HSUK WEST MIDLANDS RAIL STRATEGY

There is little if any dispute, that a high speed line from London to the West Midlands must be a core element of any future UK high speed network. But Birmingham cannot be the exclusive aim of high speed rail planners; it is only the primary urban centre of the much larger West Midlands conurbation. This is acknowledged in HS2's core remit, which defines a high speed rail link from London to the West Midlands (rather than Birmingham) as the initial objective of the HS2 project. For the benefits of HS2 to spread beyond the extent of the new build (which in practical terms must finish in central Birmingham) optimum integration with local transport systems must be achieved.

The following diagrams define existing West Midlands rail connectivity, and review the capability of both HS2 and the alternative High Speed UK proposals to integrate with the local rail system and improve existing connectivity. 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.

WMN1 : WEST MIDLANDS REGIONAL NETWORKS – PRE 1923 GROUPING

It is essential to understand the historical development of the West Midlands rail network. This started in 1838 with the arrival of both the London & Birmingham and the Grand Junction Railway (from Lancashire) at the Curzon Street terminus. By the 1850s the region was crisscrossed by a burgeoning network of new lines. These coalesced into 3 principal systems; Great Western, Midland and London North-Western (LNW), the latter of which subsumed the London & Birmingham and the Grand Junction railways. All were trunk routes that spanned the region, and peripheral original terminus stations such as Curzon Street were superseded by more central through stations (eg New Street), after less than 15 years' operation. The Midland and London North-Western systems merged at New Street Station, but the Great Western remained a separate through route with its city centre station at Snow Hill.

WMN2 : WEST MIDLANDS REGIONAL NETWORKS – CONTEMPORARY

Even today, there is little connection, and little integration between the Midland/LNW and Great Western systems, which continue to operate from disconnected city centre stations. The LNW and Midland systems now comprise the West Coast and CrossCountry main lines, a local network of 40 suburban stations and a wider regional network, all converging upon New Street. The Great Western system, now truncated north-west of Birmingham, comprises the Chiltern route to London Marylebone and a much smaller local network focussed upon Moor Street and Snow Hill stations. Within Birmingham, interchange between the two systems is only possible by tram.

WMN3 : CONNECTIVITY OF LOCAL & INTERCITY RAIL NETWORK TO HS2

HS2's proposed Curzon Street terminus in Birmingham would be contiguous with Moor Street Station, and as such would offer reasonable connectivity to the Great Western system. But with the local networks primarily converging upon New Street, HS2 would be effectively disconnected from most of the West Midlands conurbation, with only 2 access points (at Curzon Street and Birmingham Interchange – both of which lack any local rail links). When considered alongside the bypassing of Coventry and other major regional centres, it is fair to question whether HS2 is fulfilling its remit, to serve the West Midlands.

Of almost equal concern is Curzon Street's configuration as a terminus station. As such it lacks capacity, it cannot offer effective through routeings (for instance on CrossCountry axes) and hence it would seem to be in a dysfunctional 2-tier relationship with New Street, from where the majority of services would continue to operate.

WMN4 : HIGH SPEED UK AND OTHER DEVELOPMENTS TO LOCAL RAIL SYSTEM

This diagram details an M6-aligned dedicated West Midlands spur from the M1-aligned spine of High Speed UK. However, HSUK's primary strategy is to enhance the existing Rugby-Coventry-Birmingham route, with 4-tracking between Rugby and Birmingham. The main impediment to this scheme will be the difficulty of undertaking such works on a railway that is already highly congested; hence electrification of both Coventry-Nuneaton and Nuneaton-Birmingham lines is proposed, to create a viable diversionary route. Concentration upon the existing Coventry corridor will achieve far greater connectivity benefits than a dedicated spur (which would only be constructed later as dictated by capacity requirements and possible Eurogauge operation) and will still enable London-Birmingham journey times below 1 hour.

Operations at New Street will be rationalised to eliminate terminating trains, and thus maximise capacity; as part of this strategy, the route north-westwards towards Wolverhampton will be effectively 4-tracked by means of a new link from Soho Junction to Tame Bridge, to access the faster Grand Junction lines. This will considerably accelerate services to Manchester and Liverpool, extensions of high speed services from London operating on the classic network. This will also improve intercity access to Walsall, and will harmonise with proposals to re-establish the Wichnor-Walsall-Stourbridge freight corridor.

4-tracking is also proposed along the existing CrossCountry route from Birmingham to Derby, with line speeds generally enhanced to 250km/h (possible with the favourable near-straight alignment).

WMN5 : CONNECTIVITY OF LOCAL & INTERCITY RAIL NETWORK TO HIGH SPEED UK

Far greater connectivity can be achieved with the High Speed UK proposals, fully integrated with the existing network and accessing 11 existing regional centres (as against the 2 new stations proposed for HS2). New Street would remain the primary regional hub, but its operations would be streamlined through the elimination of terminating services, and effective 4-tracking of the approaches to south-east and north-west which could then operate far more efficiently as intercity routes, allowing Coventry, Walsall and Wolverhampton to become hub stations integral to the high speed network. Faster journey times and a greater range of destinations give greater connectivity; 4-tracking of New Street's approach routes offers much greater capacity for intercity and local services. Overall, HSUK creates a more diversified and higher capacity model of local to intercity connectivity, less reliant on primary hubs such as New Street.

The enhancements introduced by High Speed UK will also deliver major benefits to the Midlands regional network. The proposed new Soho-Tame Bridge link, the restoration of the Walsall-Lichfield route and the creation of a north-facing connection from Rugby to the 4-track HSUK trunk route all combine to establish a 'ring' of connectivity around the West and East Midlands. This ring would directly connect Birmingham-Birmingham International-Coventry-Rugby-Leicester-Loughborough-Derby-Burton-Lichfield-Walsall-Birmingham; and with short extensions, Wolverhampton, Northampton and Nottingham could also be included in the system.

This diagram, employing a traffic light system to illustrate proximity of any local station to the intercity/high speed network, clearly demonstrates the superior connectivity achieved by High Speed UK's more integrated and diverse system, when compared with the segregation of HS2.

WMN6 : CONNECTIVITY OF LOCAL & INTERCITY RAIL NETWORK TO HS2, WITH 'MIDLANDS RAIL HUB' IN PLACE

WMN7 : PROPOSED 'MIDLAND RING' SERVICES IN ASSOCATION WITH HIGH SPEED UK

WMN8 : MIDLANDS CONNECTIVITY TABULATION

In June 2019 Midlands Connect released proposals for the 'Midlands Rail Hub' (MRH). The MIdlands Rail Hub is the long-awaited scheme intended to:

- improve connectivity between East and West Midlands;
- integrate the local rail networks of the West and East Midlands with HS2; and
- enable Midlands residents to access HS2 services.

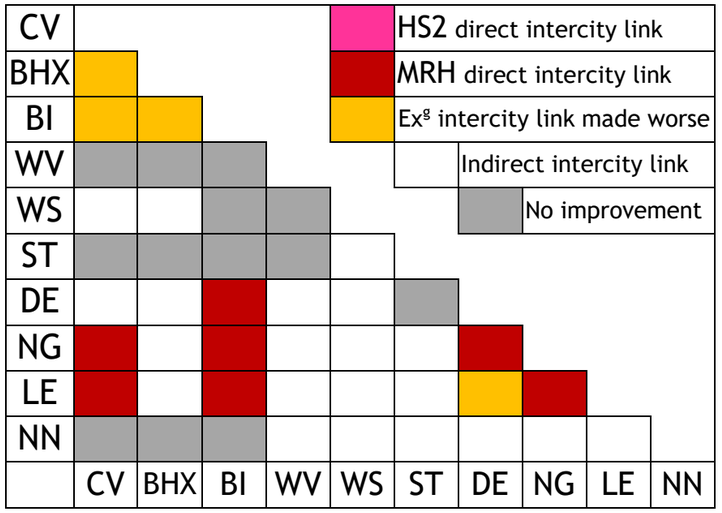
The centrepiece of the MRH scheme is the development of the currently disused terminus platforms at Birmingham Moor Street, with services extending (by means of new chord lines to the Saltley-Kings Norton 'Camp Hill' line) to Nottingham and Leicester, and to Bristol, Cardiff and Hereford. The proximity of Moor Street to the adjacent HS2 terminus at Curzon Street would allow the establishment of a dedicated travelator (or similar) link, for easy passenger transfer to HS2 services.

The MRH initiative would to some extent address both current congestion issues at Birmingham New Street, and also the disconnection between that station and HS2's Curzon Street station. However, MRH's benefits would be extremely limited. MRH would do nothing to improve links to HS2 along the Coventry/Walsall/ Wolverhampton axis, and it would not create the new or restored railway infrastructure (e.g. Nottingham/ Derby to Walsall/Wolverhampton or Northampton to Leicester/Nottingham/Derby) necessary to achieve comprehensive interconnection between the Midlands' principal cities.

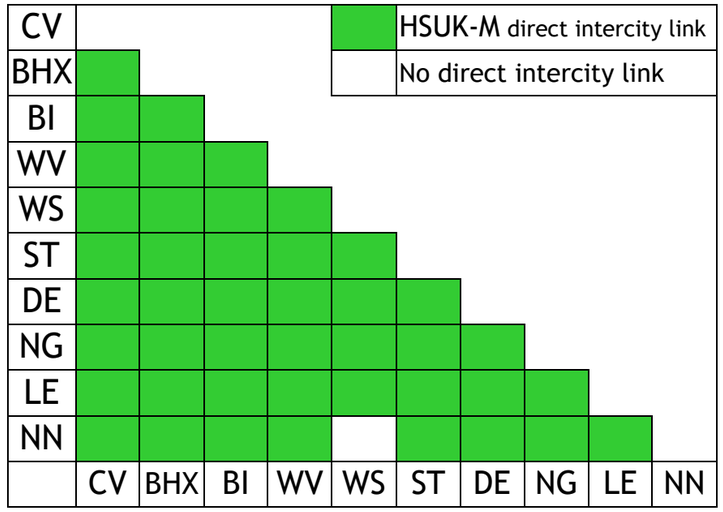
The extent of the lost opportunity that the Midlands Rail Hub represents can only be truly appreciated by contrasting its connectivity performance with that of High Speed UK in the Midlands. Unlike HS2's exclusive intervention of new-build high speed lines, the HSUK intervention comprises a blend of new construction, the 4-tracking of the key radial routes approaching Birmingham New Street, and the restoration of abandoned routes:

- 4-tracking of existing Rugby-Coventry-Birmingham International-Birmingham New Street route;
- New link between Soho Junction and Grand Junction lines at Tame Bridge (to create enhanced 4-track corridor north-west from Birmingham New Street);
- Restored route between Walsall and Lichfield (essential for improved network access to the regional freight hub at Bescot);
- Upgrade of Birmingham-Derby route to 4 tracks;
- Restoration of north side of 'Derby Teardrop' to allow through running between Burton-Derby line and onward route to Nottingham and Loughborough;
- New high speed line creating new link between Midland Main Line at Leicester and West Coat Main Line at Rugby.

Although these interventions are primarily intended to facilitate the creation of a national network, they also have the hugely beneficial effect of enabling the creation of a 'Midlands Ring' by which all the principal centres of the East and West Midlands can for the first time be fully interconnected by direct and frequent high speed services. The success of the HSUK Midlands Ring can be attributed to 2 principal factors: HSUK's full integration with the existing network, and its avoidance of terminus stations (in particular HS2's Birmingham Curzon Street and MRH's Birmingham Moor Street).



HS2/Midlands Rail Hub Connectivity Performance



HSUK Midlands Connectivity Performance

CV	Coventry
BHX	Birmingham Airport
BI	Birmingham
WV	Wolverhampton
WS	Walsall
ST	Stoke
DE	Derby
NG	Nottingham
LE	Leicester
NN	Northampton

Key to Abbreviations

An empirical calculation of Connectivity Index indicates that the HSUK national interventions will result in a 45% improvement in local/regional connectivity. By contrast, the intervention of HS2 creates no local connectivity benefits, and instead even with the intervention of the Midlands Rail Hub, only a 14% connectivity improvement is achieved.

WMN9 : HIGH SPEED UK AND ASSOCIATED FREIGHT DEVELOPMENTS

This diagram illustrates the High Speed UK strategy for development of railfreight corridors clear of congested intercity and commuter routes. Along these corridors, freight becomes 'prime user', no longer subject to the congestion at bottlenecks of the classic network which often renders it impossible to establish new interregional freight flows. This strategy would see existing freight flows routed via central Birmingham diverted to more peripheral routes – for instance, WCML container flows to Bescot diverted via Nuneaton and the Sutton Park line, and CrossCountry flows diverted onto a restored Stourbridge-Wichnor route. The latter would require restoration of the abandoned Stourbridge-Dudley-Walsall, and Walsall-Brownhills-Lichfield lines. For the section via Dudley, competing aspirations for extensions of the West Midlands Metro must be taken into account.

Restoration of the Stourbridge-Wichnor route harmonises well with wider aspirations for the development of a Continental Gauge freight network oriented parallel with High Speed UK. The north-south spine of this system would be routed via the Midland Main Line and the Ivanhoe Line, joining the 4-tracked CrossCountry Main Line at Burton on Trent; the restored Walsall-Lichfield section would offer direct access to Bescot Yard, and possibly other Black Country industrial areas.

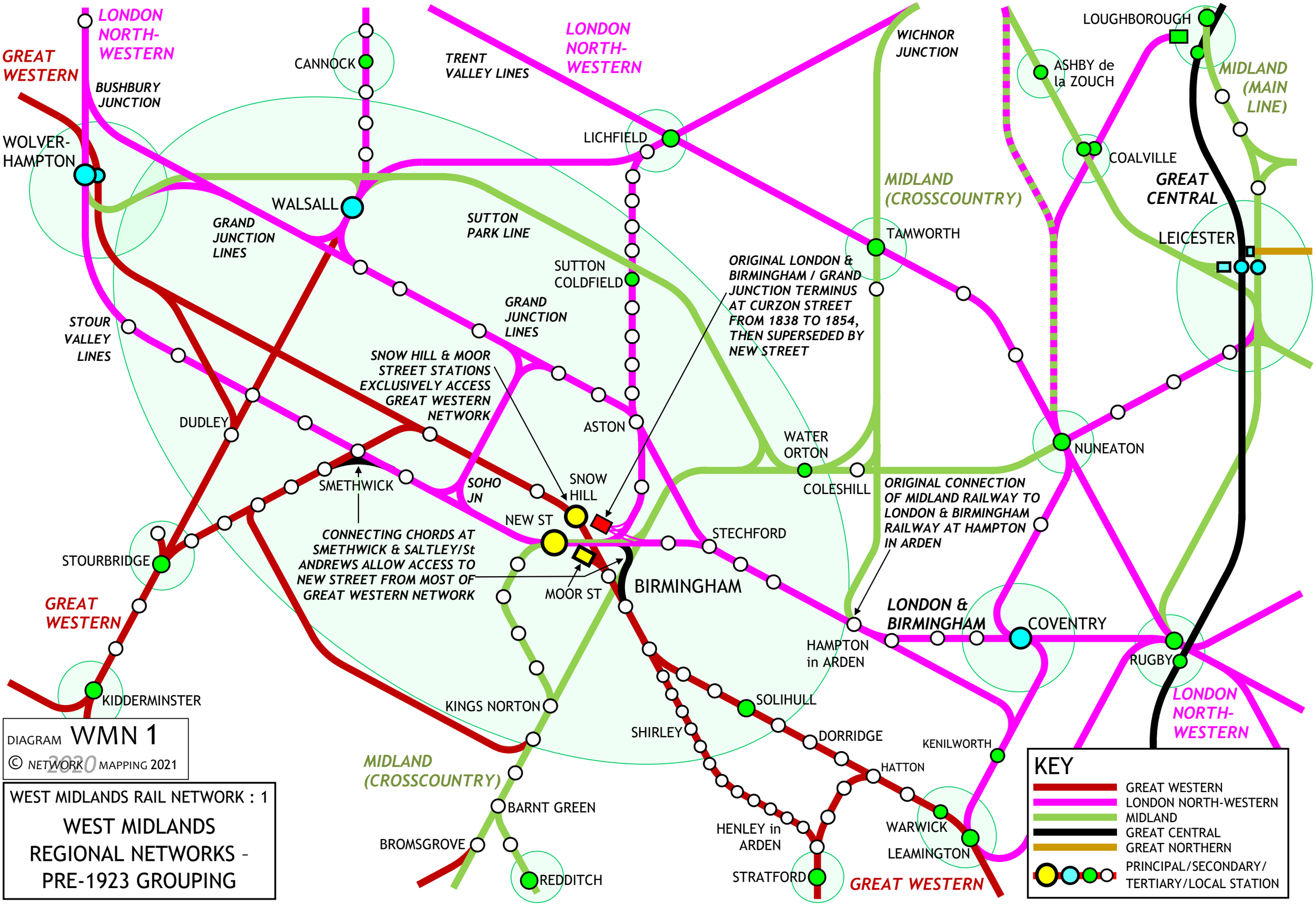
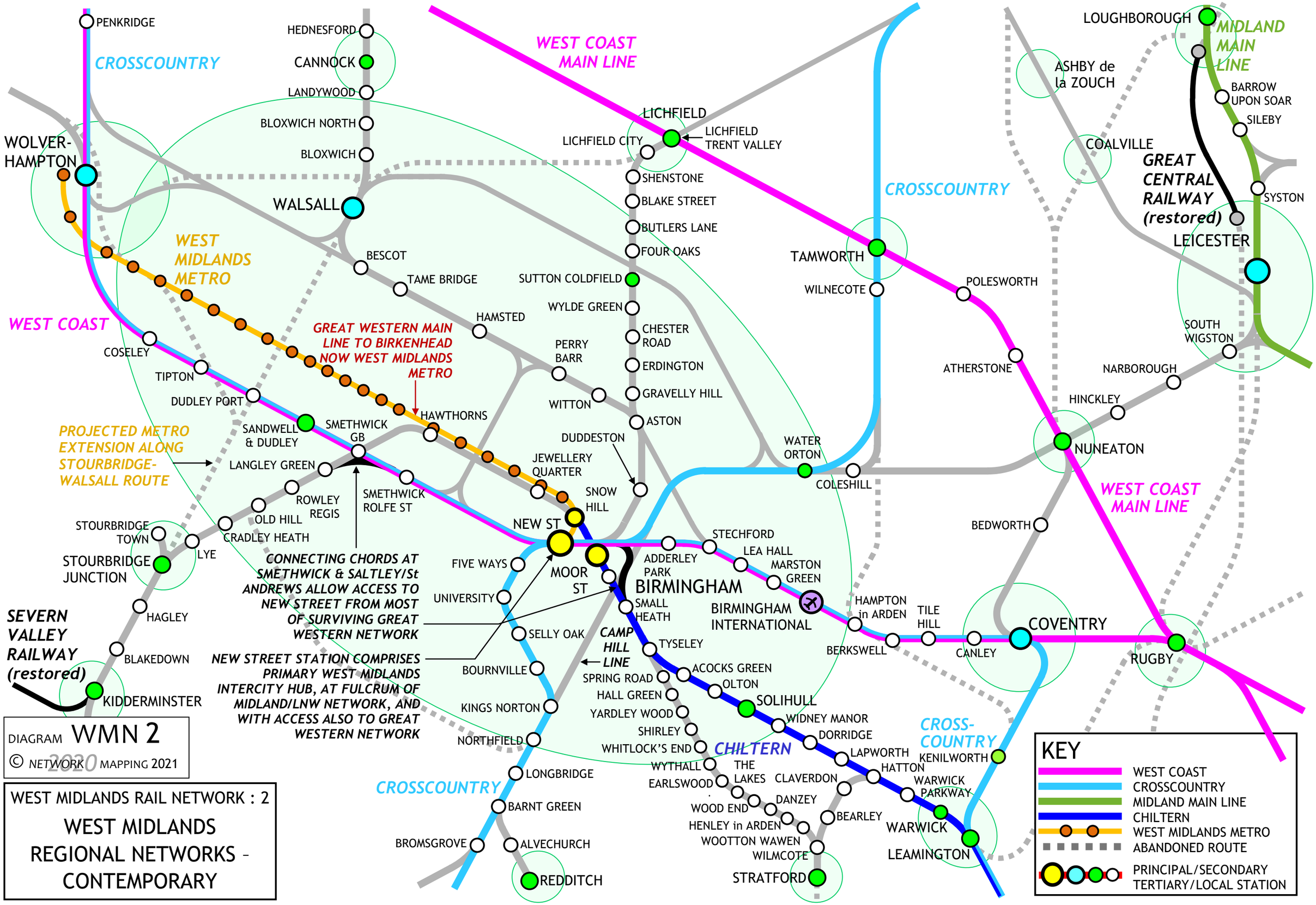


DIAGRAM WMN 1

WEST MIDLANDS RAIL NETWORK : 1

WEST MIDLANDS REGIONAL NETWORKS – PRE-1923 GROUPING


PENKRIDGE
CROSSCOUNTRY
HEDNESFORD
CANNOCK
LANDYWOOD
BLOXWICH NORTH
BLOXWICH
WOLVER-HAMPTON
WALSALL
WEST COAST MAIN LINE
LICHFIELD
LICHFIELD CITY
LICHFIELD TRENT VALLEY
SHENSTONE
BLAKE STREET
BUTLERS LANE
FOUR OAKS
CROSSCOUNTRY
TAMWORTH
WILNECOTE
POLESWORTH
LOUGHBOROUGH
MIDLAND MAIN LINE
ASHBY de la ZOUCH
BARROW UPON SOAR
SILEBY
COALVILLE
GREAT CENTRAL RAILWAY (restored)
SYSTON
LEICESTER
WEST MIDLANDS METRO
BESCOT
TAME BRIDGE
SUTTON COLDFIELD
WYLDE GREEN
HAMSTED
CHESTER ROAD
WEST COAST
COSELEY
TIPTON
GREAT WESTERN MAIN LINE TO BIRKENHEAD NOW WEST MIDLANDS METRO
PERRY BARR
ERDINGTON
SOUTH WIGSTON
ATHERSTONE
NARBOROUGH
DUDLEY PORT
WITTON
GRAVELLY HILL
HINCKLEY
HAWTHORNS
ASTON
PROJECTED METRO EXTENSION ALONG STOURBRIDGE-WALSALL ROUTE
SANDWELL & DUDLEY
SMETHWICK GB
DUDDESTON
WATER ORTON
NUNEATON
LANGLEY GREEN
JEWELLERY QUARTER
ROWLEY REGIS
SMETHWICK ROLFE ST
SNOW HILL
COLESHILL
WEST COAST MAIN LINE
OLD HILL
NEW ST
BEDWORTH
STOURBRIDGE TOWN
CRADLEY HEATH
STECHFORD
LYE
FIVE WAYS
ADDERLEY PARK
LEA HALL
MARSTON GREEN
STOURBRIDGE JUNCTION
MOOR ST
BIRMINGHAM
CONNECTING CHORDS AT SMETHWICK & SALTLEY/St ANDREWS ALLOW ACCESS TO NEW STREET FROM MOST OF SURVIVING GREAT WESTERN NETWORK
UNIVERSITY
SMALL HEATH
BIRMINGHAM INTERNATIONAL
HAMPTON in ARDEN
TILE HILL
HAGLEY
SELLY OAK
CAMP HILL LINE
TYSELEY
BERKSWELL
CANLEY
COVENTRY
SEVERN VALLEY RAILWAY (restored)
BOURNVILLE
ACOCKS GREEN
OLTON
RUGBY
BLAKEDOWN
SPRING ROAD
HALL GREEN
SOLIHULL
NEW STREET STATION COMPRISES PRIMARY WEST MIDLANDS INTERCITY HUB, AT FULCRUM OF MIDLAND/LNW NETWORK, AND WITH ACCESS ALSO TO GREAT WESTERN NETWORK
KINGS NORTON
YARDLEY WOOD
WIDNEY MANOR
KIDDERMINSTER
SHIRLEY
DORRIDGE
CROSS-COUNTRY
NORTHFIELD
WHITLOCK'S END
CHILTERN
LAPWORTH
KENILWORTH
WYTHALL
HATTON
THE LAKES
CLAVERDON
WARWICK PARKWAY
LONGBRIDGE
CROSSCOUNTRY
EARLSWOOD
DANZEY
BARNT GREEN
WOOD END
BEARLEY
WARWICK
HENLEY in ARDEN
WOOTTON WAWEN
LEAMINGTON
BROMSGROVE
ALVECHURCH
WILMCOTE
STRATFORD
REDDITCH
DIAGRAM WMN 2
© NETWORK 2020 MAPPING 2021
WEST MIDLANDS RAIL NETWORK : 2
WEST MIDLANDS REGIONAL NETWORKS – CONTEMPORARY
KEY
WEST COAST
CROSSCOUNTRY
MIDLAND MAIN LINE
CHILTERN
WEST MIDLANDS METRO
ABANDONED ROUTE
PRINCIPAL/SECONDARY
TERTIARY/LOCAL STATION

CONNECTIVITY OF WOLVERHAMPTON & PENKRIDGE TO HS2 VIA STAFFORD

CROSSCOUNTRY

WOLVER-HAMPTON

CANNOCK

WEST COAST MAIN LINE

SECOND PHASE EXTENSION TO MANCHESTER

FIRST PHASE CONNECTION TO WEST COAST MAIN LINE

LICHFIELD

CROSSCOUNTRY

HS2

ASHBY de la ZOUCH

SECOND PHASE EXTENSION TO LEEDS

LOUGH-BOROUGH

MIDLAND MAIN LINE

COALVILLE

WALSALL

0%
0

2%
0

SUTTON COLDFIELD

TAMWORTH

CONNECTIVITY OF LOUGHBOROUGH & LEICESTER TO HS2 DEPENDENT UPON NEW/ REORIENTED LOCAL SERVICES VIA NEW 'EAST MIDLANDS INTERCHANGE' AT TOTON

LEICESTER

6%
0

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

WEST COAST

HAWTHORNS

SANDWELL & DUDLEY

BIRMINGHAM

WATER ORTON

NUNEATON

CURZON ST

SNOW HILL

NEW ST

MOOR ST

HS2 CURZON STREET TERMINUS CONTIGUOUS WITH MOOR STREET BUT REQUIRING FOOT OR TRAM CONNECTION TO NEW STREET FOR WIDER WEST MIDS CONNECTIVITY. EXTRA 15 MINUTES ADDED FOR TRANSFER

20%
6

DEDICATED SHUTTLE LINK BETWEEN INTERCHANGE AND INTERNATIONAL/NEC/ AIRPORT. EXTRA 10 MINUTES ADDED FOR TRANSFER

BIRMINGHAM INTERCHANGE

WEST COAST MAIN LINE

STOURBRIDGE

23%
8

BIRMINGHAM INTERNATIONAL

COVENTRY

RUGBY

DIRECT LOCAL CONNECTIONS TO HS2 ONLY ALONG FORMER GREAT WESTERN ROUTES

9%
0

SOLIHULL

HS2

CROSSCOUNTRY

KIDDERMINSTER

KENILWORTH

CROSSCOUNTRY

BROMSGROVE

WARWICK

LEAMINGTON

REDDITCH

STRATFORD

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^{G} FURTHER CHANGE

DIAGRAM WMN 3

WEST MIDLANDS RAIL NETWORK : 3

CONNECTIVITY OF LOCAL & INTERCITY RAIL NETWORK TO HS2

PENKRIDGE

BUSHBURY JUNCTION

GRAND JUNCTION LINE ENHANCED FOR CIRCA 160km/h AS PRIMARY INTERCITY ROUTE FROM BIRMINGHAM TO NORTH-WEST. LOCAL 4-TRACKING AT EXISTING & NEW INTERMEDIATE STATIONS

UPGRADES/NEW ROUTES MARKED # TO BE CONSTRUCTED TO ACCOMMODATE CONTINENTAL-SIZED 'EUROGAUGE' ROLLING STOCK

CANNOCK

BROWNHILLS ROUTE RESTORED FOR XCOUNTRY LINKS VIA WALSALL AND POTENTIAL EUROGAUGE FREIGHT ROUTE TO BESCOT YARD

WOLVER-HAMPTON

BROWNHILLS

LICHFIELD

WILLENHALL

WALSALL

ALDRIDGE

STREETLY

DARLASTON

BESCOT

TAME BRIDGE

SUTTON COLDFIELD

WALMLEY

NEW LINK FROM SOHO JN TO TAME BRIDGE VIA HAWTHORNS TO CREATE VIRTUAL 4-TRACK CORRIDOR FROM BIRMINGHAM TO WOLVERHAMPTON/WALSALL

HAWTHORNS

MINWORTH

WATER ORTON STATION REBUILT IN 'VEE' OF DERBY & LEICESTER LINES

SANDWELL & DUDLEY

BIRMINGHAM

BROMFORD BRIDGE

WATER ORTON

FREIGHT ROUTE VIA DUDLEY RESTORED AS BYPASS TO CENTRAL BIRMINGHAM

SOHO JN

SNOW HILL

NEW ST

WASHWOOD HEATH

BIRMINGHAM INTERNATIONAL

POTENTIAL FUTURE EUROGAUGE HS SPUR TO BIRMINGHAM VIA M6 CORRIDOR C/W WCML LINK NEAR BRINKLOW

STOURBRIDGE

HIGH SPEED UK BIRMINGHAM TERMINAL AT NEW STREET. CURZON STREET SITE TO BE SAFE-GUARDED AS POTENTIAL THROUGH STATION INTERCHANGING WITH GREAT WESTERN NETWORK AND CAPABLE OF ACCOMMODATING EUROGAUGE TRAFFIC

MOOR ST

BIRMINGHAM INTERCHANGE

4-TRACKING ALONG BIRMINGHAM TO COVENTRY & DERBY CORRIDORS

HAMPTON in ARDEN

COVENTRY

RUGBY

FORMER MIDLAND ROUTE TO HAMPTON IN ARDEN RESTORED AS PART OF ORBITAL ROUTE TO BIRMINGHAM AIRPORT

KIDDERMINSTER

SOLIHULL

COVENTRY-LEAMINGTON LINE ENHANCED TO DOUBLE TRACK FOR FULL LENGTH, WITH RESTORED STATION AT KENILWORTH

KENILWORTH

UPGRADES/NEW ROUTES MARKED # TO BE CONSTRUCTED TO ACCOMMODATE CONTINENTAL-SIZED 'EUROGAUGE' ROLLING STOCK

UPGRADE OF EXISTING ROUTES TO TAKE PRIORITY OVER BUILDING DEDICATED EUROGAUGE HS SPUR TO BIRMINGHAM

WARWICK

LEAMINGTON

BROMSGROVE

REDDITCH

STRATFORD

CROSSCOUNTRY ROUTE FROM WATER ORTON TO DERBY GENERALLY UPGRADED TO 4 TRACKS &250/300km/h RUNNING

LOUGHBOROUGH

ASHBY de la ZOUCH

COALVILLE

IVANHOE LINE UPGRADED AS POTENTIAL EURO-GAUGE NORTH-SOUTH FREIGHT ROUTE, ALSO ACCESSING BESCOT

LEICESTER

#12

#11

TAMWORTH

SUTTON PARK LINE UPGRADED TO PASSENGER USE AS WEST MIDLANDS 'INNER RING' ROUTE TO BIRMINGHAM AIRPORT

LINES ELECTRIFIED TO PROVIDE DIVERSIONARY ROUTE FOR UPGRADE WORKS TO BIRMINGHAM-COVENTRY LINE

GRADE SEPARATION REQUIRED AT COVENTRY TO SEGREGATE FREIGHT & HS PASSENGER FLOWS

#10

NUNEATON

NORTHAMPTON LOOP FROM HSUK TO RUGBY UPGRADED TO 4 TRACKS, C/W NEW FLYOVERS AT RUGBY STATION TO ACCESS BIRMINGHAM & WEST COAST MAIN LINE

#09

#08

#07

KEY

- DEDICATED HIGH SPEED LINE
- UPGRADED EXISTING ROUTE
- NEW ROUTE & NEW STATION
- RESTORED ROUTE
- #24 LINK TO EXISTING NETWORK

DIAGRAM WMN 4

WEST MIDLANDS RAIL NETWORK : 4

HIGH SPEED UK AND OTHER DEVELOPMENTS TO LOCAL RAIL SYSTEM

CANNOCK

WOLVER-
HAMPTON

47%
27

AVE. JOURNEY
TIME REDUCTION
No OF CITIES
DIRECTLY LINKED

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

WILLENHALL

DARLASTON

WALSALL

59%
18

ALDRIDGE

BROWNHILLS

LICHFIELD

STREETLY

TAMWORTH

TAME BRIDGE

SUTTON
COLDFIELD

WALMLEY

HAWTHORNS

SANDWELL
& DUDLEY

BIRMINGHAM

MINWORTH

WATER
ORTON

BROMFORD
BRIDGE

SOHO JN

SNOW
HILL

NEW ST

WASHWOOD
HEATH

POTENTIAL FUTURE EUROGAUGE HS SPUR TO BIRMINGHAM VIA M6 CORRIDOR

STOURBRIDGE

HIGH SPEED UK BIRMINGHAM TERMINAL AT NEW STREET. CURZON STREET SITE TO BE SAFE-GUARDED AS POTENTIAL THROUGH STATION INTERCHANGING WITH GREAT WESTERN NETWORK AND CAPABLE OF ACCOMMODATING FUTURE EUROGAUGE TRAFFIC

MOOR
ST

36%
29

BIRMINGHAM
INTERNATIONAL

BIRMINGHAM
INTERCHANGE

44%
24

HAMPTON
in ARDEN

COVENTRY

48%
24

RUGBY

CONNECTIONS FROM NEW STREET TO WEST MIDS GREAT WESTERN NETWORK VIA EXISTING SPURS AT SMETHWICK AND SALTLEY / St ANDREWS

KIDDERMINSTER

SOLIHULL

KENILWORTH

COVENTRY GRADE SEPARATION PERMITS THROUGH SERVICE B'HAM-KENILWORTH

BROMSGROVE

REDDITCH

STRATFORD

WARWICK

LEAMINGTON

LOUGHBOROUGH

ASHBY de
la ZOUCH

COALVILLE

LEICESTER

62%
27

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

NUNEATON

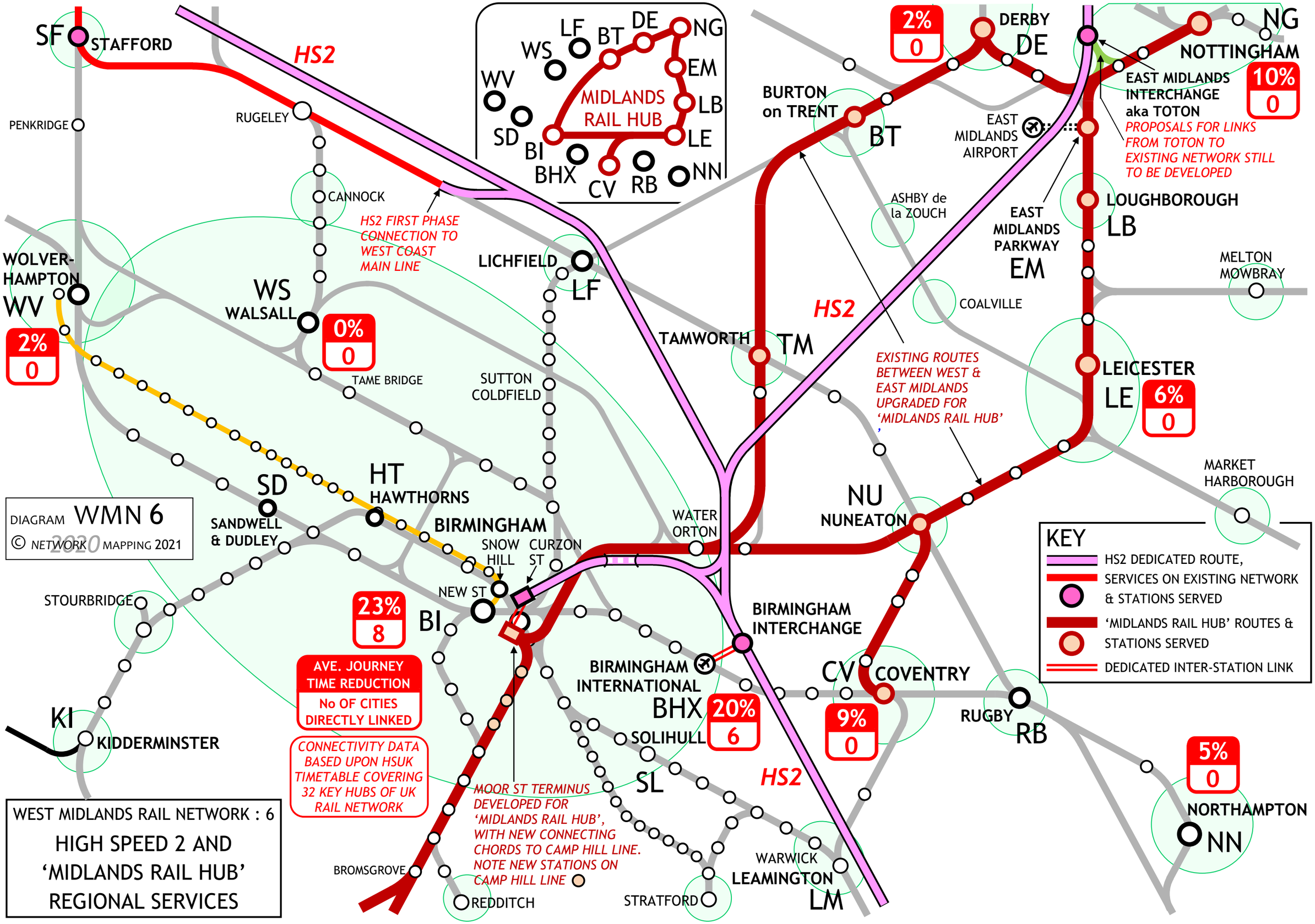
KEY

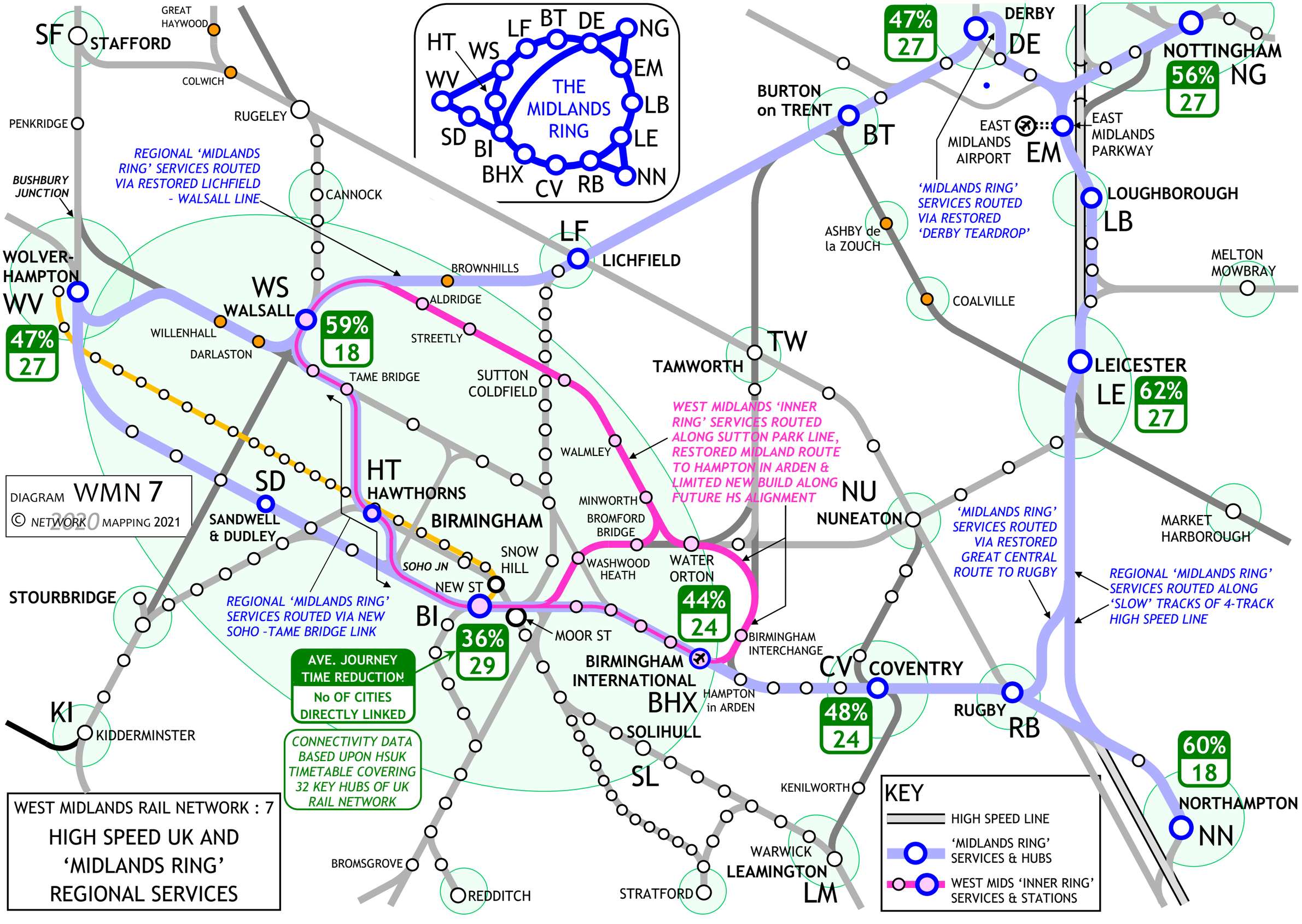
- HIGH SPEED NETWORK & HUBS WITH HS LINKS TO LONDON
- STATIONS AT 20/40/60 MINUTES FROM HS HUB
- STATION AT >60 MINUTES OR REQ^{G} FURTHER CHANGE

DIAGRAM WMN 5

WEST MIDLANDS RAIL NETWORK : 5

CONNECTIVITY OF LOCAL & INTERCITY RAIL NETWORK TO HIGH SPEED UK


SF
STAFFORD
HS2
PENKRIDGE
RUGELEY
CANNOCK
HS2 FIRST PHASE CONNECTION TO WEST COAST MAIN LINE
LICHFIELD
LF
WOLVER-HAMPTON
WV
2%
0
WS
WALSALL
0%
0
TAME BRIDGE
SUTTON COLDFIELD
SD
SANDWELL & DUDLEY
HT
HAWTHORNS
BIRMINGHAM
SNOW HILL
CURZON ST
NEW ST
BI
23%
8
STOURBRIDGE
KI
KIDDERMINSTER
AVE. JOURNEY TIME REDUCTION
No OF CITIES DIRECTLY LINKED
CONNECTIVITY DATA BASED UPON HSUK TIMETABLE COVERING 32 KEY HUBS OF UK RAIL NETWORK
BROMSGROVE
REDDITCH
MOOR ST TERMINUS DEVELOPED FOR 'MIDLANDS RAIL HUB', WITH NEW CONNECTING CHORDS TO CAMP HILL LINE. NOTE NEW STATIONS ON CAMP HILL LINE
STRATFORD
WARWICK
LEAMINGTON
LM
WATER ORTON
TAMWORTH
TM
HS2
EXISTING ROUTES BETWEEN WEST & EAST MIDLANDS UPGRADED FOR 'MIDLANDS RAIL HUB'
BIRMINGHAM INTERCHANGE
BIRMINGHAM INTERNATIONAL
BHX
20%
6
SOLIHULL
SL
HS2
CV
COVENTRY
9%
0
NU
NUNEATON
RUGBY
RB
5%
0
NORTHAMPTON
NN
MARKET HARBOROUGH
MELTON MOWBRAY
LOUGHBOROUGH
LB
EAST MIDLANDS PARKWAY
EM
COALVILLE
ASHBY de la ZOUCH
EAST MIDLANDS AIRPORT
BURTON on TRENT
BT
2%
0
DERBY
DE
NOTTINGHAM
NG
10%
0
EAST MIDLANDS INTERCHANGE aka TOTON
PROPOSALS FOR LINKS FROM TOTON TO EXISTING NETWORK STILL TO BE DEVELOPED
LEICESTER
LE
6%
0
MIDLANDS RAIL HUB
LF
BT
DE
NG
WS
EM
WV
LB
SD
LE
BI
BHX
CV
RB
NN
DIAGRAM WMN 6
© NETWORK 2020 MAPPING 2021
KEY
HS2 DEDICATED ROUTE, SERVICES ON EXISTING NETWORK & STATIONS SERVED
'MIDLANDS RAIL HUB' ROUTES & STATIONS SERVED
DEDICATED INTER-STATION LINK
WEST MIDLANDS RAIL NETWORK : 6
HIGH SPEED 2 AND 'MIDLANDS RAIL HUB' REGIONAL SERVICES


THE MIDLANDS RING
HT
WS
WV
LF
BT
DE
NG
EM
LB
LE
NN
CV
RB
BHX
BI
SD
SF
STAFFORD
GREAT HAYWOOD
COLWICH
RUGELEY
PENKRIDGE
BUSHBURY JUNCTION
REGIONAL 'MIDLANDS RING' SERVICES ROUTED VIA RESTORED LICHFIELD - WALSALL LINE
CANNOCK
WOLVER-HAMPTON
WV
47%
27
WS
WALSALL
59%
18
WILLENHALL
DARLASTON
BROWNHILLS
ALDRIDGE
STREETLY
TAME BRIDGE
SUTTON COLDFIELD
LF
LICHFIELD
TAMWORTH
TW
WALMLEY
WEST MIDLANDS 'INNER RING' SERVICES ROUTED ALONG SUTTON PARK LINE, RESTORED MIDLAND ROUTE TO HAMPTON IN ARDEN & LIMITED NEW BUILD ALONG FUTURE HS ALIGNMENT
HT
HAWTHORNS
BIRMINGHAM
MINWORTH
BROMFORD BRIDGE
NU
NUNEATON
SANDWELL & DUDLEY
SD
SOHO JN
SNOW HILL
NEW ST
WASHWOOD HEATH
WATER ORTON
44%
24
STOURBRIDGE
REGIONAL 'MIDLANDS RING' SERVICES ROUTED VIA NEW SOHO -TAME BRIDGE LINK
BI
36%
29
MOOR ST
BIRMINGHAM INTERCHANGE
BIRMINGHAM INTERNATIONAL
BHX
HAMPTON in ARDEN
CV
COVENTRY
48%
24
RUGBY
RB
AVE. JOURNEY TIME REDUCTION
No OF CITIES DIRECTLY LINKED
CONNECTIVITY DATA BASED UPON HSUK TIMETABLE COVERING 32 KEY HUBS OF UK RAIL NETWORK
KI
KIDDERMINSTER
SOLIHULL
SL
KENILWORTH
WARWICK
LEAMINGTON
LM
STRATFORD
BROMSGROVE
REDDITCH
DIAGRAM WMN 7
© NETWORK 2020 MAPPING 2021
WEST MIDLANDS RAIL NETWORK : 7
HIGH SPEED UK AND 'MIDLANDS RING' REGIONAL SERVICES
47%
27
DERBY
DE
BURTON on TRENT
BT
ASHBY de la ZOUCH
'MIDLANDS RING' SERVICES ROUTED VIA RESTORED 'DERBY TEARDROP'
EAST MIDLANDS AIRPORT
EM
EAST MIDLANDS PARKWAY
NOTTINGHAM
56%
27
NG
LOUGHBOROUGH
LB
MELTON MOWBRAY
COALVILLE
LEICESTER
LE
62%
27
'MIDLANDS RING' SERVICES ROUTED VIA RESTORED GREAT CENTRAL ROUTE TO RUGBY
MARKET HARBOROUGH
REGIONAL 'MIDLANDS RING' SERVICES ROUTED ALONG 'SLOW' TRACKS OF 4-TRACK HIGH SPEED LINE
60%
18
NORTHAMPTON
NN
KEY
HIGH SPEED LINE
'MIDLANDS RING' SERVICES & HUBS
WEST MIDS 'INNER RING' SERVICES & STATIONS

CONNECTIVITY BETWEEN MIDLANDS COMMUNITIES

DIAGRAM WMN 8
© NETWORK 2020 MAPPING 2021

Stafford	SF																					
Walsall	RY	WS																				
Wolverhampton		BI	WV																			
Sandwell&Dudley		BI		SD																		
Hawthorns	BI	BI	GB	GB	HT																	
Birmingham						BI																
International		BI			BI		BHX															
Coventry		BI			BI			CV														
Rugby		BI	CV	CV	BI				RB													
Northampton		BI	CV	CV	BI					NN												
Leicester	NU	BI	BI	BI	BI		BI	NU	NU	NU	LE											
Loughborough						LE						LB										
East Mids Airport						DE							EM									
Nottingham	TM	BI	BI	BI	BI		BI	BI	TM	TM				NG								
Derby	TM	BI	BI	BI	BI		BI	BI	TM	TM					DE							
Burton on Trent	TM	BI	BI	BI	BI		BI	BI	TM	TM	DE	DE	DE			BT						
Lichfield		AS	BI	BI	BI		BI	NU			NU			TM	TM	TM	LF					
Tamworth		BI	BI	BI	BI		BI	NU			NU	DE	DE					TM				
Nuneaton		BI	BI	BI	BI		CV					LE	LE	LE	LE	TW			NU			
Leamington		BI							CV	CV	BI			BI		BI	BI			LM		
Solihull	BI	BI	GB	GB			BI	LM	BI	BI	BI			BI	BI	BI	BI	BI	LM		SL	
Kidderminster	BI	BI	GB	GB			GB	GB	BI	BI	BI			BI	BI	BI	BI	BI	BI			KI
	SF	WS	WV	SD	HT	BI	BHX	CV	RB	NN	LE	LB	EM	NG	DE	BT	LF	TM	NU	LM	SL	KI

	Direct train linking community pair	79	x5 395
GB	Connection for community pair link	51	x3 153
BI	Connection via Birmingham New St	40	x2 80
BI	Walking connection via Birmingham	35	x1 35
	2 changes of trains required	26	x0 0
	Total connections/connectivity score	231	663

Number of connections
Weighting factor
Weighted connectivity score

Connectivity index = $\frac{663}{231}$=2.9

EXISTING CONNECTIVITY BETWEEN MIDLANDS COMMUNITIES

(refer to Plan WMN2)

Stafford	SF																					
Walsall	WV	WS																				
Wolverhampton			WV																			
Sandwell&Dudley		BI		SD																		
Hawthorns				GB	HT																	
Birmingham						BI																
International							BHX															
Coventry								CV														
Rugby				CV					RB													
Northampton		BI	CV	CV	CV					NN												
Leicester	NU			BI							LE											
Loughborough	RB			CV								LB										
East Mids Airport	RB			CV									EM									
Nottingham	LF			CV										NG								
Derby	LF			BI											DE							
Burton on Trent	LF			BI						TM						BT						
Lichfield				BI													LF					
Tamworth		LF	LF	BI	LF		BI	NU			NU	DE	DE					TM				
Nuneaton		LF	LF	BI	LF		CV					LE	LE	LE	LE	TM			NU			
Leamington		CV							CV	CV	CV	CV	CV	CV				BI		LM		
Solihull	GB	HT	GB	GB			BI	LM	BI	BI	BI	BI	BI	HT	HT	HT	HT	BI	LM		SL	
Kidderminster	GB	HT	GB	GB			GB	GB	GB	GB	HT	HT	HT	HT	HT	HT	HT	BI	BI			KI
	SF	WS	WV	SD	HT	BI	BHX	CV	RB	NN	LE	LB	EM	NG	DE	BT	LF	TM	NU	LM	SL	KI

	Direct train linking community pair	148	x5 740
GB	Connection for community pair link	64	x3 192
BI	Connection via Birmingham New St	10	x2 20
BI	Walking connection via Birmingham	9	x1 9
	2 changes of trains required	0	x0 0
	Total connections/connectivity score	231	961

Number of connections
Weighting factor
Weighted connectivity score

Connectivity index = $\frac{961}{231}$=4.2

HSUK ENHANCEMENTS TO MIDLANDS CONNECTIVITY

(refer to Plans WMN5 & WMN7)

AS	Aston
BI	Birmingham New St/Moor St
BHX	Birmingham International
BT	Burton on Trent
CV	Coventry
DE	Derby
EM	East Midlands Airport P/way
GB	Smethwick Galton Bridge
HT	Hawthorns
KI	Kidderminster
LM	Leamington
LE	Leicester
LF	Lichfield
LB	Loughborough
NG	Nottingham
NN	Northampton
NU	Nuneaton
RB	Rugby
RY	Rugeley
SD	Sandwell & Dudley
SF	Stafford
SL	Solihull
TM	Tamworth
WS	Walsall
WV	Wolverhampton

HS2/MIDLANDS RAIL HUB ENHANCEMENTS TO MIDLANDS CONNECTIVITY

(refer to Plans WMN3 & WMN6)

Stafford	SF																					
Walsall	RY	WS																				
Wolverhampton		BI	WV																			
Sandwell&Dudley		BI		SD																		
Hawthorns	BI	BI	GB	GB	HT																	
Birmingham						BI																
International		BI			BI		BHX															
Coventry		BI			BI			CV														
Rugby		BI	CV	CV	BI				RB													
Northampton		BI	CV	CV	BI					NN												
Leicester	NU	BI	BI	BI	BI		CV		NU	NU	LE											
Loughborough	BI	BI	BI	BI	BI		CV		NU	NU		LB										
East Mids Airport	BI	BI	BI	BI	BI		CV		NU	NU			EM									
Nottingham	TM	BI	BI	BI	BI		BI	BI	TM	TM				NG								
Derby	TM	BI	BI	BI	BI		BI	BI	TM	TM					DE							
Burton on Trent	TM	BI	BI	BI	BI		BI	BI	TM	TM	DE	DE	DE			BT						
Lichfield		AS	BI	BI	BI		BI	NU			NU	NU	NU	TM	TM	TM	LF					
Tamworth		BI	BI	BI	BI		BI	NU			NU	DE	DE					TM				
Nuneaton		BI	BI	BI	BI		CV								LE	TM			NU			
Leamington		BI							CV	CV	CV	CV	CV	CV			BI	BI		LM		
Solihull	BI	BI	GB	GB			BI	LM	BI	BI	BI	BI	BI	BI	BI	BI	BI	BI	LM		SL	
Kidderminster	BI	BI	GB	GB			GB	GB	BI	BI	BI	BI	BI	BI	BI	BI	BI	BI	BI			KI
	SF	WS	WV	SD	HT	BI	BHX	CV	RB	NN	LE	LB	EM	NG	DE	BT	LF	TM	NU	LM	SL	KI

	Direct train linking community pair	87	x5 435
GB	Connection for community pair link	58	x3 174
BI	Connection via B'ham New St/Moor St	59	x2 118
BI	Walking link between B'ham stations	27	x1 27
	2 changes of trains required	0	x0 0
	Total connections/connectivity score	231	754

Number of connections
Weighting factor
Weighted connectivity score

Connectivity index = $\frac{754}{231}$=3.3

PENKRIDGE

RUGELEY

WALSALL-RUGELEY LINE DEVELOPED AS ALTERNATE NORTHWARD FREIGHT ROUTE FROM WEST MIDLANDS, CLEAR OF POTENTIALLY CONGESTED BUSHBURY-STAFFORD GRAND JUNCTION LINE

BUSHBURY JUNCTION

CANNOCK

BROWNHILLS ROUTE RESTORED FOR XCOUNTRY FREIGHT LINKS VIA WALSALL & DUDLEY AND POTENTIAL EUROGAUGE FREIGHT ROUTE TO BESCOT YARD

WOLVER-HAMPTON

BROWNHILLS

LICHFIELD

WICHNOR JUNCTION

BURTON on TRENT

LOUGHBOROUGH

ASHBY de la ZOUCH

CROSSCOUNTRY ROUTE FROM WATER ORTON TO DERBY VIA WICHNOR JN GENERALLY UPGRADED TO 4 TRACKS PROVIDING CAPACITY FOR FREIGHT ON 'SLOW' TRACKS

ALL MIDLAND MAIN LINE FREIGHT FLOWS DIVERTED CLEAR OF LEICESTER

WALSALL

ALDRIDGE

WILLENHALL

STREETLY

DARLASTON

BESCOT

TAME BRIDGE

SUTTON COLDFIELD

COALVILLE

IVANHOE LINE UPGRADED AS POTENTIAL EURO-GAUGE NORTH-SOUTH FREIGHT ROUTE, ALSO ACCESSING BESCOT

LEICESTER

TAMWORTH

SUTTON PARK LINE COMPONENT OF ALTERNATE ROUTE FROM WCML TO BESCOT CLEAR OF COVENTRY-B'HAM CORRIDOR

PRIMARY NORTH-SOUTH FREIGHT ROUTE (WITH EUROGAUGE POTENTIAL) VIA MIDLAND MAIN LINE

WALMLEY

HAWTHORNS

MINWORTH

HAMS HALL

WATER ORTON

BROMFORD BRIDGE

NUNEATON

SANDWELL & DUDLEY

BIRMINGHAM

SOHO JN

SNOW HILL

WASHWOOD HEATH

FELIXSTOWE-NUNEATON FREIGHT FLOWS DIVERTED CLEAR OF LEICESTER VIA CORBY

NEW ST

GRADE SEPARATION REQUIRED AT COVENTRY TO SEGREGATE FREIGHT & HS PASSENGER FLOWS

STOURBRIDGE

FREIGHT ROUTE VIA DUDLEY RESTORED AS BYPASS TO CENTRAL BIRMINGHAM, RELIEVING MORE CENTRAL ROUTES

MOOR ST

STECHFORD

BIRMINGHAM INTERNATIONAL

FREIGHT FLOWS VIA STECHFORD DIVERTED VIA NUNEATON & SUTTON PARK

HAMPTON in ARDEN

COVENTRY

RUGBY

COVENTRY-NUNEATON & COVENTRY-LEAMINGTON LINES ENHANCED TO DOUBLE TRACK AS PART OF SOUTH COAST - WCML FREIGHT UPGRADE

DAVENTRY INTERNATIONAL

SOLIHULL

KENILWORTH

KIDDERMINSTER

BROMSGROVE

REDDITCH

STRATFORD

WARWICK

LEAMINGTON

DIAGRAM WMN 9

WEST MIDLANDS RAIL NETWORK : 9

HIGH SPEED UK AND ASSOCIATED FREIGHT DEVELOPMENTS

KEY

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