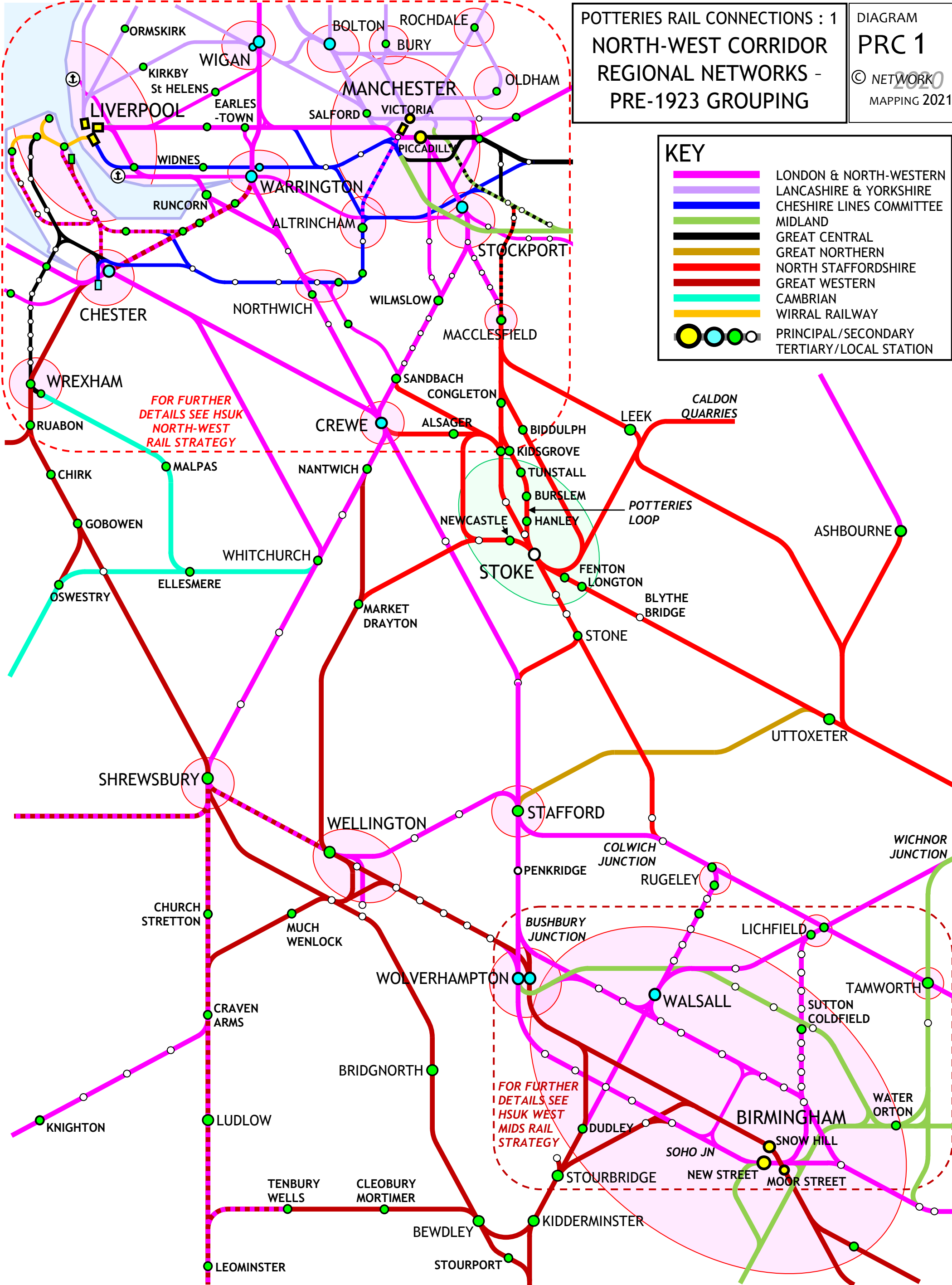
Currently, little if any railfreight is conveyed to or from the Potteries conurbation. However, given its status as a major hub of UK industry, it is important that railfreight facilities are maintained, and that capacity is provided to accommodate new freight flows. HSUK satisfies this requirement through the 4-tracking of the core Stone-Longport section, which allows slower freight and local passenger flows to be segregated from express passenger flows. Equally importantly, the HSUK proposals also make allowance for approach routes with sufficient capacity, particularly from the West Midlands where HSUK proposals for faster and higher-volume flows along the Bushbury-Stafford Grand Junction route may necessitate the diversion of freight flows onto the Walsall-Cannock-Rugeley line.

POTTERIES RAIL CONNECTIONS : 1
 NORTH-WEST CORRIDOR
 REGIONAL NETWORKS -
 PRE-1923 GROUPING

DIAGRAM
 PRC 1
 © NETWORK
 MAPPING 2021

KEY

- LONDON & NORTH-WESTERN
- LANCASHIRE & YORKSHIRE
- CHESHIRE LINES COMMITTEE
- MIDLAND
- GREAT CENTRAL
- GREAT NORTHERN
- NORTH STAFFORDSHIRE
- GREAT WESTERN
- CAMBRIAN
- WIRRAL RAILWAY
- PRINCIPAL/SECONDARY
- TERTIARY/LOCAL STATION

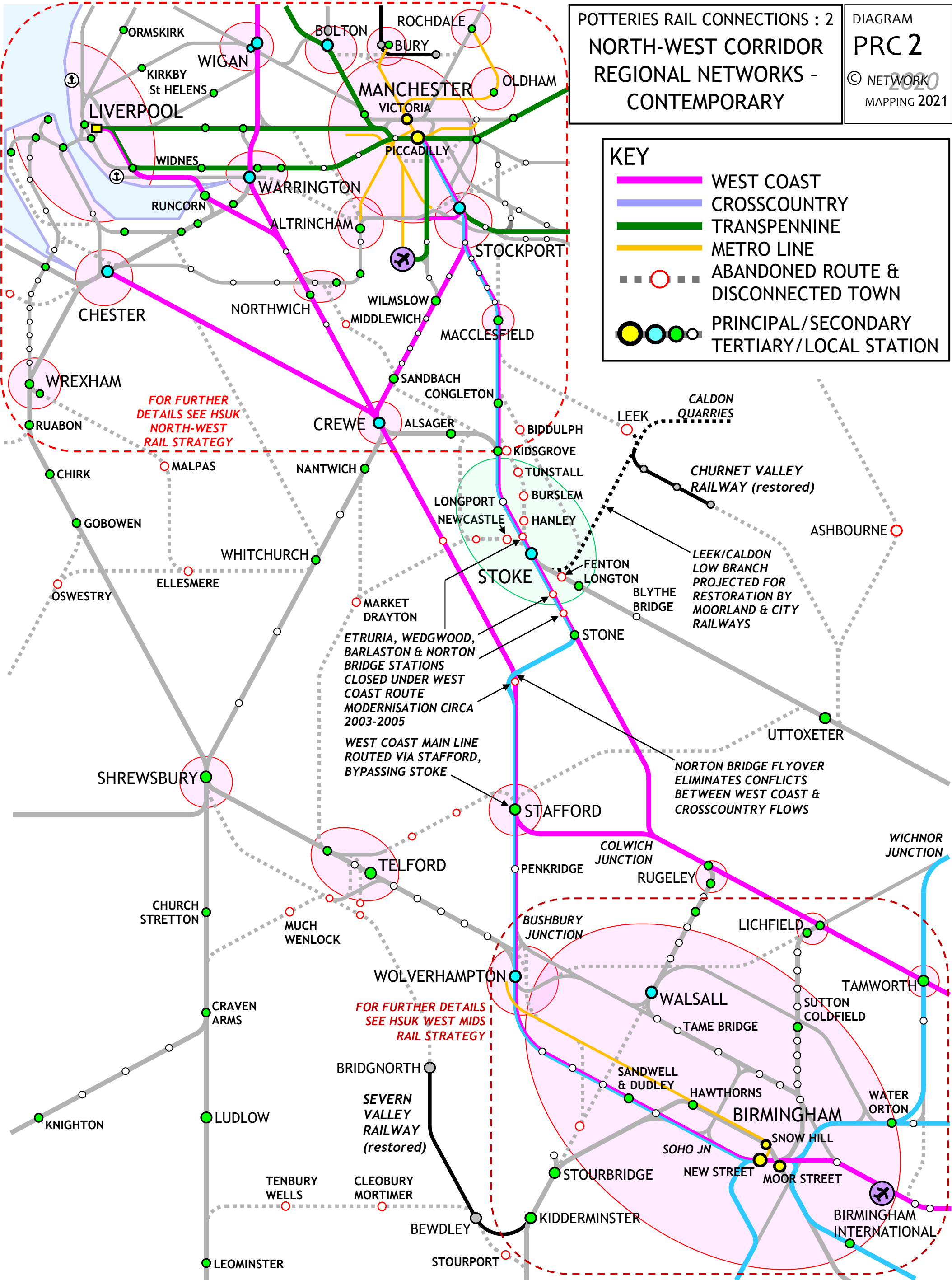


POTTERIES RAIL CONNECTIONS : 2
 NORTH-WEST CORRIDOR
 REGIONAL NETWORKS -
 CONTEMPORARY

DIAGRAM
PRC 2
 © NETWORK
 2020
 MAPPING 2021

KEY

- WEST COAST
- CROSSCOUNTRY
- TRANSPENNINE
- METRO LINE
- - - ABANDONED ROUTE & DISCONNECTED TOWN
- PRINCIPAL/SECONDARY TERTIARY/LOCAL STATION



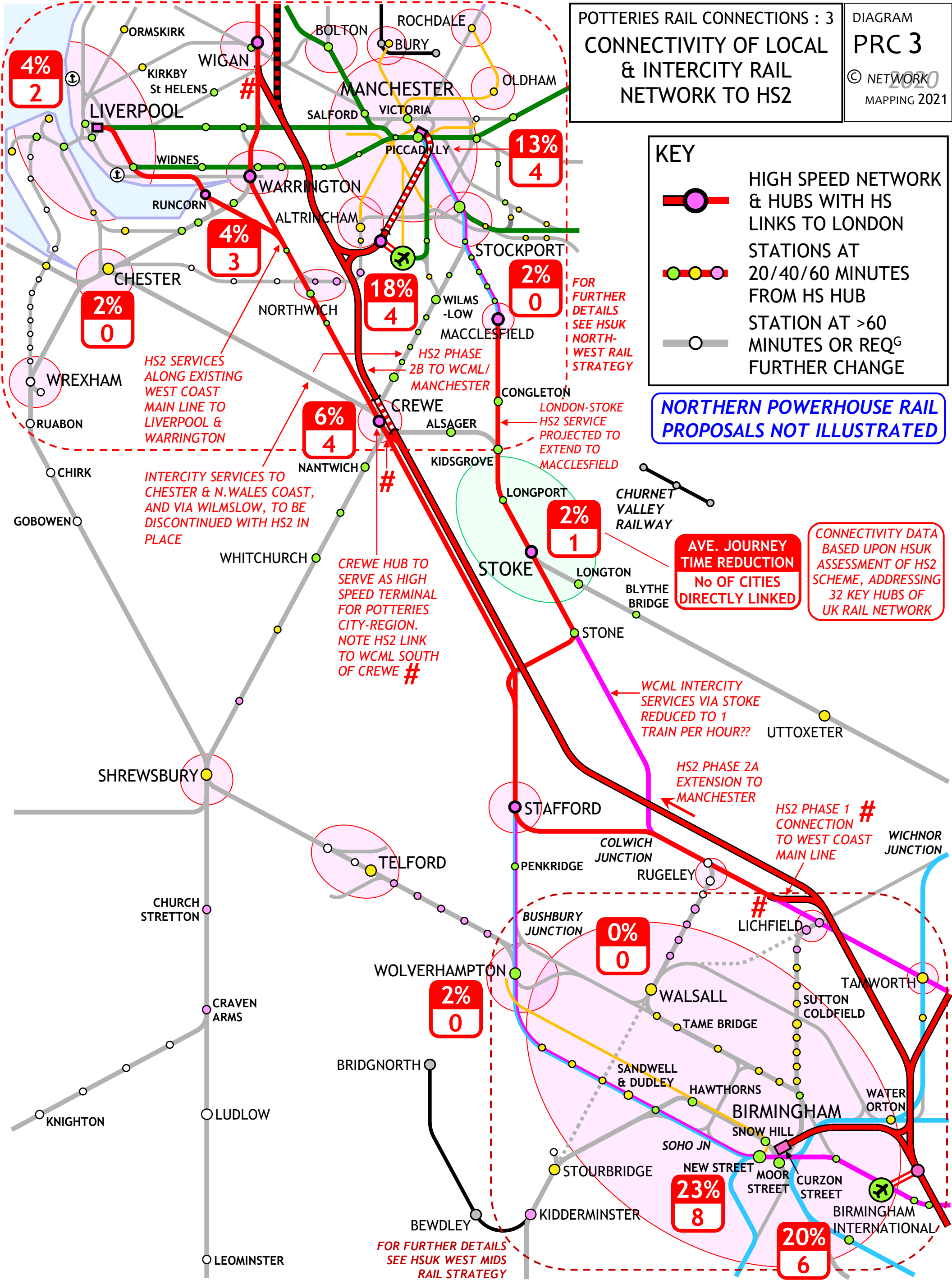
POTTERIES RAIL CONNECTIONS : 3
CONNECTIVITY OF LOCAL & INTERCITY RAIL NETWORK TO HS2

DIAGRAM
PRC 3
 © NETWORK
 2020
 MAPPING 2021

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

NORTHERN POWERHOUSE RAIL PROPOSALS NOT ILLUSTRATED



4%
2

13%
4

4%
3

2%
0

18%
4

2%
0

6%
4

2%
1

AVE. JOURNEY TIME REDUCTION
No OF CITIES DIRECTLY LINKED

CONNECTIVITY DATA BASED UPON HSUK ASSESSMENT OF HS2 SCHEME, ADDRESSING 32 KEY HUBS OF UK RAIL NETWORK

0%
0

2%
0

23%
8

20%
6

HS2 SERVICES ALONG EXISTING WEST COAST MAIN LINE TO LIVERPOOL & WARRINGTON

INTERCITY SERVICES TO CHESTER & N. WALES COAST, AND VIA WILMSLOW, TO BE DISCONTINUED WITH HS2 IN PLACE

CREWE HUB TO SERVE AS HIGH SPEED TERMINAL FOR POTTERIES CITY-REGION. NOTE HS2 LINK TO WCML SOUTH OF CREWE #

FOR FURTHER DETAILS SEE HSUK NORTH-WEST RAIL STRATEGY

LONDON-STOKE HS2 SERVICE PROJECTED TO EXTEND TO MACCLESFIELD

CHURNET VALLEY RAILWAY

WCMC INTERCITY SERVICES VIA STOKE REDUCED TO 1 TRAIN PER HOUR??

HS2 PHASE 2A EXTENSION TO MANCHESTER





HS2 PHASE 1 CONNECTION TO WEST COAST MAIN LINE #

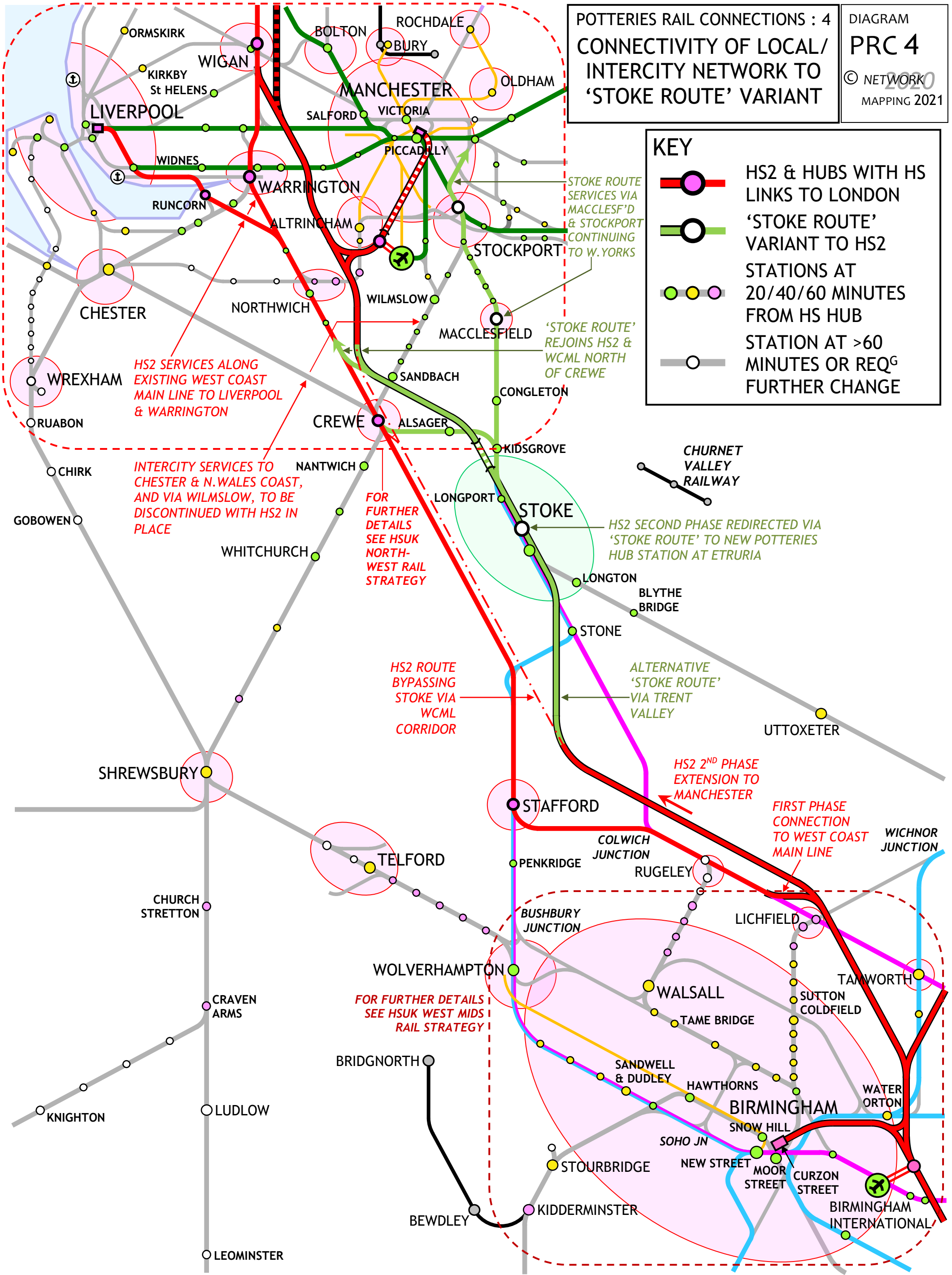
FOR FURTHER DETAILS SEE HSUK WEST MIDS RAIL STRATEGY

POTTERIES RAIL CONNECTIONS : 4
**CONNECTIVITY OF LOCAL/
 INTERCITY NETWORK TO
 'STOKE ROUTE' VARIANT**

DIAGRAM
PRC 4
 © NETWORK
 2020
 MAPPING 2021

KEY

-  HS2 & HUBS WITH HS LINKS TO LONDON
-  'STOKE ROUTE' VARIANT TO HS2
-  STATIONS AT 20/40/60 MINUTES FROM HS HUB
-  STATION AT >60 MINUTES OR REQ^G FURTHER CHANGE

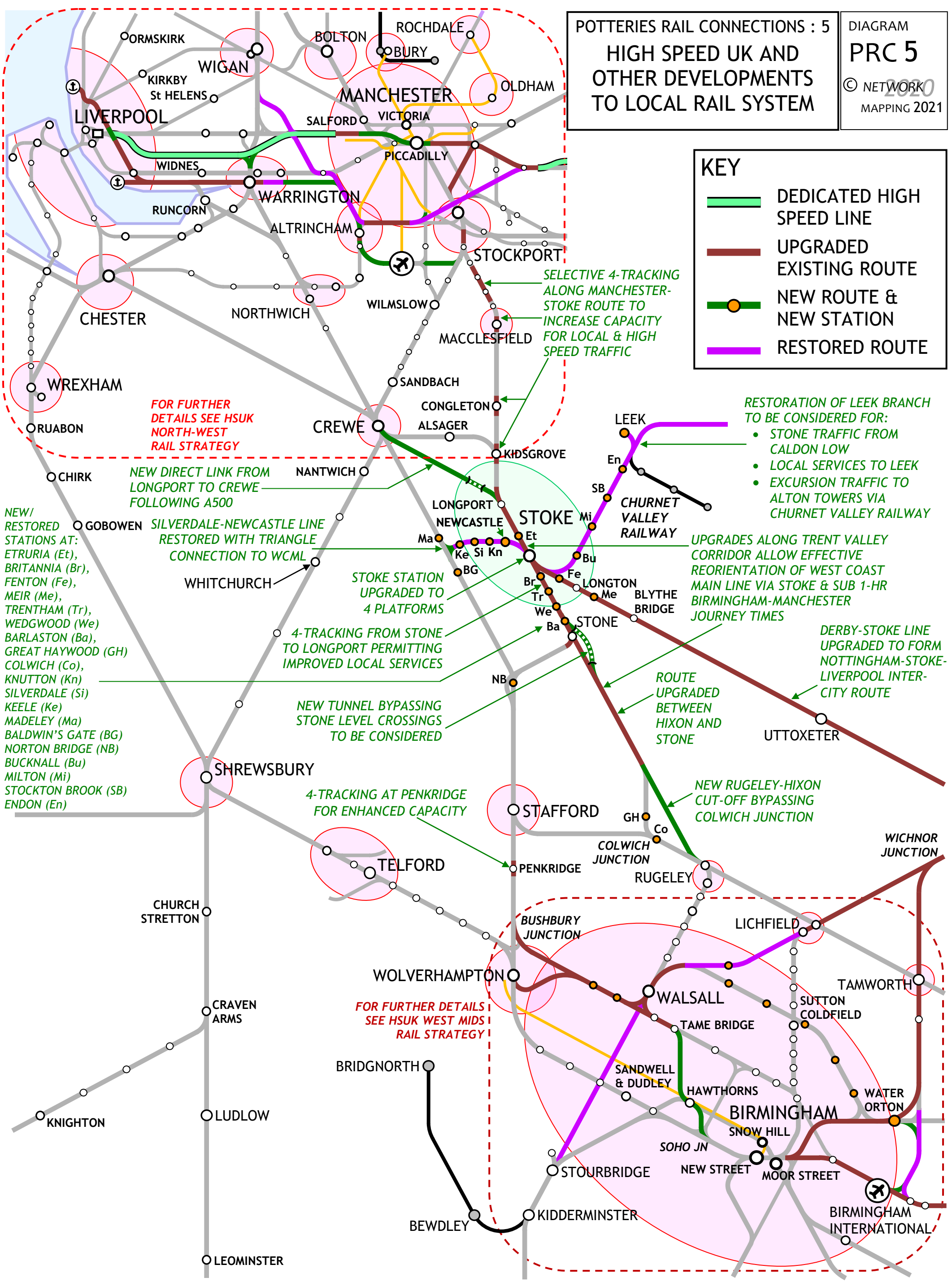


POTTERIES RAIL CONNECTIONS : 5
**HIGH SPEED UK AND
 OTHER DEVELOPMENTS
 TO LOCAL RAIL SYSTEM**

DIAGRAM
PRC 5
 © NETWORK
 2020
 MAPPING 2021

KEY

- DEDICATED HIGH SPEED LINE
- UPGRADED EXISTING ROUTE
- NEW ROUTE & NEW STATION
- RESTORED ROUTE



*FOR FURTHER
 DETAILS SEE HSUK
 NORTH-WEST
 RAIL STRATEGY*

*NEW DIRECT LINK FROM
 LONGPORT TO CREWE
 FOLLOWING A500*

*NEW/
 RESTORED
 STATIONS AT:
 ETRURIA (Et),
 BRITANNIA (Br),
 FENTON (Fe),
 MEIR (Me),
 TRENTHAM (Tr),
 WEDGWOOD (We)
 BARLASTON (Ba),
 GREAT HAYWOOD (GH)
 COLWICH (Co),
 KNUTTON (Kn)
 SILVERDALE (Si)
 KEELE (Ke)
 MADELEY (Ma)
 BALDWIN'S GATE (BG)
 NORTON BRIDGE (NB)
 BUCKNALL (Bu)
 MILTON (Mi)
 STOCKTON BROOK (SB)
 ENDON (En)*

*SILVERDALE-NEWCASTLE LINE
 RESTORED WITH TRIANGLE
 CONNECTION TO WCML*

*STOKE STATION
 UPGRADED TO
 4 PLATFORMS*

*NEW TUNNEL BYPASSING
 STONE LEVEL CROSSINGS
 TO BE CONSIDERED*

*4-TRACKING AT PENKRIDGE
 FOR ENHANCED CAPACITY*

*FOR FURTHER DETAILS
 SEE HSUK WEST MIDS
 RAIL STRATEGY*

*SELECTIVE 4-TRACKING
 ALONG MANCHESTER-
 STOKE ROUTE TO
 INCREASE CAPACITY
 FOR LOCAL & HIGH
 SPEED TRAFFIC*

*RESTORATION OF LEEK BRANCH
 TO BE CONSIDERED FOR:*

- STONE TRAFFIC FROM CALDON LOW
- LOCAL SERVICES TO LEEK
- EXCURSION TRAFFIC TO ALTON TOWERS VIA CHURNET VALLEY RAILWAY

*UPGRADES ALONG TRENT VALLEY
 CORRIDOR ALLOW EFFECTIVE
 REORIENTATION OF WEST COAST
 MAIN LINE VIA STOKE & SUB 1-HR
 BIRMINGHAM-MANCHESTER
 JOURNEY TIMES*

*DERBY-STOKE LINE
 UPGRADED TO FORM
 NOTTINGHAM-STOKE-
 LIVERPOOL INTER-
 CITY ROUTE*

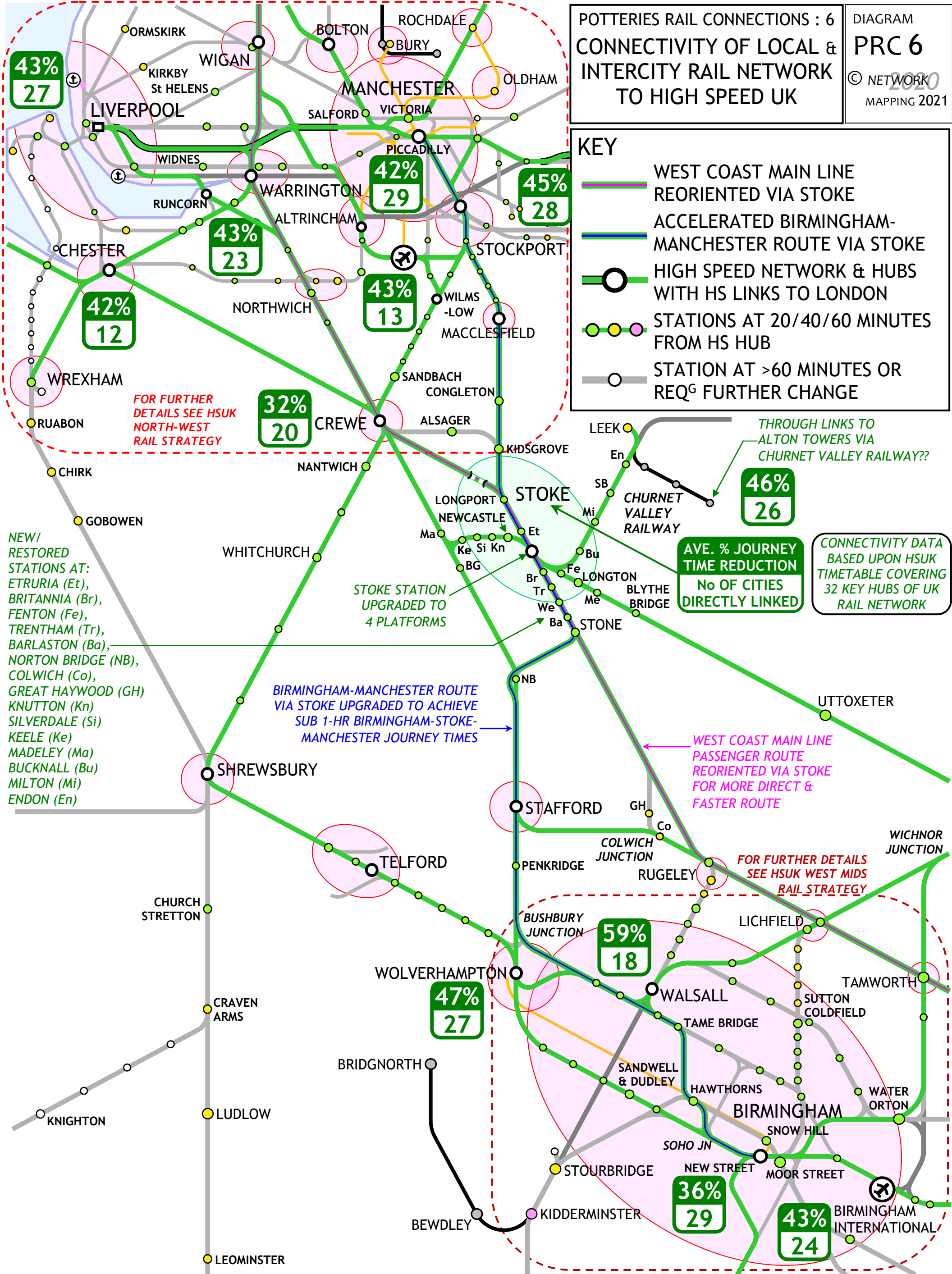
*ROUTE
 UPGRADED
 BETWEEN
 HIXON AND
 STONE*

*NEW RUGELEY-HIXON
 CUT-OFF BYPASSING
 COLWICH JUNCTION*

POTTERIES RAIL CONNECTIONS : 6
CONNECTIVITY OF LOCAL & INTERCITY RAIL NETWORK TO HIGH SPEED UK
 DIAGRAM
PRC 6
 © NETWORK
 2020
 MAPPING 2021

KEY

- WEST COAST MAIN LINE REORIENTED VIA STOKE
- ACCELERATED BIRMINGHAM-MANCHESTER ROUTE VIA STOKE
- HIGH SPEED NETWORK & HUBS WITH HS LINKS TO LONDON
- STATIONS AT 20/40/60 MINUTES FROM HS HUB
- STATION AT >60 MINUTES OR REQ^G FURTHER CHANGE



FOR FURTHER DETAILS SEE HSUK NORTH-WEST RAIL STRATEGY

NEW/ RESTORED STATIONS AT:
 ETRURIA (Et),
 BRITANNIA (Br),
 FENTON (Fe),
 TRENTHAM (Tr),
 BARLASTON (Ba),
 NORTON BRIDGE (NB),
 COLWICH (Co),
 GREAT HAYWOOD (GH)
 KNUXTON (Kn)
 SILVERDALE (Si)
 KEELE (Ke)
 MADELEY (Ma)
 BUCKNALL (Bu)
 MILTON (Mi)
 ENDON (En)

STOKE STATION UPGRADED TO 4 PLATFORMS

BIRMINGHAM-MANCHESTER ROUTE VIA STOKE UPGRADED TO ACHIEVE SUB 1-HR BIRMINGHAM-STOKE-MANCHESTER JOURNEY TIMES

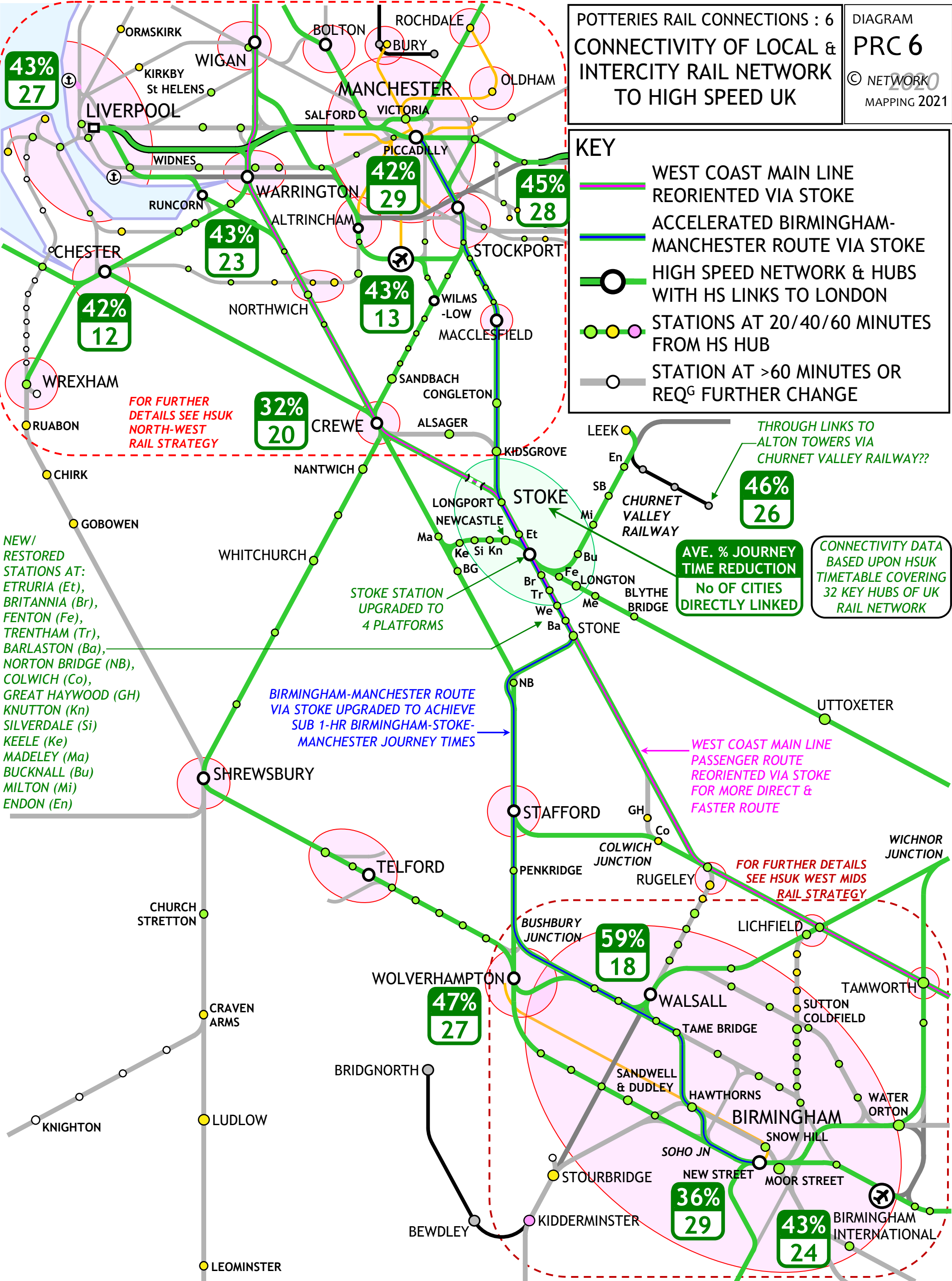
AVE. % JOURNEY TIME REDUCTION
No OF CITIES DIRECTLY LINKED

CONNECTIVITY DATA BASED UPON HSUK TIMETABLE COVERING 32 KEY HUBS OF UK RAIL NETWORK

WEST COAST MAIN LINE PASSENGER ROUTE REORIENTED VIA STOKE FOR MORE DIRECT & FASTER ROUTE

THROUGH LINKS TO ALTON TOWERS VIA CHURNET VALLEY RAILWAY??





FOR FURTHER DETAILS SEE HSUK WEST MIDS RAIL STRATEGY



POTTERIES RAIL CONNECTIONS : 7
**HIGH SPEED UK AND
 ASSOCIATED FREIGHT
 DEVELOPMENTS**

DIAGRAM
PRC 7
 © NETWORK
 2020
 MAPPING 2021

KEY

-  NEW HIGH SPEED LINE
-  TRUNK FREIGHT ROUTE & YARD
-  EUROGAUGE-CAPABLE FREIGHT ROUTE
-  RESTORED/NEW/UPGRADED ROUTE

