

# HSUK YORKSHIRE RAIL STRATEGY

In common with other metropolitan areas, local rail services in Yorkshire are experiencing sustained and continuing growth in passenger numbers. This increased demand - which is likely to accelerate under likely climate change and fuel supply scenarios - is putting the existing system under serious congestion pressure, and requires major development work in the coming decade to ensure that the local network has sufficient capacity to meet the needs of the region. Given the long timescales to completion, parallel longer-distance transport initiatives (such as HS2) and competing development pressures, there is a clear demand for a masterplan to guide development of the region's railway network, fully harmonised with national network requirements - yet no such plan appears to exist.

This document and enclosed diagrams set out the vision of an enhanced Yorkshire railway network capable of meeting the region's connectivity needs into the coming century. Although this vision can be judged on its own merits as a regional network, it is entirely complementary with the High Speed UK vision for a national network of intercity high speed lines. 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](http://www.highspeeduk.co.uk).

## YRS1 : SOUTH & WEST YORKSHIRE REGIONAL NETWORK - PRE-1923 GROUPING

The Yorkshire rail network was dominated by 6 major companies: Great Northern, North-Eastern, Midland, Great Central, London North-Western and Lancashire & Yorkshire. The Great Northern and the North-Eastern were primarily oriented north-south, and their main lines now comprise the present-day East Coast Main Line. The remaining companies each operated a separate transpennine route, respectively Hope Valley (Midland), Woodhead (Great Central), Diggle (London-North-Western) and Calder Valley (Lancashire & Yorkshire). It is significant to note that the largest cities of the region (ie Leeds, Bradford and Sheffield) were all served by 2 or more separate city centre stations (note in particular the Midland's short-lived Hunslet Lane terminus in Leeds, on almost the same site that HS2 Ltd originally proposed its New Lane terminus). With foot transfer necessary between these stations, this represented a major deficiency in connectivity across the region.

## YRS2 : SOUTH & WEST YORKSHIRE REGIONAL NETWORK - CONTEMPORARY

This diagram illustrates the concentration of intercity connectivity at the primary hubs of Leeds, Sheffield, York and Doncaster; all enjoy hourly or better frequencies on TransPennine, CrossCountry and East Coast (or Midland Main Line) routes. Both Leeds and Sheffield are now served by single city centre stations, at which intercity and local services are concentrated. By contrast Bradford (city population 300,000 vs 500,000 of Leeds) has retained its two separate opposed termini, and can only attract infrequent services (both East Coast and Grand Central) which must terminate in the city. This lack of connectivity has major adverse impacts on Bradford's prosperity.

## YRS3 : CONNECTIVITY BETWEEN YORKSHIRE COMMUNITIES

Rail connectivity between Yorkshire communities is identified by direct links (green) or by a requirement to change trains (brown), with a change at Leeds City Station specifically noted (pink). Key communities/centres lacking any rail connectivity ie Spen Valley and Leeds/Bradford Airport are shown white. 3 scenarios are considered:

- 1990 (effectively post Beeching);
- present day (and effectively the future also, under current official plans); and
- alternative ie the vision for radically improved Yorkshire rail connectivity presented in this document.

Significant connectivity improvements have been achieved between 1990 and 2012, mostly in the Calder Valley area, but these have come about through the reintroduction of passenger services onto freight-only lines, rather than through any programme of reopening closed routes, or creation of new links. Even with these limited improvements in place, the system remains primarily focussed on key hub stations, in particular Leeds City Station. This is the location under greatest capacity pressure, and this is where West Yorkshire Metro aim to provide even more capacity. Although significant benefits will accrue from greater capacity at Leeds, there are major concerns also in the concentration upon a single hub; economic benefits will also tend to concentrate there, to the detriment of other outlying centres, and the entire radial system is vulnerable to service disruption at the hub.

As the calculations of Connectivity Index demonstrate, greater connectivity results from a more symmetrical network comprising enhanced circumferential links to complement the radial routes on which the existing system is based. This will distribute the connectivity benefits far more evenly across the region, and create a better-connected, higher-capacity and more resilient system capable of delivering major economic benefit.

## YRS4 : EXISTING CONNECTIVITY FOCUSED UPON LEEDS AND SHEFFIELD

This diagram illustrates the primary focus of the existing West Yorkshire network upon Leeds City Station, and the contrast with the adjacent city of Bradford, served by 2 separate systems to north and south. It should be noted that Bradford's situation, of 2 opposed and disconnected terminus stations, is now unique among UK railway centres, and this may account at least in part for the city's depressed economic status. It is a matter of extreme concern, that all local strategic planning, by both local authorities and by West Yorkshire Metro, appears to be reinforcing this disparity. All colouring reflects existing Metro branding.

## YRS5 : PROPOSED ENHANCED AND DIVERSIFIED REGIONAL NETWORK

To increase the capacity and resilience of the local rail network, and to reduce its primary focus upon Leeds, it is essential to establish new circumferential corridors running clear of Leeds. Bradford CrossRail, connecting the networks to north and south of the city, is crucial to this strategy. This demands urgent review of current city centre development proposals, and also study of how the new railway can be constructed either above or through the recently completed Westfield development which blocks the most viable route for Bradford CrossRail across the city centre.

Together with restoration of the abandoned Spen Valley route and other key initiatives such as a revitalised Wakefield Kirkgate station, Bradford CrossRail will create a strong southern 'arc', linking Calderdale and Bradford with Kirklees and Wakefield Districts. Other initiatives such as a restored Woodhead corridor and Dearne Valley route will create an enhanced and diversified model of local connectivity with much reduced dependency upon existing hubs at Leeds City Station and Sheffield Midland.

## YRS6 : PROPOSED WORKS FOR ENHANCED LOCAL NETWORK

This diagram sets out the suite of interventions either desirable or necessary to realise the enhanced Yorkshire network shown on Diagram YRS5. Supporting text on the following pages describes the underlying rationales for each proposed intervention, with alphabetical cross-referencing.

## YRS7 : HIGH SPEED UK AND OTHER DEVELOPMENTS TO LOCAL RAIL SYSTEM

Within the Yorkshire region, High Speed UK will comprise the north-south Anglo-Scottish spine route, running clear of the major population centres and following the corridor of the M1 and ECML. Access to Sheffield and Leeds is achieved along the approach routes to the transpennine crossing via the restored Woodhead corridor. Many of the interventions detailed on Diagram YRS6 will also greatly facilitate the integration of the High Speed UK scheme with the local rail network; these interventions (again cross-referenced) are also set out on this diagram.

This diagram and others show HSUK's primary Sheffield station at the restored Victoria site. This is in line with the ambitions of Sheffield City Council to redevelop large nearby areas of former Don Valley industrial land. The new Sheffield Victoria station will also incorporate platforms on the existing main line into Sheffield Midland, just south-west of the former Attercliffe Road station. These new interchange platforms will enable passengers from Barnsley, Rotherham etc both to access HSUK's intercity services (connecting Sheffield directly to all principal UK cities) and also to access the new employment opportunities in the regeneration of the Sheffield's new Victoria Quarter.

The intervention of HSUK's new high speed lines and restored/upgraded routes will also enable a major expansion of Sheffield's suburban rail network. New stations are proposed in the Sheaf Valley to the south-west of Sheffield (Beauchief, Mill Houses and Heeley), in the Don Valley to the north-west (Hillsborough, Oughtibridge and Deepcar) and also along the axis of the new high speed line approaching Sheffield from the south-east (Waverley, Beighton, Killamarsh, Renishaw, Staveley and Markham Vale).

In the Leeds area, the suburban rail network is better developed, and here the priority is to create more capacity to enable greater service frequency on existing routes. Even with 17 platforms, Leeds City Station still represents the key constraint on the capacity of West Yorkshire's rail network. This capacity problem exists on account of the unbalanced flows into Leeds; with 6 lines approaching from the west, and 1 line approaching from the east, the majority of services terminate at Leeds and each arrival occupies its platform for a much longer period than a 'through' service would.

HSUK will enable capacity at Leeds City Station to be approximately doubled through 2 primary interventions:

- **Construction of Neville-Stourton Link** (Intervention N). This will enable all traffic approaching Leeds from the south east along the former Midland route (and entering the station from the west) to approach and enter the station from the east. Rather than terminate at Leeds as per current arrangements, services on this route will now be able to continue westwards, towards either Wakefield, Huddersfield, Bradford or the Aire Valley. This through working will typically occupy a platform for a much shorter period.
- **4-tracking from Leeds to Crossgates** (Intervention L) and **Restoration of Farnley Viaduct** (Intervention Z). This will create a reserved route for high speed intercity services through Leeds, and will provide much greater capacity for local services on both western and eastern approaches.

## YRS8 : CONNECTIVITY OF LOCAL & INTERCITY RAIL NETWORK TO HIGH SPEED UK

This diagram illustrates how the enhanced network would harmonise with the High Speed UK proposals for an integrated national high speed rail network. Rather than rely upon 2 transfer points between high speed and local services at Leeds and Sheffield, separate routes would branch off the new-build high speed lines, and access all key centres including York, Doncaster, Hull, Wakefield, Halifax, Huddersfield (en route to East Lancashire) and through Bradford to the Aire Valley. As noted above, local schemes such as Bradford CrossRail and Spen Valley restoration are essential to enable the connectivity benefits of the new high speed line to extend to surrounding communities, and are also highly desirable in terms of diverting flows away from Leeds City Station.

To illustrate the quality of the connectivity, 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. Within the West and South Yorkshire regions illustrated, high speed services will extend to 13 communities.

#### **YRS9 : HS2 PROPOSALS IN YORKSHIRE, ROUTED VIA MEADOWHALL (2012 - 2016)**

HS2 proposals in Yorkshire have undergone a series of changes as planners have sought to address the highly deficient connectivity of the original proposals published in 2012. Manifestly unsuitable proposals for a terminus station at New Lane, very close to the Midland Railway's original Hunslet Lane terminus and just as isolated, were finally abandoned in 2015, and replaced with proposals for terminus platforms contiguous with Leeds City Station. This revised plan still embodies major deficiencies, in particular the difficulty of running high speed services to 'satellite' centres eg Bradford, Skipton and Harrogate. The plans also make no allowance for future transpennine 'HS3' services.

The diagram shows HS2's much inferior connectivity compared with HSUK, with high speed services extending only to 3 Yorkshire cities. The same 'traffic light' system has been used to illustrate the quality of connectivity between high speed and local networks achieved by HS2.

The diagram also illustrates potential HS3/Northern Powerhouse Rail (NPR) routes between the principal cities of the Northern Powerhouse. The 2015 transpennine Leeds-Manchester route is based upon HSUK assessment of the new tunnels necessary to achieve 30 minute journey times along an upgraded existing route via Huddersfield.

#### **YRS10 : HS2/NPR PROPOSALS IN YORKSHIRE, ROUTED VIA MEXBOROUGH (2016 - present)**

HS2 proposals for Sheffield have also proved controversial, with the city's station to be located at Meadowhall, 5.5km from the city centre. Although this proved popular with nearby Barnsley and Rotherham, Sheffield City Council has consistently resisted the Meadowhall proposal, and has called instead for a city centre station located at the site of the former Sheffield Victoria station. It must be noted that so far, all official consideration of Sheffield Victoria has been of a station located on a circuitous loop off the original Meadowhall route.

Diagram YRS10 shows HS2 Ltd's new proposals in South Yorkshire, with the trunk route displaced to the east to bypass Sheffield, and a long loop created (66km from Alfreton to Thurnscoe) for HS2 services to access Sheffield Midland. Although this satisfies the political desire for a central station in Sheffield, the loop will greatly lengthen through journey times by over 20 minutes. The new proposals will have the effect of deterring through operation, and it seems highly questionable whether HS2's proposed services from Newcastle and Leeds to Birmingham will incorporate a stop at Sheffield. This would reduce HS2 services calling at Sheffield Midland to the 2 trains per hour proposed to link Sheffield and London; and given the fact that all train 'paths' on HS2's London-West Midlands 'stem' are already taken, this service is only achievable with splitting of HS2 services at Toton of HS2 services from London to Leeds and York.

HS2's plans (either current or previous) will also fail to realise any of the local connectivity benefits that the HSUK scheme will bring about (as documented in the commentary to Diagram YRS7). Overall, the switch from Meadowhall to Sheffield Midland seems certain to significantly reduce Sheffield's HS2 services, and to generally fragment HS2's service offering to the entire Yorkshire region. The new HS2 proposals also seem certain to provoke far more controversy than the previous scheme; the route is projected to pass through the new 'Shimmer' housing estate in Mexborough, with over 200 residential dwellings affected and many certain to require demolition. Aside from HS2 Ltd's proposals for Euston, this will be the greatest community impact of the entire HS2 scheme.

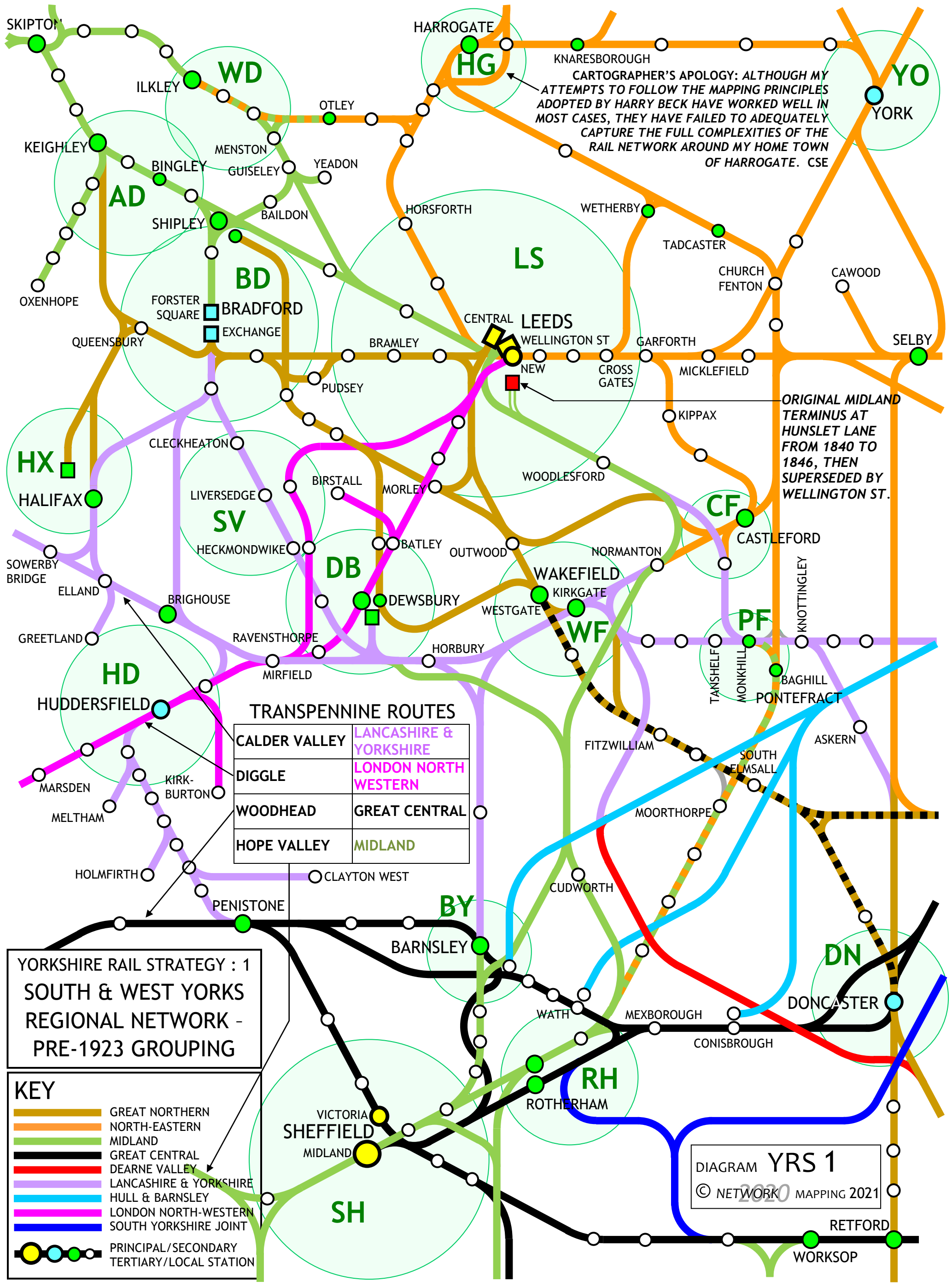
Diagram YRS10 also assesses the connectivity offered by HS2 from its 3 stations proposed for the Yorkshire region ie York, Leeds and Sheffield Midland. As before, this indicates a performance grossly inferior to that of HSUK, with any connectivity adduced to HS2 at Sheffield Midland greatly compromised by the very poor service levels on offer.

Diagram YRS10 shows the Transport for the North's latest proposals for a new transpennine railway linking Leeds and Manchester. This is to be routed via Bradford, and it will require around 33km of new tunnel to achieve the specified 30 minute journey time between Leeds and Manchester. However, there is no official commitment to a city centre station, with the acknowledged alternative of a parkway station 6km south of Bradford near the M62.

#### **YRS11 : HIGH SPEED UK AND ASSOCIATED FREIGHT DEVELOPMENTS**

The Yorkshire region sees major railfreight flows, both containerised traffic largely originating from southern ports, and also coal and biomass flows to Drax power station. The limited capacity (on both number of trains and size of wagons) on transpennine routes is a major constraint on railfreight. The potential for new transpennine freight flows arising from projected reopening of the Skipton-Colne route is greatly limited by congestion at the junctions immediately to the west of Leeds City Station.

This diagram shows the new transpennine freight corridor, extending to the Humber ports, that will come about with the restoration of the Woodhead route, and onward routes via Worsbrough Vale and the Dearne Valley. This will link with a dedicated north-south freight route, following the route of the former Yorkshire Midland Main Line, and extending along existing 4-track corridors generally capable of enhancement to accommodate Continental Gauge freight wagons. The diagram also details how the enhancements necessary to enable high speed passenger flows through Leeds City Station will also ease the flow of rail freight traffic through Leeds.



CARTOGRAPHER'S APOLOGY: ALTHOUGH MY ATTEMPTS TO FOLLOW THE MAPPING PRINCIPLES ADOPTED BY HARRY BECK HAVE WORKED WELL IN MOST CASES, THEY HAVE FAILED TO ADEQUATELY CAPTURE THE FULL COMPLEXITIES OF THE RAIL NETWORK AROUND MY HOME TOWN OF HARROGATE. CSE

ORIGINAL MIDLAND TERMINUS AT HUNSLET LANE FROM 1840 TO 1846, THEN SUPERSEDED BY WELLINGTON ST.

**TRANSPENNINE ROUTES**

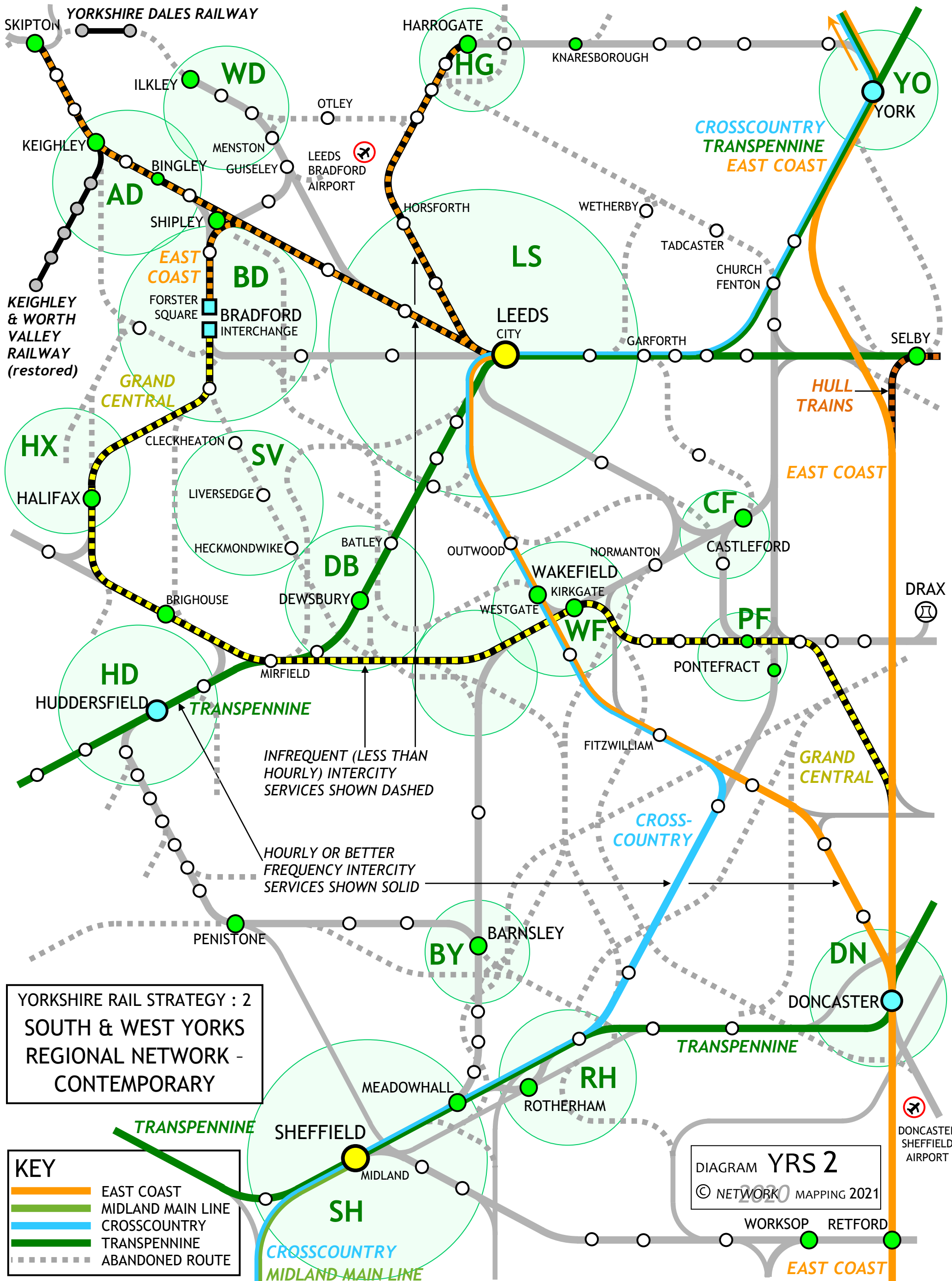
CALDER VALLEY	LANCASHIRE & YORKSHIRE
DIGGLE	LONDON NORTH WESTERN
WOODHEAD	GREAT CENTRAL
HOPE VALLEY	MIDLAND

**YORKSHIRE RAIL STRATEGY : 1**  
**SOUTH & WEST YORKS**  
**REGIONAL NETWORK -**  
**PRE-1923 GROUPING**

**KEY**

	GREAT NORTHERN
	NORTH-EASTERN
	MIDLAND
	GREAT CENTRAL
	DEARNE VALLEY
	LANCASHIRE & YORKSHIRE
	HULL & BARNESLEY
	LONDON NORTH-WESTERN
	SOUTH YORKSHIRE JOINT
	PRINCIPAL/SECONDARY
	TERTIARY/LOCAL STATION

DIAGRAM **YRS 1**  
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# CONNECTIVITY BETWEEN YORKSHIRE COMMUNITIES

DIAGRAM YRS 3  
 © NETWORK 2020 MAPPING 2021

Community	WD	AD	HG	YO	LS	LBA	BD	HX	SV	DB	WF	CF	PF	HD	BY	SH	RH	DN	
WHARFEDALE	WD																		
AIREDALE	SY	AD																	
HARROGATE	LS	LS	HG																
YORK	LS	LS		YO															
LEEDS					LS														
L/B AIRPORT						LBA													
BRADFORD							BD												
HALIFAX								HX											
SPEN VALLEY									SV										
DEWSBURY										DB									
WAKEFIELD											WF								
CASTLEFORD												CF							
PONTEFRACT													PF						
HUDDERSFIELD														HD					
BARNESLEY																			
SHEFFIELD																	SH		
ROTHERHAM																		RH	
DONCASTER																			DN

Legend: Direct train linking community pair (Green), Connection for community pair link (Orange), Connection via Leeds City Station (Purple).  
 Total connections/connectivity score: 120 / 205  
 Connectivity index =  $\frac{205}{120} = 1.7$

## CONNECTIVITY circa 1990 BETWEEN YORKSHIRE COMMUNITIES

Community	WD	AD	HG	YO	LS	LBA	BD	HX	SV	DB	WF	CF	PF	HD	BY	SH	RH	DN	
WHARFEDALE	WD																		
AIREDALE	SY	AD																	
HARROGATE	LS	LS	HG																
YORK	LS	LS		YO															
LEEDS					LS														
L/B AIRPORT						LBA													
BRADFORD							BD												
HALIFAX								HX											
SPEN VALLEY									SV										
DEWSBURY										DB									
WAKEFIELD											WF								
CASTLEFORD												CF							
PONTEFRACT													PF						
HUDDERSFIELD														HD					
BARNESLEY																			
SHEFFIELD																		SH	
ROTHERHAM																		RH	
DONCASTER																			DN

Legend: Direct train linking community pair (Green), Connection for community pair link (Orange), Connection via Leeds City Station (Purple).  
 Total connections/connectivity score: 120 / 219  
 Connectivity index =  $\frac{219}{120} = 1.8$

## EXISTING CONNECTIVITY BETWEEN YORKSHIRE COMMUNITIES (refer to Plan YRS4)

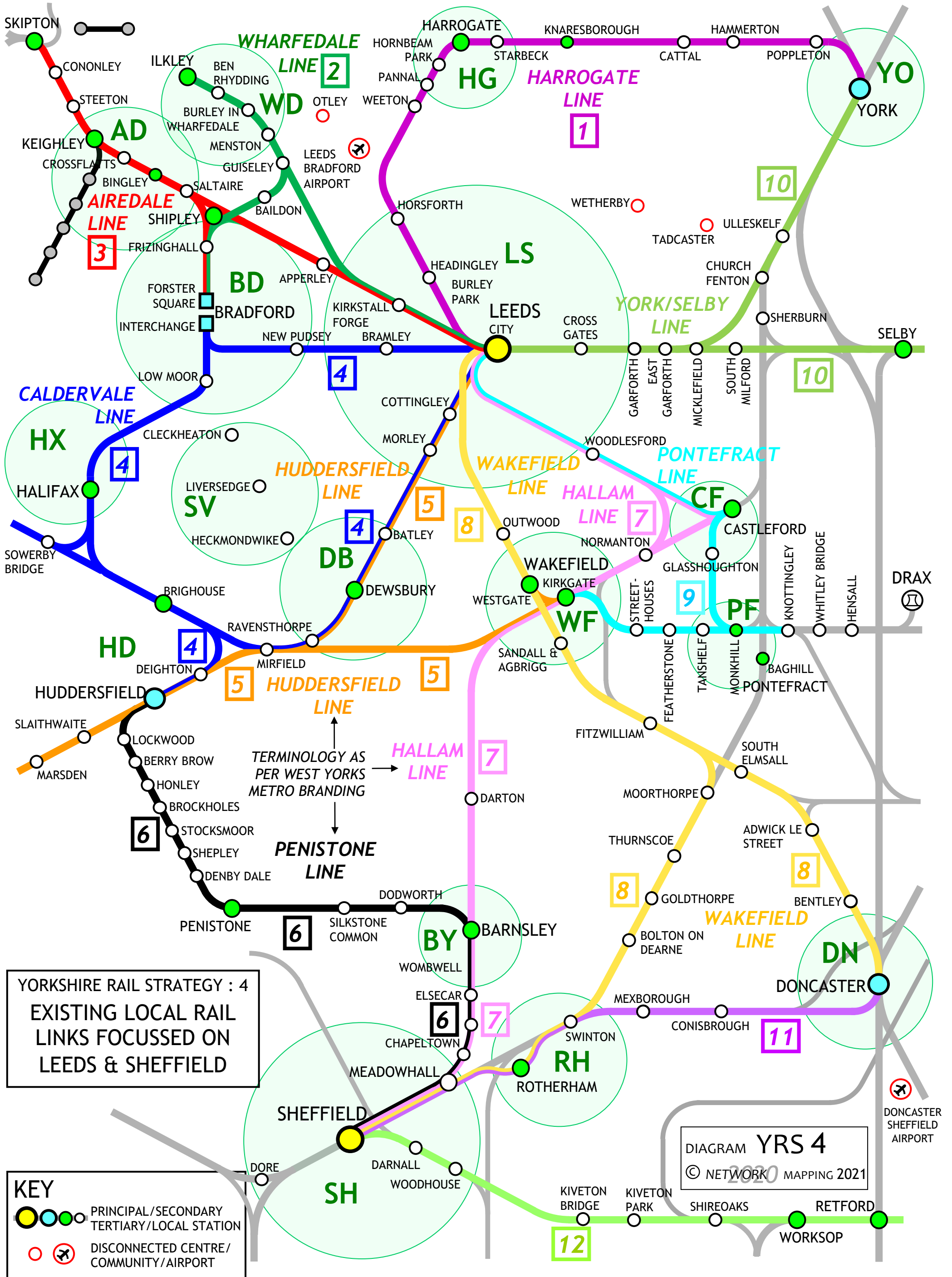
Community	WD	AD	HG	YO	LS	LBA	BD	HX	SV	DB	WF	CF	PF	HD	BY	SH	RH	DN	
WHARFEDALE	WD																		
AIREDALE	SY	AD																	
HARROGATE	LS	LS	HG																
YORK	LS	LS		YO															
LEEDS					LS														
L/B AIRPORT	MS	SY	HF	LS		LBA													
BRADFORD							BD												
HALIFAX								HX											
SPEN VALLEY									SV										
DEWSBURY										DB									
WAKEFIELD											WF								
CASTLEFORD												CF							
PONTEFRACT													PF						
HUDDERSFIELD														HD					
BARNESLEY																			
SHEFFIELD																		SH	
ROTHERHAM																		RH	
DONCASTER																			DN

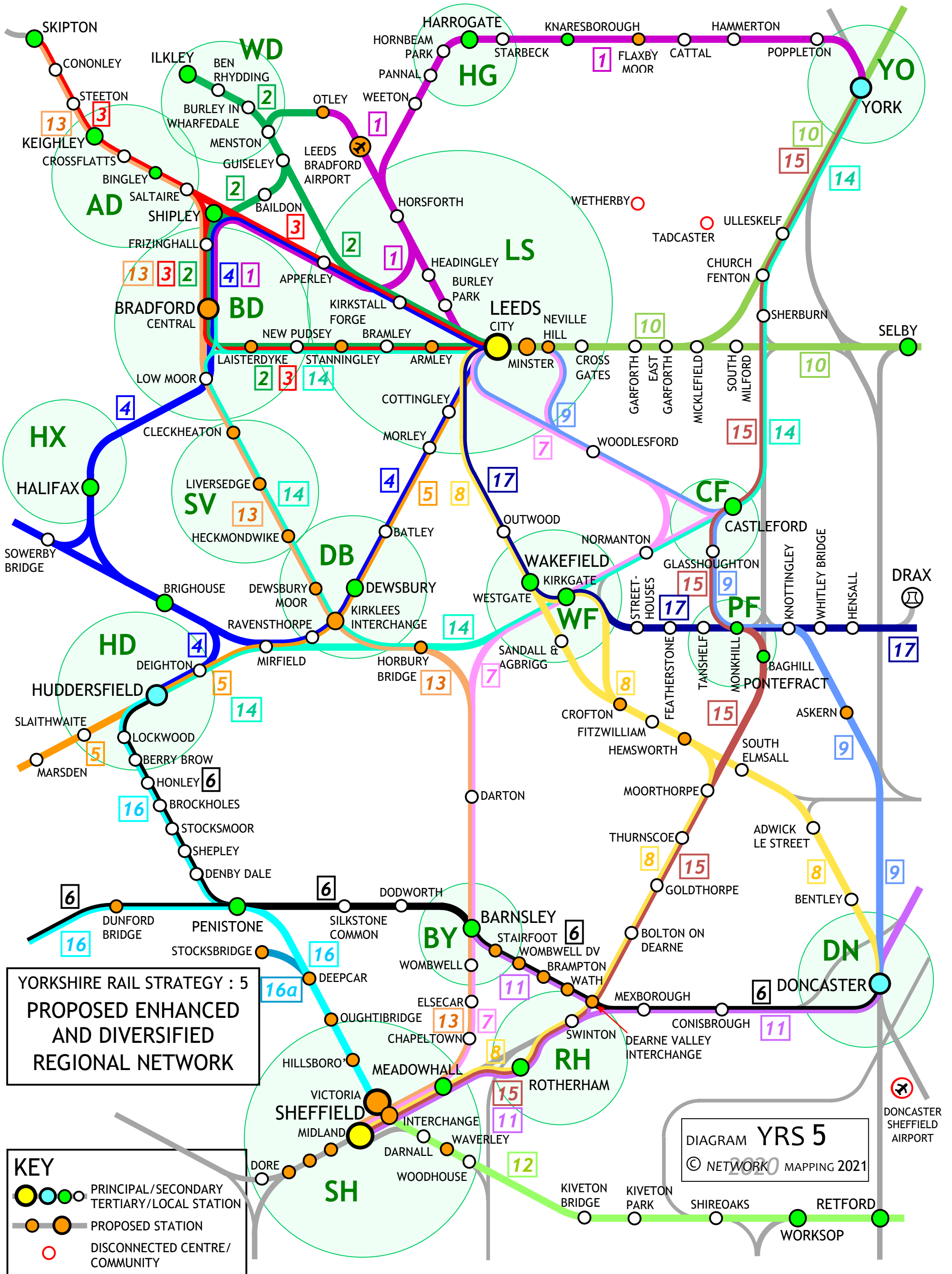
Legend: Direct train linking community pair (Green), Connection for community pair link (Orange), Connection via Leeds City Station (Purple).  
 Total connections/connectivity score: 153 / 345  
 Connectivity index =  $\frac{345}{153} = 2.3$

## PROPOSED CONNECTIVITY BETWEEN YORKSHIRE COMMUNITIES (refer to Plan YRS5)

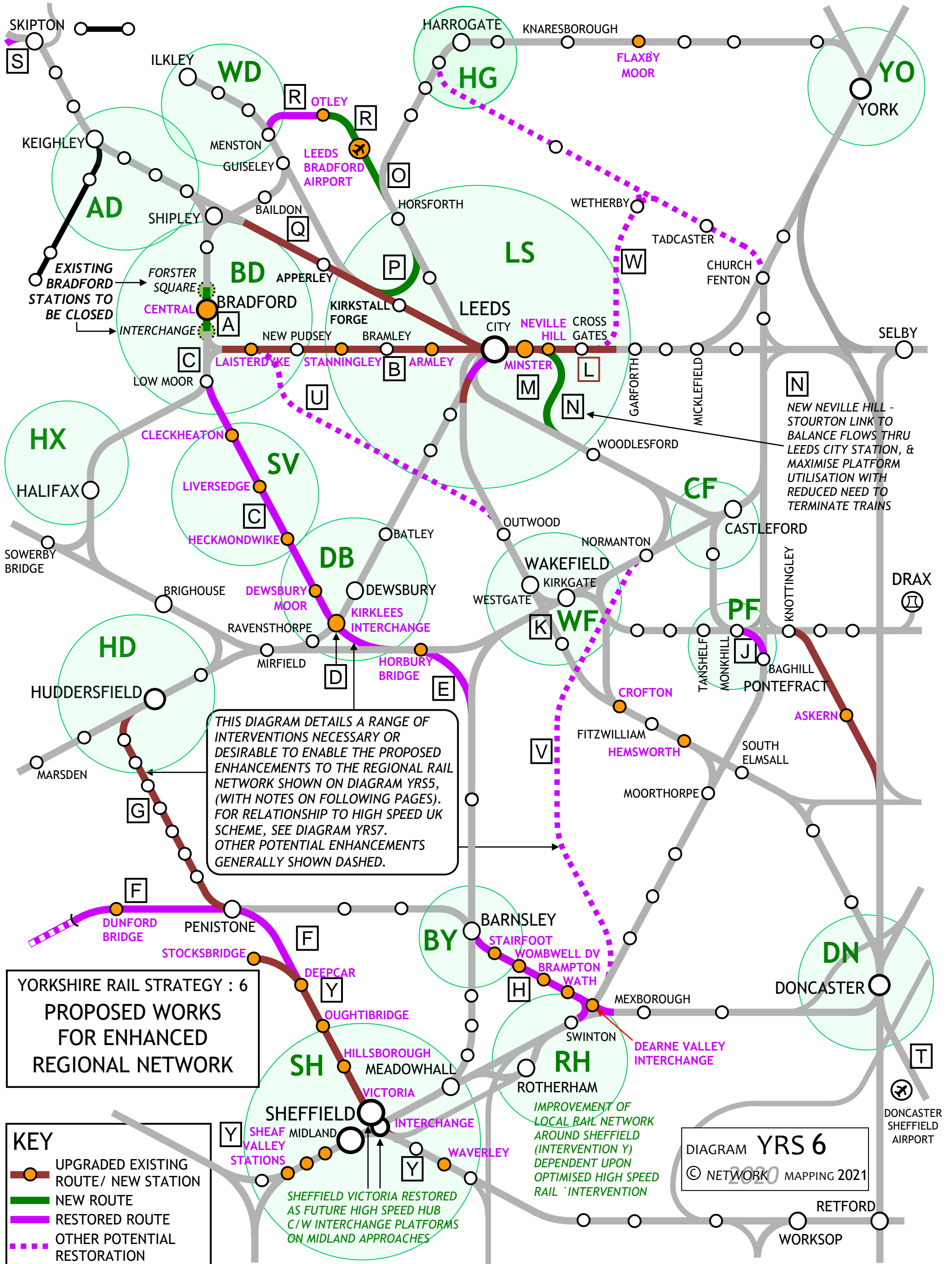
AD	Airedale
BD	Bradford
BH	Brighouse
BY	Barnsley
CF	Castleford
DB	Dewsbury
DN	Doncaster
DV	Deerne Valley Interchange
HD	Huddersfield
HF	Horsforth
HG	Harrogate
HX	Halifax
KG	Wakefield Kirkgate
KI	Kirklees Interchange
LM	Low Moor
LS	Leeds
MH	Meadowhall
PF	Pontefract
RH	Rotherham
SH	Sheffield
SV	Spen Valley
SY	Shipy
WD	Wharfedale
WF	Wakefield
Wo	Wodlesford
YO	York

**NOTE THAT HS2  
 WILL DELIVER  
 NO SIGNIFICANT  
 CONNECTIVITY  
 ENHANCEMENTS  
 WITHIN THE  
 YORKSHIRE REGION  
 (refer to Plan YRS9)**









THIS DIAGRAM DETAILS A RANGE OF INTERVENTIONS NECESSARY OR DESIRABLE TO ENABLE THE PROPOSED ENHANCEMENTS TO THE REGIONAL RAIL NETWORK SHOWN ON DIAGRAM YRS5, (WITH NOTES ON FOLLOWING PAGES). FOR RELATIONSHIP TO HIGH SPEED UK SCHEME, SEE DIAGRAM YRS7. OTHER POTENTIAL ENHANCEMENTS GENERALLY SHOWN DASHED.

**YORKSHIRE RAIL STRATEGY : 6  
PROPOSED WORKS  
FOR ENHANCED  
REGIONAL NETWORK**

**KEY**

- UPGRADED EXISTING ROUTE/ NEW STATION
- NEW ROUTE
- RESTORED ROUTE
- OTHER POTENTIAL RESTORATION

DIAGRAM **YRS 6**  
© NETWORK MAPPING 2021

SHEFFIELD VICTORIA RESTORED AS FUTURE HIGH SPEED HUB C/W INTERCHANGE PLATFORMS ON MIDLAND APPROACHES

IMPROVEMENT OF LOCAL RAIL NETWORK AROUND SHEFFIELD (INTERVENTION Y) DEPENDENT UPON OPTIMISED HIGH SPEED RAIL INTERVENTION

NEW NEVILLE HILL - STOURTON LINK TO BALANCE FLOWS THRU LEEDS CITY STATION, & MAXIMISE PLATFORM UTILISATION WITH REDUCED NEED TO TERMINATE TRAINS

EXISTING BRADFORD STATIONS TO BE CLOSED

DONCASTER SHEFFIELD AIRPORT

## PROPOSED WORKS FOR ENHANCED YORKSHIRE NETWORK SHOWN ON DIAGRAM YRS5

(Refer also to Plans YRS6 & YRS7)

### **A Bradford CrossRail**

Bradford CrossRail comprises a new rail link across the city centre, linking northern system (to Forster Square) and southern system (to Interchange). Forster Square & Interchange stations will be closed, with new 'Bradford Central' station on site of former Bradford Exchange. New alignment takes advantage of generally clear corridor across city centre, and would pass on new viaduct over new Westfield retail development at second floor level, with major permanent impacts only on the currently closed Debenhams department store. Bradford Central would comprise 4 through platforms circa 250m long on former Exchange station site, with south end exit to existing bus interchange, and north end exit to Westfield.

### **B Electrification of Great Northern route to Bradford via New Pudsey**

Establishment of 'CrossRail' link across centre of Bradford allows longer distance Caldervale services to be diverted via Shipley and run north-south through Bradford, with no need for reversal. Current Airedale & Wharfedale services to Bradford Forster Square can be extended to Leeds via New Pudsey, with new stations at Laisterdyke, Stanningley & Armley to create high frequency 'metro' service levels along highly populated corridor (contrast with low population densities along Aire Valley where new stations have been recently built at Apperley and Kirkstall Forge). Electrification of high level Great Northern route via New Pudsey is essential. Current major impediment to electrification of New Pudsey line is Stanningley Tunnel, which will probably require track lowering (and reinstatement as slab track) to create electrification clearances. Disruption associated with necessary blockade will be hugely mitigated by Bradford CrossRail, allowing Aire Valley line to be used as diversionary route.

*(Establishment of 'CrossRail' avoids current loss of focus along Aire Valley, whereby East Coast intercity services extending north-west from Leeds cannot serve both Bradford and Keighley/Skipton, and hence suffer from poor load factors - which must be a major deterrent to increasing current service levels beyond a single train per day. Bradford and Aire Valley should both benefit from new possibility of unified service. Note also potential for improved access to UK high speed network at Horbury Chord allowing direct services to run London-Leicester-Sheffield-Bradford-Skipton-East Lancs).*

### **C Spen Valley restoration & Hammerton Street chord restoration**

Establishment of 'CrossRail' greatly improves viability of rail restoration along Spen Valley route, serving Cleckheaton, Liversedge and Heckmondwike. This allows possibility of commuter services from 'Cleckmondsedge' to Bradford and (via restored Hammerton Street chord) to Leeds, also longer distance service from Sheffield via Barnsley and Bradford to Skipton and also long distance services as noted above. Restoration of Hammerton Street chord will also offer possibility of accessing alternative sites for depots and railfreight opportunities. Note that Spen Valley trackbed is currently occupied by a cycleway and a major water main, both of which would require diversion or accommodation within the new scheme.

### **D Kirklees Interchange**

New interchange to be created at intersection of Spen Valley and Transpennine routes to allow Spen Valley connections to Huddersfield, Dewsbury and Leeds. This should spur redevelopment of rail-locked site on south bank of River Calder, a new regeneration hub close to canal and river, with direct rail links to Leeds, Bradford, Halifax, Huddersfield and Wakefield.

### **E Horbury Chord restoration**

Restoration of south-to-west Horbury chord will enable direct Sheffield-Bradford services and is appropriately aligned for chord connection to M1-aligned new high speed line. New station proposed at Horbury Bridge.

### **F Woodhead Corridor restoration**

Restoration of abandoned 'Woodhead' rail corridor linking Greater Manchester and South Yorkshire is vital to creating extra capacity and resilience on Transpennine routes. Capacity on all Transpennine routes is likely to become critical by the end of the decade, and 'step-change' interventions such as the reinstatement of existing routes, or the establishment of new routes, are the only practicable means of creating necessary new capacity. Restored/new routes also allow much greater resilience of operation (note that with no diversionary route available, any disruption or maintenance work on Hope Valley line requires emergency bus services to operate between two of England's 'top 10' cities) and will hugely facilitate the forthcoming electrification of existing Transpennine routes.

Woodhead restoration involves the establishment of a new 4-track Transpennine rail corridor, both along existing trackbeds (from Hadfield to Penistone, and Penistone eastwards to connect to the residual Don Valley route near Deepcar) and on new parallel alignments for greater speed/structure gauge. There are four principal 'stakeholders' in Woodhead restoration:

- Long-haul freight - primarily container flows from ports to extended hinterlands no longer constrained by Pennine barrier (note that none of the tunnelled Transpennine routes are cleared for 9'6" containers on standard wagons).
- Short-haul freight - primarily HGV flows on A628(T) Woodhead road, and other unsuitable Transpennine routes, transferred to lorry-carrying shuttle trains of much wider/taller profile than existing rolling stock.
- Local passengers - reestablishment of Woodhead corridor connects Pennine communities in Longdendale to employment opportunities in Sheffield, and Doncaster, Barnsley and Penistone to Manchester. This will also create improved public transport access to Peak District National Park. This might also include a rail link to Stocksbridge, as proposed by the Don Valley Railway group.
- Long-distance passengers - improved Transpennine link via Woodhead and restored Sheffield Victoria station is crucial to creating optimised national high speed rail system, interconnecting all major UK conurbations.

Routeing of National Grid power cables through the 1954 Woodhead tunnel, and leisure use of redundant trackbeds, create major conflicts with ambitions for railway development which will require 4 tracks throughout for passengers and freight. Alternative corridors (not alignment-critical, as per railways) must be found to accommodate these non-railway uses.

### **G Penistone - Huddersfield redoubling**

This would greatly increase capacity, and permit operation of a half-hourly service on the Sheffield-Huddersfield route.

### **H Worsbrough Vale and Dearne Valley restoration**

Restoration of Woodhead route leads logically to restoration of Worsbrough Vale and Dearne Valley routes via Wath to Mexborough, with passenger services extending to Doncaster and freight to East Coast ports. Existing DV trackbed blocked in several places by modern industrial development, hence preferred restored railway alignment would follow new spine roads.

## **J Pontefract Baghill - Monkhill chord restoration.**

Restoration of chord connecting Baghill and Monkhill lines allows York-Sheffield local services on S&K route (currently operating at skeletal service levels) to be diverted via Glasshoughton (for Xscape leisure centre) and Castleford. This creates much enhanced connectivity for 'Five Towns' area and greatly improves viability of York-Sheffield local service.

## **K Wakefield Kirkgate upgrade**

Wakefield Kirkgate comprises natural rail hub of lower Calder Valley, and is crucial to improving wider rail connectivity of Five Towns area (ie Castleford, Pontefract et al). Even after recent cosmetic improvements, the station still comprises a major deterrent to rail travel. Particular problems are the listed Lancashire & Yorkshire station building, inappropriate to modern railway use, and the undesirable access/egress route to the north. Optimum solution appears to be:

- Concentrate rail activities on island platform to south, with revised track alignments / signalling to allow all Up/Down moves to access this platform.
- Construct new station entrance to south side, for more direct access to Kirkgate and possible bus interchange.
- Restore listed structure for non-railway community use.

## **L East Leeds 4-tracking**

4-track capacity along full length of Leeds-York corridor is considered essential to meet projected increased demand, arising from both local and intercity/high speed services. The most urgent issue is the 2-track viaduct immediately east of Leeds City station. This appears to be eminently achievable, with no major land take issues (generally, footprint of extended viaduct is occupied by either car parking or low-rise, low-rent commercial property). Further east in suburban Leeds (ie Neville Hill, Osmondthorpe and Cross Gates) 4-tracking already exists, or is capable of reinstatement along existing formation. New alignment following M1, A1(M) and A64 is proposed east of Cross Gates, offering direct route to East Coast Main Line (and high speed line to north) at Colton Junction, and bypassing Garforth, Micklefield and Church Fenton.

## **M Leeds Parish Church (or 'Leeds Minster') station**

4-tracking of Leeds East Viaduct presents the opportunity to establish a new central Leeds station in a more easterly location, close to Leeds Parish Church (now 'Leeds Minster'). This will relieve passenger pressure at Leeds City Station, it will spur commercial development of east side of city centre (Kirkgate, Quarry Hill, riverside redevelopments etc) and it will provide convenient interchange with bus and coach station. Again no major land take issues.

## **N Neville Hill - Stourton Link**

This will allow 'Midland' passenger flows from Wakefield Kirkgate, Castleford etc to enter Leeds City station from the east, and continue to further destinations (eg Bradford & Halifax) with no need to terminate. This will tend to rebalance Leeds City station and increase capacity, with fewer terminating trains standing in platforms. It will also assist freight flows.

## **O Leeds-Bradford Airport rail link**

This is in line with established scheme to access airport from the east, linking to the existing network at Horsforth on the Leeds-Harrogate line. Steep gradient (circa 1:40) may preclude use of conventional rolling stock, and tram-train - with all axles powered - appears more appropriate. Much greater issues apply to required complementary link to Bradford - extensive review of potential routes to west, to access Bradford-Ilkley route in Guiseley area, indicates no viable alignments.

## **P Newlay - Horsforth link**

Best option for airport rail link from Bradford appears to comprise a link between the Aire Valley line near Newlay and the Harrogate line near Hawksorth. Steep gradient along this route again is unsuitable for conventional rolling stock, requiring 'tram' capability as with proposed link from Horsforth to airport. Horsforth becomes hub for rail links between Bradford and Harrogate.

## **Q Leeds - Shipley Requadrification**

Traffic growth along Aire Valley route, both organic and spurred by local initiatives such as Bradford CrossRail and Aire Valley connection to Leeds Bradford airport, creates an imperative for restoration of 4-track capability between Leeds and Shipley. It is a matter of concern that the recent construction of new stations at Apperley and Kirkstall Forge will effectively preclude full-length requadrification of this route.

## **R Tramway extension to Otley**

With airport links to Leeds and Bradford routed via Horsforth, opportunity exists to continue tram route to Otley via A658 and A660, and returning to existing network at Menston via restoration of abandoned line from Otley.

## **S Skipton - Colne restoration**

Skipton-Colne restoration would provide an alternative transpennine freight route with no major tunnels. Aire Valley passenger services would logically continue beyond Skipton to Colne, Burnley, Blackburn and Preston.

## **T Rail link to Doncaster Sheffield Airport**

Doncaster Sheffield Airport is located too far from any potential station site on the Doncaster-Gainsborough line. The alternative is a dedicated terminating branch into the airport, but this will not attract viable train loadings, especially with low passenger numbers that currently apply. Best option would appear to be diversion of ECML north of Bawtry.

## **U Ardsley - Laisterdyke restoration**

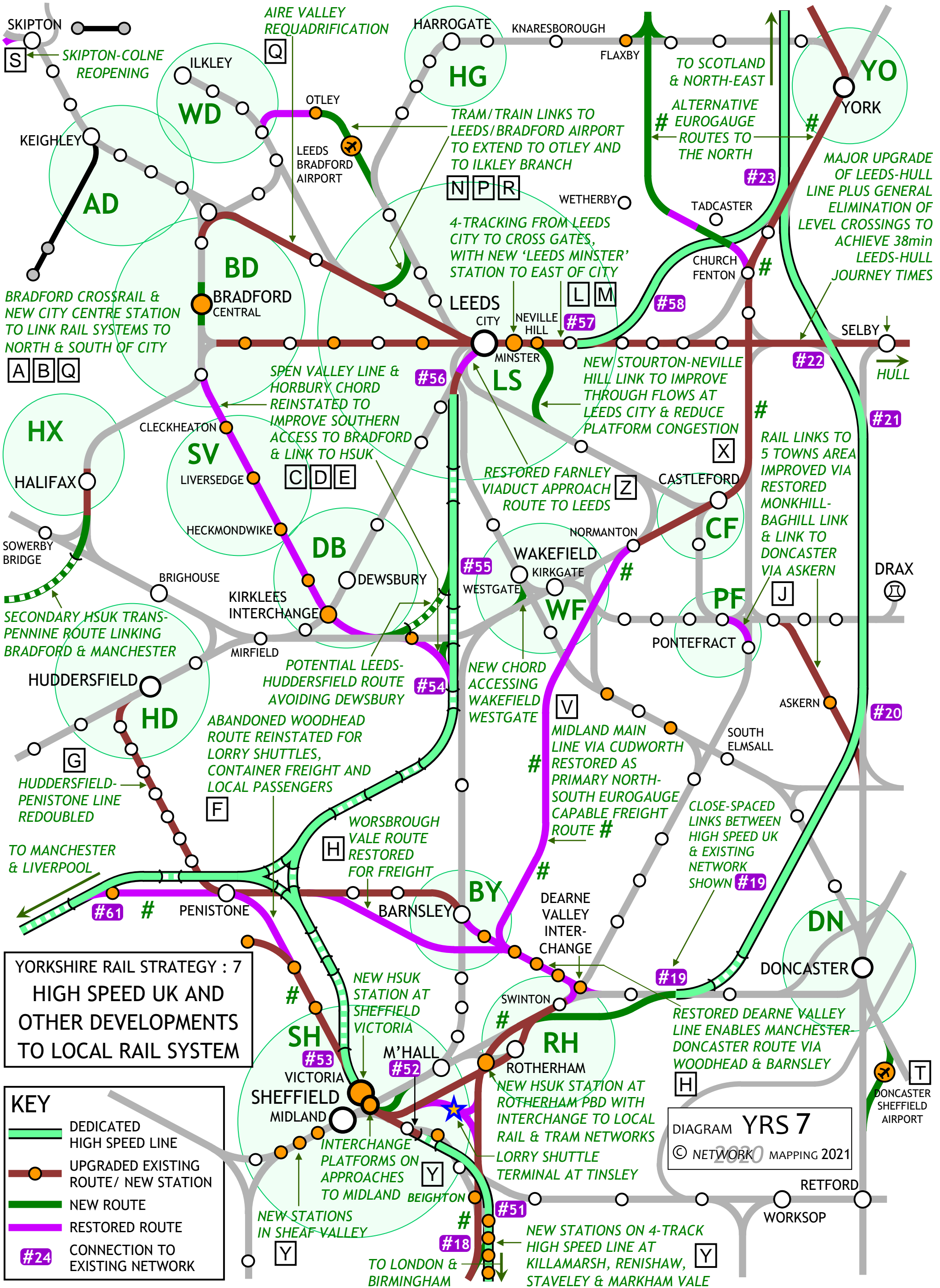
Extensive urban development now blocks former Great Northern route between Ardsley and Laisterdyke, rendering impracticable any prospect of heavy rail restoration. Greater possibilities exist for light rail or tram/train, capable of following more constrained and sometimes on-street alignments.

## **V Midland Main Line restoration**

Abandoned Midland Main Line between Swinton and Normanton has some potential as an express passenger route from Sheffield to Leeds, but its utility is limited by its bypassing of Wakefield. It has far more use as a strategic freight route.

## **W Wetherby lines restoration**

Prospects for heavy rail restoration - either to facilitate diversionary route for Harrogate to Leeds services, or as longer-distance freight route on non-ECML route to Teesside - are effectively precluded by original level alignments through Collingham and Spofforth, and (after closure in 1964) subsequent spread of residential development across trackbeds. Best option appears to be tram-train operation, with street running through Bardsey and Collingham, extending to Wetherby.



**YORKSHIRE RAIL STRATEGY : 7**  
**HIGH SPEED UK AND**  
**OTHER DEVELOPMENTS**  
**TO LOCAL RAIL SYSTEM**

**KEY**

- ▬ DEDICATED HIGH SPEED LINE
- ▬ UPGRADED EXISTING ROUTE/ NEW STATION
- ▬ NEW ROUTE
- ▬ RESTORED ROUTE
- #24 CONNECTION TO EXISTING NETWORK

DIAGRAM **YRS 7**  
 © NETWORK MAPPING 2021

**SKIPTON-COLNE REOPENING**

**BRADFORD CROSSRAIL & NEW CITY CENTRE STATION TO LINK RAIL SYSTEMS TO NORTH & SOUTH OF CITY**

**SPEN VALLEY LINE & HORBURY CHORD REINSTATED TO IMPROVE SOUTHERN ACCESS TO BRADFORD & LINK TO HSAK**

**SECONDARY HSAK TRANS-PENNINE ROUTE LINKING BRADFORD & MANCHESTER**

**HUDDERSFIELD-PENISTONE LINE REDOUBLED**

**HUDDERSFIELD-LEEDS ROUTE REINSTATED FOR LORRY SHUTTLES, CONTAINER FREIGHT AND LOCAL PASSENGERS**

**WORSBROUGH VALE ROUTE RESTORED FOR FREIGHT**

**NEW HSUK STATION AT SHEFFIELD VICTORIA**

**NEW HSUK STATION AT ROTHERHAM PBD WITH INTERCHANGE TO LOCAL RAIL & TRAM NETWORKS**

**INTERCHANGE PLATFORMS ON APPROACHES TO MIDLAND BEIGHTON**

**LORRY SHUTTLE TERMINAL AT TINSLEY**

**NEW STATIONS IN SHEAF VALLEY**

**TO LONDON & BIRMINGHAM**

**TRAM/TRAIN LINKS TO LEEDS/BRADFORD AIRPORT TO EXTEND TO OTLEY AND TO ILKLEY BRANCH**

**4-TRACKING FROM LEEDS CITY TO CROSS GATES, WITH NEW 'LEEDS MINSTER' STATION TO EAST OF CITY**

**RESTORED FARNLEY VIADUCT APPROACH ROUTE TO LEEDS**

**NEW CHORD ACCESSING WAKEFIELD WESTGATE**

**MIDLAND MAIN LINE VIA CUDWORTH RESTORED AS PRIMARY NORTH-SOUTH EUROGAUGE CAPABLE FREIGHT ROUTE**

**RESTORED DEARNE VALLEY LINE ENABLES MANCHESTER-DONCASTER ROUTE VIA WOODHEAD & BARNESLEY**

**TO SCOTLAND & NORTH-EAST**

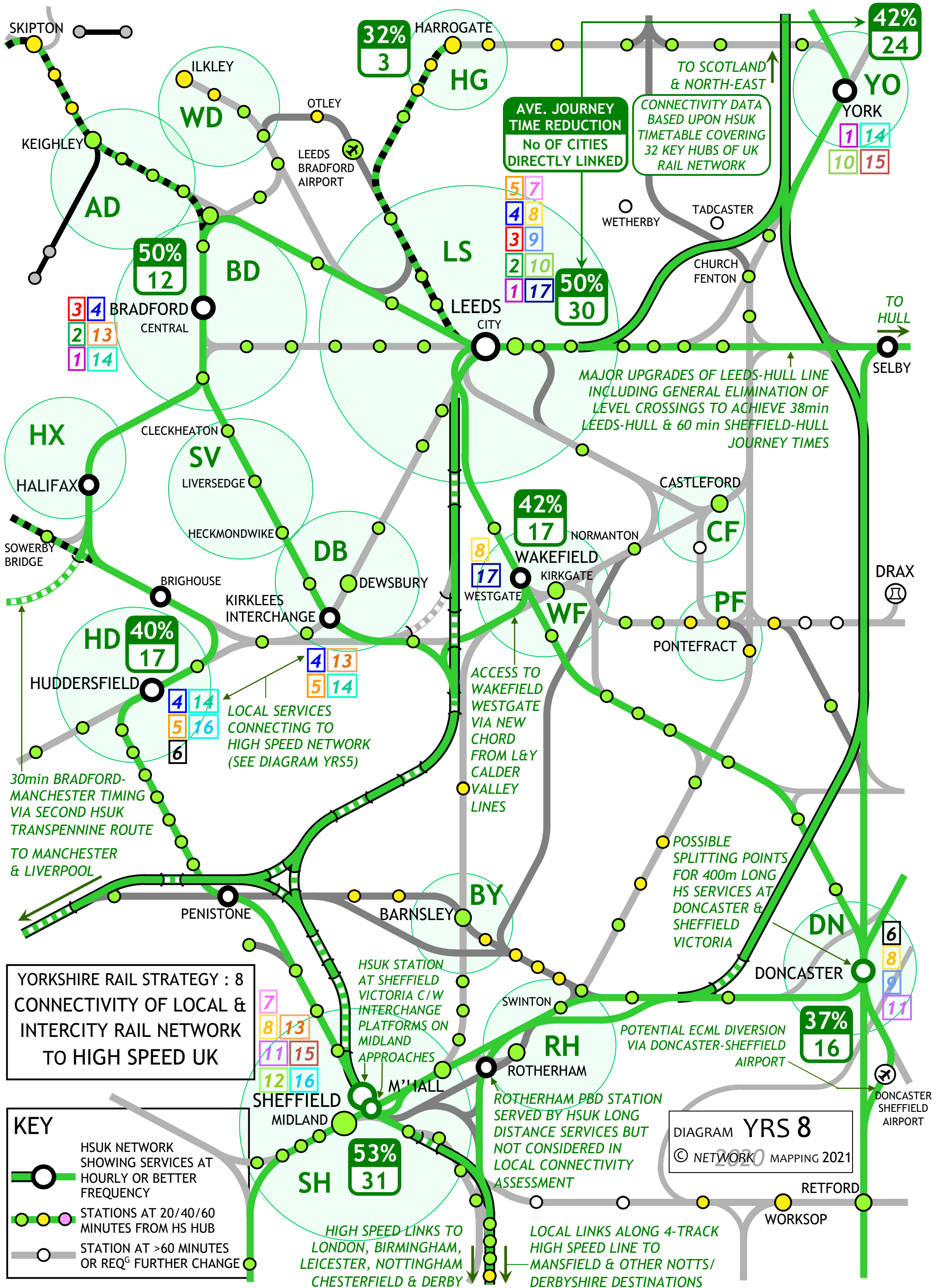
**ALTERNATIVE EUROGAUGE ROUTES TO THE NORTH**

**MAJOR UPGRADE OF LEEDS-HULL LINE PLUS GENERAL ELIMINATION OF LEVEL CROSSINGS TO ACHIEVE 38min LEEDS-HULL JOURNEY TIMES**

**RAIL LINKS TO 5 TOWNS AREA IMPROVED VIA RESTORED MONKHILL-BAGHILL LINK & LINK TO DONCASTER VIA ASKERN**

**CLOSE-SPACED LINKS BETWEEN HIGH SPEED UK & EXISTING NETWORK SHOWN**

**NEW STATIONS ON 4-TRACK HIGH SPEED LINE AT KILLAMARSH, RENISHAW, STAVELEY & MARKHAM VALE**



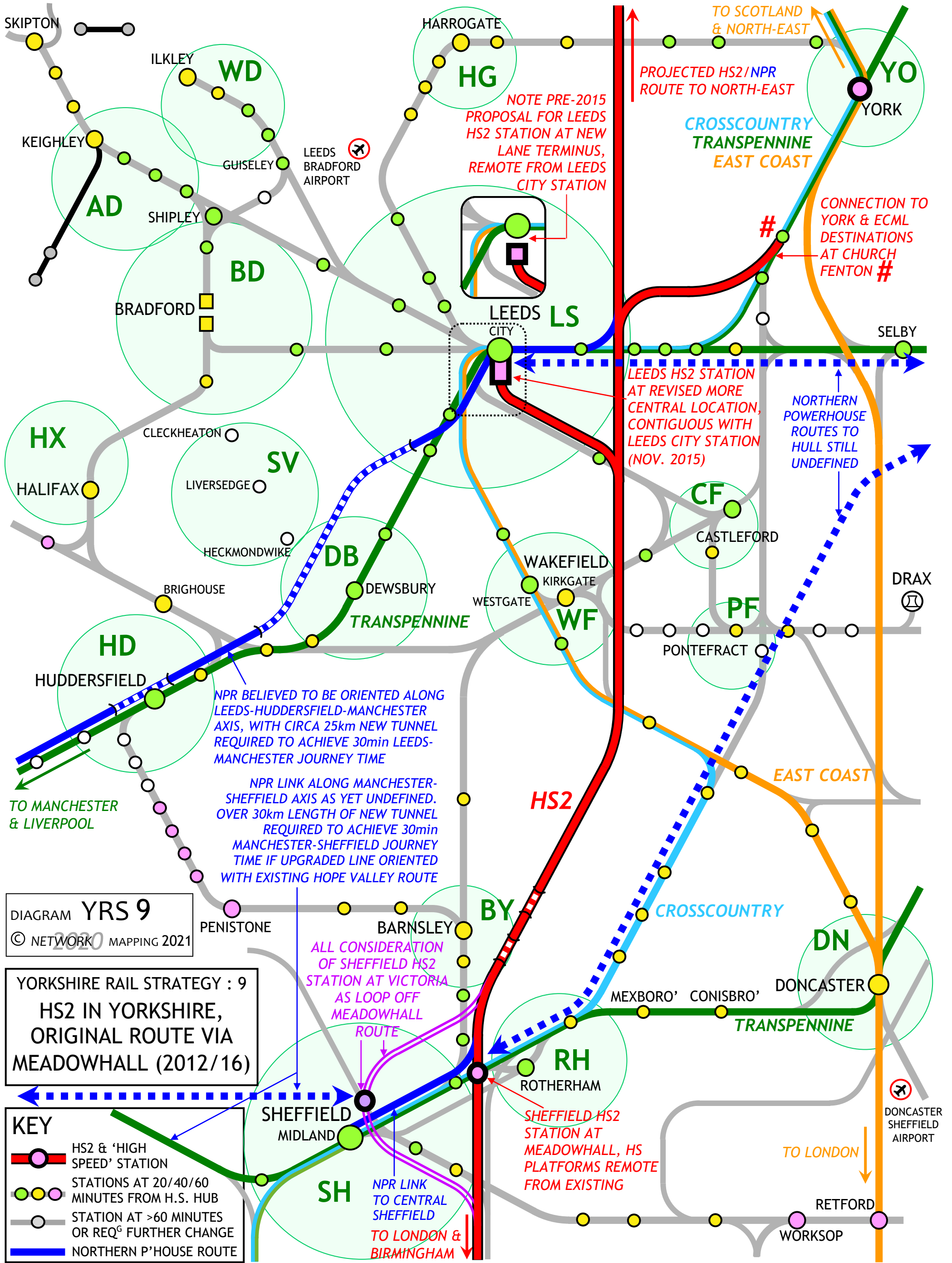


DIAGRAM **YRS 9**  
 © NETWORK MAPPING 2021

**YORKSHIRE RAIL STRATEGY : 9**  
**HS2 IN YORKSHIRE,**  
**ORIGINAL ROUTE VIA**  
**MEADOWHALL (2012/16)**

**KEY**

- HS2 & 'HIGH SPEED' STATION
- STATIONS AT 20/40/60 MINUTES FROM H.S. HUB
- STATION AT >60 MINUTES OR REQ<sup>d</sup> FURTHER CHANGE
- NORTHERN P'HOUSE ROUTE

NOTE PRE-2015 PROPOSAL FOR LEEDS HS2 STATION AT NEW LANE TERMINUS, REMOTE FROM LEEDS CITY STATION

PROJECTED HS2/NPR ROUTE TO NORTH-EAST

CROSSCOUNTRY TRANSPENNINE EAST COAST

CONNECTION TO YORK & ECML DESTINATIONS AT CHURCH FENTON #

LEEDS HS2 STATION AT REVISED MORE CENTRAL LOCATION, CONTIGUOUS WITH LEEDS CITY STATION (NOV. 2015)

NORTHERN POWERHOUSE ROUTES TO HULL STILL UNDEFINED

NPR BELIEVED TO BE ORIENTED ALONG LEEDS-HUDDERSFIELD-MANCHESTER AXIS, WITH CIRCA 25km NEW TUNNEL REQUIRED TO ACHIEVE 30min LEEDS-MANCHESTER JOURNEY TIME

NPR LINK ALONG MANCHESTER-SHEFFIELD AXIS AS YET UNDEFINED. OVER 30km LENGTH OF NEW TUNNEL REQUIRED TO ACHIEVE 30min MANCHESTER-SHEFFIELD JOURNEY TIME IF UPGRADED LINE ORIENTED WITH EXISTING HOPE VALLEY ROUTE

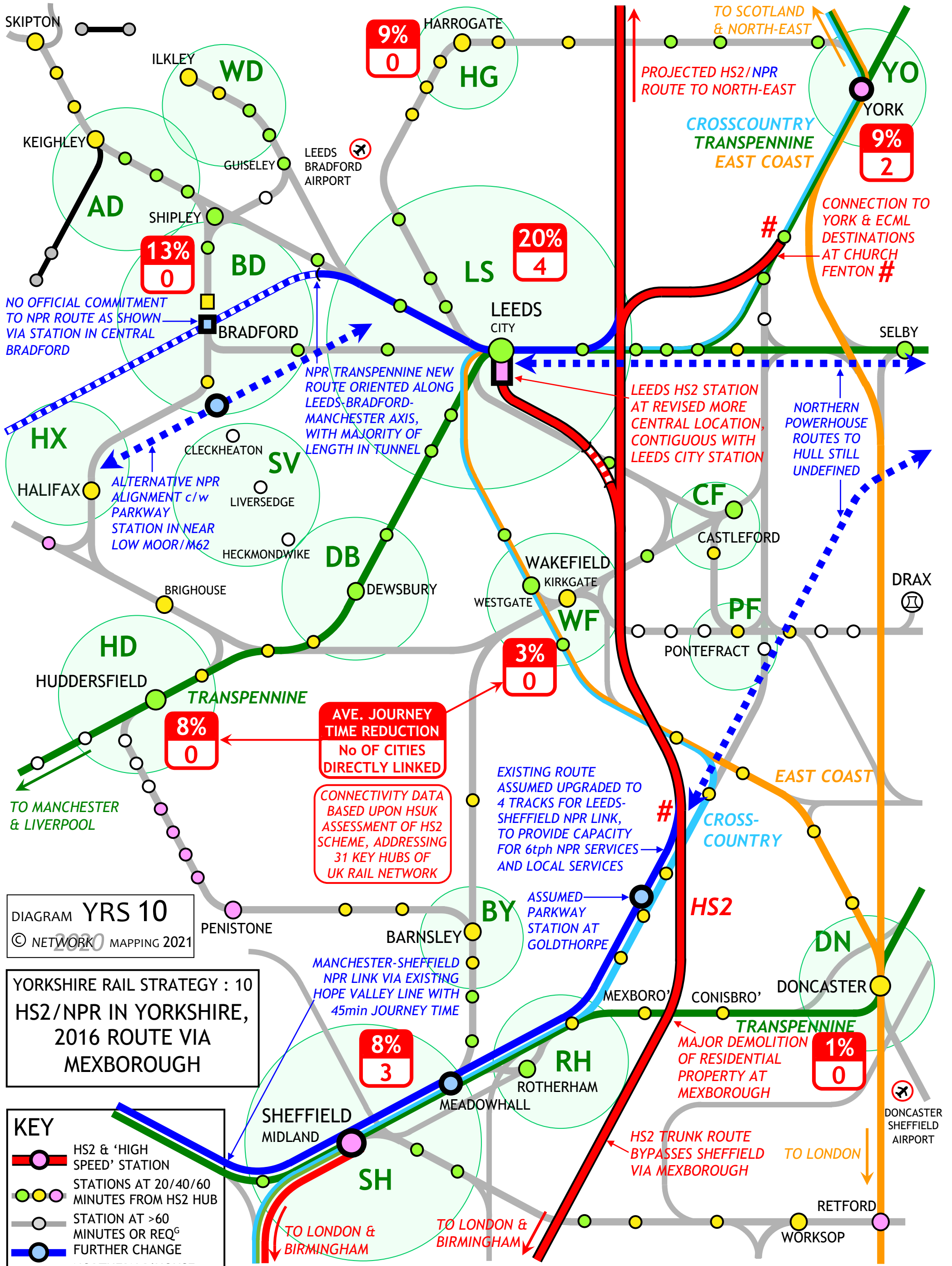
ALL CONSIDERATION OF SHEFFIELD HS2 STATION AT VICTORIA AS LOOP OFF MEADOWHALL ROUTE

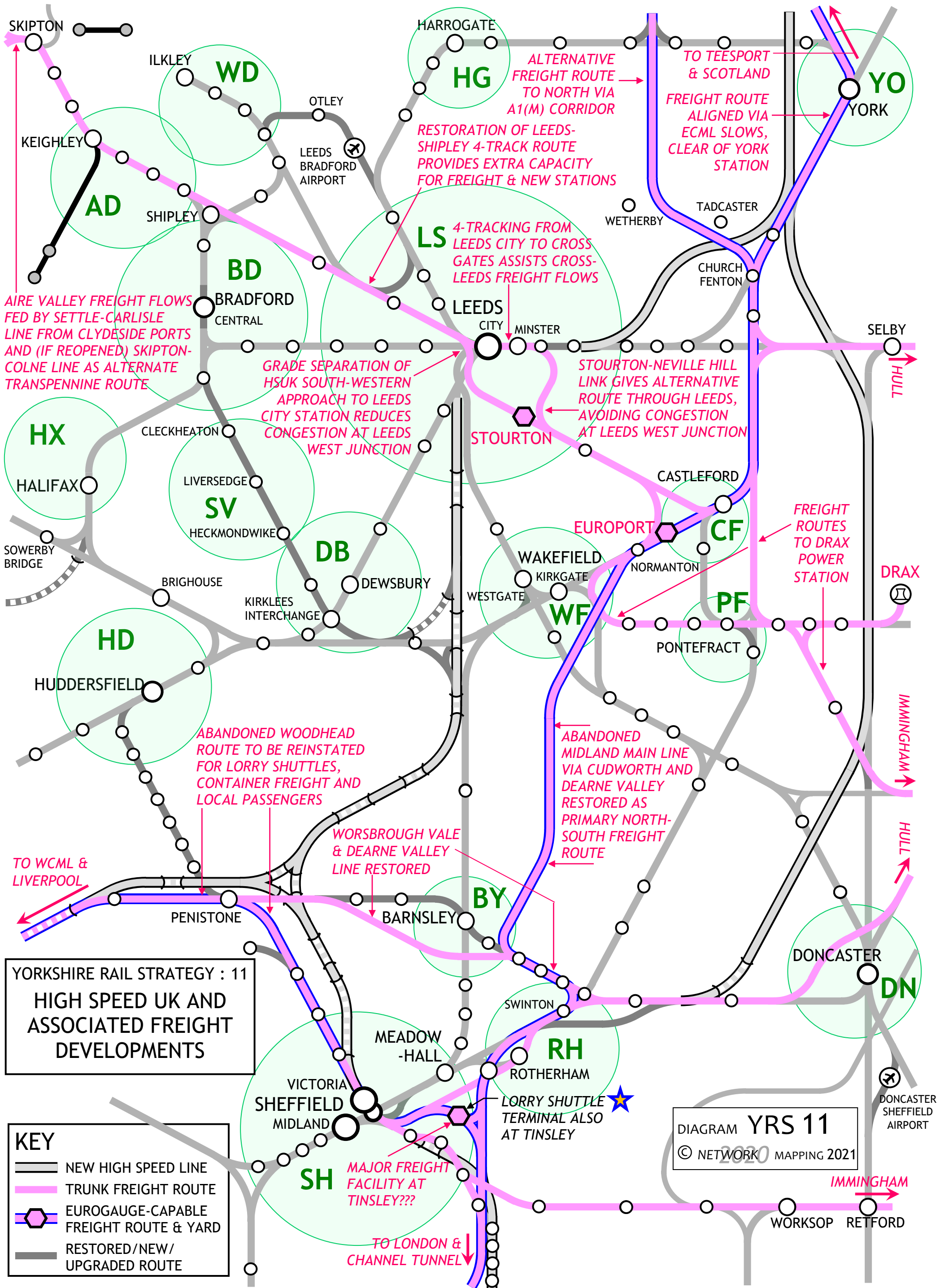
SHEFFIELD HS2 STATION AT MEADOWHALL, HS PLATFORMS REMOTE FROM EXISTING

NPR LINK TO CENTRAL SHEFFIELD TO LONDON & BIRMINGHAM

TO LONDON

DONCASTER SHEFFIELD AIRPORT





YORKSHIRE RAIL STRATEGY : 11  
 HIGH SPEED UK AND  
 ASSOCIATED FREIGHT  
 DEVELOPMENTS

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

DIAGRAM YRS 11  
 © NETWORK 2020 MAPPING 2021

SKIPTON  
 ILKLEY **WD**  
 OTLEY  
 LEEDS BRADFORD AIRPORT  
 HARROGATE **HG**  
 ALTERNATIVE FREIGHT ROUTE TO NORTH VIA A1(M) CORRIDOR  
 TO TEESPORT & SCOTLAND  
 FREIGHT ROUTE ALIGNED VIA ECML SLOWS, CLEAR OF YORK STATION  
 YORK **YO**  
 KEIGHLEY **AD**  
 SHIPLEY  
 BRADFORD CENTRAL **BD**  
 LEEDS CITY **LS**  
 RESTORATION OF LEEDS-SHIPLEY 4-TRACK ROUTE PROVIDES EXTRA CAPACITY FOR FREIGHT & NEW STATIONS  
 4-TRACKING FROM LEEDS CITY TO CROSS GATES ASSISTS CROSS-LEEDS FREIGHT FLOWS  
 WETHERBY  
 TADCASTER  
 CHURCH FENTON  
 SELBY  
 AIRE VALLEY FREIGHT FLOWS FED BY SETTLE-CARLISLE LINE FROM CLYDESIDE PORTS AND (IF REOPENED) SKIPTON-COLNE LINE AS ALTERNATE TRANSPENNINE ROUTE  
 GRADE SEPARATION OF HSUK SOUTH-WESTERN APPROACH TO LEEDS CITY STATION REDUCES CONGESTION AT LEEDS WEST JUNCTION  
 STOURTON-NEVILLE HILL LINK GIVES ALTERNATIVE ROUTE THROUGH LEEDS, AVOIDING CONGESTION AT LEEDS WEST JUNCTION  
 STOURTON  
 CASTLEFORD  
 HX **HX**  
 HALIFAX  
 CLECKHEATON  
 LIVERSEDGE **SV**  
 HECKMONDWIKE  
 DB **DB**  
 DEWSBURY  
 EUROPORT **CF**  
 CASTLEFORD  
 SOWERBY BRIDGE  
 BRIGHOUSE  
 KIRKLEES INTERCHANGE  
 WAKEFIELD **WF**  
 KIRKGATE  
 NORMANTON  
 PF **PF**  
 PONTEFRACT  
 DRAX  
 HD **HD**  
 HUDDERSFIELD  
 ABANDONED WOODHEAD ROUTE TO BE REINSTATED FOR LORRY SHUTTLES, CONTAINER FREIGHT AND LOCAL PASSENGERS  
 WORSBROUGH VALE & DEARNE VALLEY LINE RESTORED  
 ABANDONED MIDLAND MAIN LINE VIA CUDWORTH AND DEARNE VALLEY RESTORED AS PRIMARY NORTH-SOUTH FREIGHT ROUTE  
 TO WCML & LIVERPOOL  
 PENISTONE  
 BARNESLEY **BY**  
 SWINTON  
 MEADOW-HALL **RH**  
 ROTHERHAM  
 LORRY SHUTTLE TERMINAL ALSO AT TINSLEY  
 DONCASTER **DN**  
 DONCASTER SHEFFIELD AIRPORT  
 SH **SH**  
 VICTORIA SHEFFIELD MIDLAND  
 MAJOR FREIGHT FACILITY AT TINSLEY???